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TRADE LIBERALISATION, ECONOMIC GROWTH AND POVERTY*

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This paper examines the relationship between trade liberalisation, economic growth and the alleviation of extreme poverty in developing countries. These are among the most controversial of all issues of economic policy at present and among the most important. It is beyond dispute, I think, that higher levels of output and income in the developing world could improve the prospects of millions of people and, at least potentially, contribute towards improving the living standards of the worst off members of society. Trade liberalisation has been advanced as a major component of the policy cocktail for faster growth and if this view were misguided it would be serious news indeed.

Aside from its effects via economic growth, trade liberalisation also has direct impacts on poverty via prices that poor households receive and pay for goods and services, the wages they command, the scope for government expenditure and the shocks that households face. These effects, too, are subject to great controversy. Economists may have a mild presumption that opening up international trade will benefit poor people in developing countries, because it is expected to boost the real rewards of unskilled labour, via factor rewards, but it is widely recognised that there will be exceptions,

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often extensive ones. Activists, on the other hand, provide a steady stream of horror stories about lost livelihoods and exploitation that could lead the unwary to conclude that trade liberalisation always increases poverty. Again, there is great importance in understanding the links between trade liberalisation and poverty so that the policy debate can be properly informed and liberalisation itself be used to best effect.

This paper attempts to present and assess the evidence on both those routes to poverty reduction without entering directly into policy debate. In part I it critically surveys the literature on the effects of openness to trade on income. This literature has certainly not settled down to a received view, still less a proven conclusion, but given the importance of its subject-matter it is worth asking where it has got to. Part II briefly comments on the link between economic growth and poverty reduction. In both of these parts I am offering new interpretation rather than new results. In part III, however, which considers the static links between trade liberalisation and poverty, I report new results from a study currently underway in the University of Sussex.

The paper is unashamedly positive and economic in approach rather than ethical. This is not because ethical considerations do not matter or that they should be dominated by economic considerations. Rather it is because ethical deliberations must be conditioned by the way the world is: infeasible solutions to the world's problems are not ethical in any meaningful sense. Hence I offer my thoughts on trade liberalisation and economic performance as necessarily only one part of the debate that the Academy, indeed humanity, is having about globalisation.

I. Trade Liberalisation and Growth

The motivation for supposing that trade influences income is summarised in figure 1 and many other like it in Ben-David (2000). In the nineteenth century openness – measured by the ratio of exports to output, an outcome rather than a policy measure – was more or less constant and the growth of real income per head modest and steady. After the severe disruptions of the first half of the twentieth century openness increased and growth accelerated unprecedentedly: since 1945 income has far out-stripped the extrapolated growth path although since about the 1970s the growth rate has gradually fallen to something like pre-war rates but at a higher level of income. There is much to debate about this figure – which is what this section is about – but it is dramatic enough to be worth debating.

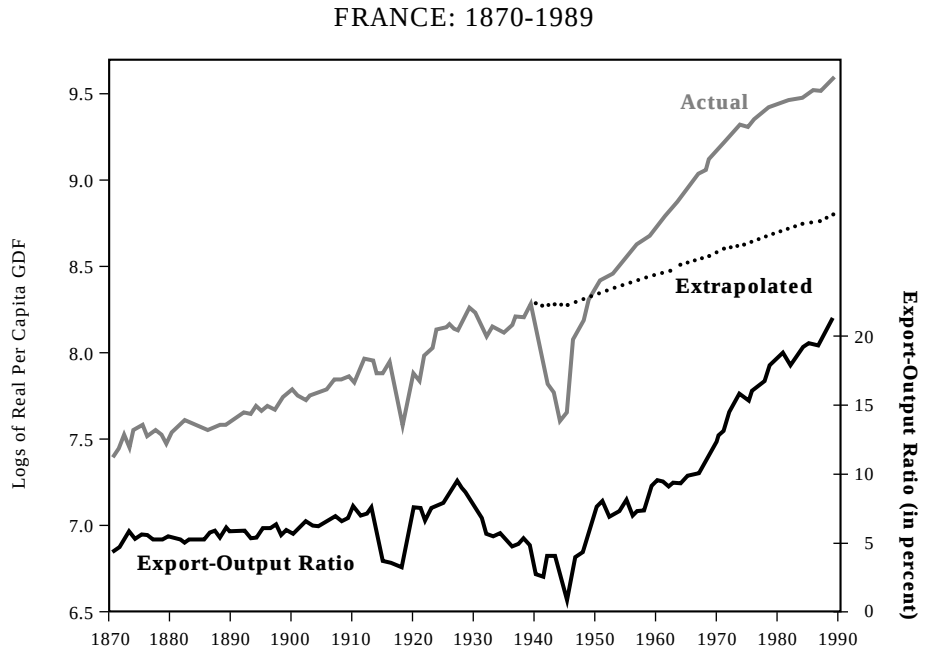

Figure 1. Source: Ben-David and Loewy (1998).

Before embarking on any analysis, however, let me do a little terminological ground clearing. The received theory of economic growth is concerned with steady-state rates of growth that would continue indefinitely if nothing in the external environment changed. These growth rates are quite independent of any transitory or adjustment issues. I will refer to these as steady-state growth, although, in fact, I will not refer to them very much because steady-states under unchanging conditions are essentially unobservable.

In practical terms one should also be interested in long-term transitional growth-rates, by which I mean long-lived transitions from one growth path to another. If trade liberalisation, or any other policy, shifted the economy onto a higher but parallel growth path we would observe actual growth rates in excess of the steady-state rates while the change occurred. Given that major transitions can take decades it is going to be very difficult to tell such transitional rates from steady-state rates empirically (Brock and Durlauf, 2001).

The treatment of trade liberalisation raises similar, but more tractable, issues. In what follows I will try to distinguish openness to trade (often just 'openness' where there is no room for confusion), which is a levels or state variable, from trade liberalisation, which refers to its change. If these concepts are clear conceptually, they are certainly not empirically: both should strictly be measured by policy stances, but since that is so complex, both are frequently proxied by outcome measures. I will briefly allude to these issues below, but illustrations of the empirical difficulties they raise can be found in Pritchett (1996) and Harrison (1996).

I should also clarify that I am considering here only the liberalisation of developing countries' own trade policies, not the opening of markets for their exports or the nature of the 'rules of the game' of the world trading system. The latter pair are important and warrant separate papers (see Hoekman, Michalopoulos and Winters, 2003, on the last). I do believe, however, that quantitatively they are not as significant as developing countries' own policies.

I.1. *Levels vs. Growth Rates*

The literature on trade and growth is rather casual about which of the various concepts it is referring to. The most obvious relationship is that between openness and the level of income. Simple trade policy theory leads us to expect a positive relationship here, at least if we can measure real income appropriately, although the situation becomes more complex once one allows for effects such as those on investment, productivity, dynamic comparative advantage and agglomeration. If there is such a relationship, taking first differences gives us one between trade liberalisation and the growth of income, and as noted above this could actually be very long-lived.

More recent theory has also explored whether openness could affect steady-state growth rates. Thus, for example, if greater competition or exposure to a larger set of ideas or technologies increased the rate of technical progress, it would permanently raise growth rates. This is an immensely attractive view of the world, but one which is difficult to maintain intellectually. Jones (1995), for example, argues that since the US growth rate has displayed no permanent changes over the period 1880-1987, one must conclude either that it cannot have been determined by factors that change substantially, such as trade policy or openness, or that changes in such factors have been just off-setting, which is

not very credible.[1] More positively Hall and Jones (1997) argue that 'there is a great deal of empirical and theoretical work to suggest that the primary reason that countries grow at such different rates for decades at a time is *transition dynamics*' (italics in original, p. 173). Solow (2001) also makes the same point and it is the starting point for what follows.

I.2. *The Direct Evidence*

If the growth effects of trade liberalisation are 'just' transitional dynamics, it is still worth asking how large they are likely to be. Suppose that the transition is spread over, say, twenty years, the issue is essentially what is the income or output gain due to trade liberalisation.

If we consider simple traditional Harberger triangles, losses from trade restrictions as large as 5% of GDP are very rare, and so over twenty years the maximum effect would be 1/4% p.a. on the observed growth rate. Moreover, since some of these losses arise from consumption misallocations and since the effect of trade liberalisation will be to switch output from goods that are relatively dear to those that are relatively cheap, it is likely that increases in GDP measured at initial-period relative prices are likely to be smaller. These sort of calculations underlie the occasionally expressed view that trade policy just cannot be very important. However, there are several reasons for believing that there is more to the story than this.

If we add imperfect competition into the equation the consumption and production gains from trade reform will tend to increase. For example, in CGE modelling exercises, adding increasing returns and large group monopolistic competition to the specification often more than doubles the estimates of the GDP effects of trade reform (e.g. Francois, McDonald and Nordstrom, 1996). If one assumes small group models of oligopoly – surely more appropriate to developing countries – the gains are usually larger as rationalisation effects occur (e.g. Rodrik, 1988, Gasiorek, Smith and Venables, 1992).

A further refinement is to allow investment and the capital stock to increase following the efficiency gains from trade liberalisation, as in Baldwin (1992). This further doubles or trebles the estimated GDP effects

[1] Or, even worse intellectually, that the underlying relationships have been changing through time. Jones also finds the same constancy of growth in other OECD countries once he allows for a gradually subsiding post-world-war II boom.

(although not the welfare effects), see, for example, Francois, McDonald and Nordstrom (1996) or Harrison, Rutherford and Tarr (1997).

According to Romer (1994) the principal effect of trade restrictions is to reduce the supply of intermediate goods to an economy. Recognising that this can have infra-marginal effects on productivity he argues that overlooking this effect leads to a several-fold under-estimate of the production penalty of protection. Romer's effect will show up in the data as a positive relationship between trade liberalisation and productivity and one can think of further reasons why opening trade may give a one-off boost to productivity – e.g. competition stimulating technology adoption and adaptation, or the elimination of x-inefficiency.

The upshot of these paragraphs is that, while eliminating Harberger triangles alone seems unlikely ever to boost transitional growth rates significantly, more sophisticated models of international trade do appear to promise gains that would be detectable over two or three decades. One direct verification of this is Rutherford and Tarr (2002) who implement a 'Romeresque' model over a more-or-less infinite horizon.[2] They find that reducing a uniform 20% tariff to 10% increases the underlying steady-state growth rate of 2% p.a. to 2.6% p.a. over first decade and 2.2% p.a. over the first five decades, and that even after these fifty years the annual growth rate is 2.1% p.a.

None of this theory or modelling guarantees larger returns to trade liberalisation, but they do suggest that it is worth looking for them empirically. Moreover, although Rutherford and Tarr's model contains only level effects and transitional dynamics, their very long duration suggests that it will be difficult to distinguish them from changes in steady-state growth rates empirically, especially in post-war data. That is, given that levels of openness reflect previous trade liberalisation (since all economies were pretty closed in 1945), it is easy to imagine empirical studies linking openness to observed growth rates even though over an infinite horizon it should have no such effect. For this reason in discussing the various results from this literature below I do not make much out of whether they relate openness or liberalisation to growth, although of course in principle it is a very important distinction.

Over the 1990s the conviction that trade liberalisation or openness was good for growth was fostered by some visible and well-promoted cross-

[2] They model a 54-year horizon explicitly and set end conditions to roughly reflect optimisation to infinity.

country studies e.g. Dollar (1992), Sachs and Warner (1995), Edwards (1998) and Frankel and Romer (1999). These, however, have received, and by and large deserved, pretty rough treatment from Rodriguez and Rodrik (2001), who argue, inter alia, that their measures of openness are flawed and their econometrics weak. For example, Rodriguez and Rodrik observe that Dollar's measure of trade distortions (the deviation of prices from international levels) bears no direct relationship to trade restrictiveness, that his and Sachs and Warners' measures pick up macro-economic distortions as well as trade restrictions, that Edwards' estimation methods are surprising and that Frankel and Romer do not adequately allow for the possibility that growth causes openness rather than vice versa.

The difficulty of establishing an empirical link between liberal trade and growth arises from at least four difficulties – see Winters (2003a). First, there is some confusion about what 'openness' entails. In the context of policy advice, it is most directly associated with a liberal trade regime (low tariffs, very few non-tariff barriers, etc), but in fact that is rarely the measure used in empirical work. Thus, for example, Dollar's (1992) results rely heavily on the volatility of the real exchange rate, while Sachs and Warner (1995) combine high tariff and non-tariff measures with high black market exchange rate premia, socialism and the monopolisation of exports to identify non-open economies. Pritchett (1996) shows the trade indicators are only poorly correlated with other indicators of openness, while Harrison (1996), Harrison and Hanson (1999) and Rodriguez and Rodrik (2001) show that most of Sachs' and Warners' explanatory power comes from the non-trade components of their measure.

Second, once one comes inside the boundary of near autarchy, measuring trade stances across countries is difficult. For example, even aggregating tariffs correctly is complex – see Anderson and Neary (1996), whose measure depends on imports being determined according to a constant elasticity of substitution sub-utility function with an assumed elasticity – and then one needs to measure and aggregate quantitative restrictions and make allowances for the effectiveness and predictability of enforcement and collection.[3] Such measurement problems are less significant if one has panel data and wishes to identify changes in trade policy

[3] For example, although in 1997 Brazil and Chile had broadly equal average tariffs (12% and 11% respectively), the former was much less open than the latter because its import regime was complex and subject to a good deal of discretionary intervention.

through time for a single country, although even here Anderson (1998) argues that different measures point in different directions. Nonetheless, Vamvakidis' (1999) results, based on a panel data for over one hundred countries, are more convincing than those of purely cross-section studies. Vamvakidis concludes that multilateral liberalisations over the period 1950-89 were associated with increases in rates of growth, while discriminatory regional trading agreements were not.[4]

Third, causation is extremely difficult to establish. Does trade liberalisation result in, or from, economic growth? Frankel and Romer (1999) and Irwin and Tervio (2002) address this problem by examining the effects of the component of openness that is independent of economic growth. This is the part of bilateral trade flows that is explained by the genuinely exogenous variables: population, land area, borders and distances. This component appears to explain a significant proportion of the differences in income levels and growth performance between countries, and from this the authors cautiously suggest a general relationship running from increased trade to increased growth. The problem, however, as Rodriguez and Rodrik (2001) and Brock and Durlauf (2001) observe, is that such geographical variables could well have direct effects on growth in their own right, and that this alone could explain the significance of the instrumental estimate of trade constructed out of them. For example, geography may influence health, endowments or institutions, any one of which could affect growth. These concerns have, however, recently been answered by Frankel and Rose (2002) who repeat the instrumental variables approach of Frankel and Romer and show that the basic conclusion is robust to the inclusion of geographical and institutional variables in the growth equation, which suggests that openness has a role even after allowing for geography, etc.

Causation is a particular problem in studies that relate growth to openness measured directly – usually, these days, as (exports + imports)/GDP. Such openness could clearly be endogenous for both the export and the import share seem likely to vary with income levels. Rodrik, in particular, stresses this point, in, for example, Rodriquez and Rodrik (2001) and Rodrik (2000). Endogeneity, however, could be a threat even when one works with directly measured trade policy, such as average tariffs, for, at

[4] Vamvakidis considers liberalisations only up to 1989 in order to leave enough post-reform data to identify growth effects.

least in the short run, we know that pressure for protection increases as growth falters – see, for example, Bohara and Kaempfer (1991).

The fourth complication is that for liberal trade policies to have a quasi-permanent effect on growth almost certainly requires their combination with other good policies as well. The sort of policies envisaged here are those that encourage investment, allow effective conflict resolution and promote human capital accumulation. Unfortunately the linear regression model, which is standard to this literature, is not well equipped to identify the necessity of variables rather than their additivity in the growth process. Hints of importance of these policies, however, can be found in exercises identifying the structural relationships through which openness effects growth. Thus, for example, Taylor (1998) and Warziarg (2001) both find that investment is a key link and thus imply that poor investment policies could undermine the benefits of trade liberalisation.

An important dimension of the role of other policies is the possibility that openness is correlated with improvements in other policies – see Krueger (1978, 1990). Perhaps the most important dimension is corruption: recent evidence from Ades and Di Tella (1997, 1999) shows a clear cross-country connection between higher rents, stemming from things such as active industrial policy and trade restrictions, and higher corruption. The latter, in turn, reduces investment and hence growth.[5] On standard macroeconomic policy, inflation appears to be lower in open economies. Romer (1993) suggests that this is because real depreciation is more costly in terms of inflation in open economies, so that such economies are less likely to run the risks of excessive money creation.

There is also a well-known static dimension to the question of 'other policies'. If an economy has other distortions – for example, the severe mis-pricing of, or missing markets for, elements of the environment or an inability to raise government revenue internally – reducing trade barriers can be harmful. These considerations may indicate the need for caution in the speed and style of liberalisation, although even so, the case needs to be proven.[6]

[5] Wei (2000), on the other hand, suggests that the losses from corruption increase with openness, because corruption impinges disproportionately on foreign transactions, and as a result that open countries have greater incentives to develop better institutions.

[6] The case for revenue tariffs is legitimate for poor countries, because trade taxes are often easy to collect. However, revenue tariffs would not show the large inter-sectoral or inter-temporal variations that we observe in most active trade policy regimes, so I do not believe that revenue is a prime motivation in most cases.

Two methodological points about other policies might usefully be made at this stage. Brock and Durlauf (2001), in a fairly complex discussion of the the statistician's concept of exchangeability, argue that growth theory is too open to be adequately tested with the economists' traditional regression approaches to empirical work. There are too many potential variables and too little information about model structure (e.g. functional form and whether parameters are constant across countries) to allow classical inference to work. Moreover, they argue, the usual search for robustness – the significance and consistency in sign of a particular variable across a range of specifications – is futile if the true determinants of growth are, in fact, highly correlated. Rather, Brock and Durlauf suggest using policy-makers' objectives to identify the trade-offs between different types of error, and from this conducting specification searches and estimation in an explicitly decision-theoretical way, recognising the wide bounds of uncertainty. This is challenging advice, which has yet to be applied to the role of trade liberalisation in growth, but it is a salutary warning about just how cautious we should be about growth econometrics.

The second general observation comes from Baldwin (2002), who argues that the quest to isolate the effects of trade liberalisation on growth is misguided. Trade liberalisation has never been advanced as an isolated policy, nor has it ever been applied as such. Thus, he argues, the only useful question is how it fares as part of a package including, say, sound macro and fiscal policies. Baldwin concludes that, in this context, openness is a positive force for growth.

I.3. *Growth, Trade and Institutions*

Recent research has laid great stress on the role of institutions in explaining economic growth – for example, Hall and Jones (1997), Acemoglu, Johnson and Robinson (2001). This has led to suggestions – explicit or implicit – that trade policy does not matter. This, it seems to me, is a misinterpretation, which is worth correcting.

First, as Ben-David comments in the summary of his work (Ben-David, 2000), the statement that openness or trade liberalisation affects growth is quite different from saying that it is all that matters or even that it is the most important factor. The work described above refers to the first statement only.

More substantively, in a very thoughtful paper Rodrik, Subramanian and Trebbi (2002) (RST) have argued that institutions far outperform geog-

raphy and openness as explanations of income per head (PPP, 1995) and, indeed, that given institutions, openness has an (insignificantly) negative effect. They find, however, that openness partly explains the quality of institutions and so has a positive indirect effect on incomes. Its total effect, measured in terms of the effects of a one standard deviation change on income level, is about one-quarter of that of institutions. In all of this they are careful to instrument openness and institutional quality to avoid the danger of their being determined by rather than determining growth.

RST measures institutional quality mainly by Kaufmann, Kraay and Zoido-Lobaton's (2002) composite index for the 'rule of law', which includes 'perceptions of the incidence of both violent and non-violent crime, the effectiveness and predictability of the judiciary, and the enforceability of contracts' (p. 6).[7] They follow Acemoglu, Johnson and Robinson by instrumenting institutions with colonial mortality, or, in alternative estimates which broadly support their main results, with the shares of the population speaking English or another European language.

The interpretation of RST's results is quite subtle, as they, themselves, recognise. Perceptions are the key to investment behaviour, so the question of how to influence them is important. Openness apparently explains at least some of their variance and so could have a role to play even if only as a signalling device.[8] RST argue strongly that their theory is that institutional quality determines income and that it is, actually, quite variable through time. They stress that settler mortality is only an instrument, not, as Acemoglu, Johnson and Robinson hint and Easterly and Levine (2002) assert, the driver of the results per se. Nonetheless, their empirical methodology leaves them explaining income levels by openness, which is variable through time and, probably in response to policy, colonial mortality and distance from the equator which are obviously not.

If one heeds Brock and Durlauf's advice and thinks about policy-makers' objectives, the conclusion from RST's work would be to pursue openness vigorously – it is the only thing in this model that you could plausibly manipulate and it is far from ineffective in its indirect effects. Certainly you would also want to pursue other means of improving insti-

[7] As Edmond Malinvaud has noted, representing institutions in simple numerical terms is a daunting task, especially for labour markets, which clearly play a key role in the promotion of growth and the allocation of its benefits.

[8] As is claimed, for example, to stem from China's accession to the WTO.

tutions (the 'rule of law' in this specific model, but more generally in the 'real' world), but, as RST note, we have little idea how to do this and plenty of indications that doing so is difficult. Moreover, in my view (but, not, I believe, Dani Rodrik's) pursuing openness has little opportunity cost in terms of other policies. For most developing countries, large increases in openness will be attainable by simple measures that save rather than spend administrative resources – abolishing non-tariff barriers such as discretionary licensing, making tariffs uniform over goods and sources, and reducing tariffs (to reduce evasion). There are resource intensive components to opening up trade – e.g. meeting standards for export markets – and expanding trade will ultimately entail infra-structure costs, but there is much to be done that is free.[9]

I.4. *The indirect evidence – Trade and Productivity*

Despite the econometric difficulties of establishing beyond doubt from cross-sections that openness enhances growth, the weight of the evidence is quite clearly in that direction. Jones (2001) offers a measured assessment and one might also note the frequency with which some sort of openness measure proves important in broader studies of growth – e.g. Easterly and Levine (2001). Certainly, there is no coherent body of evidence that trade restrictions generally stimulate growth, as even Rodriguez and Rodrik concede. The question, then, is where else can we turn for evidence?

Direct evidence on trade and growth can be gleaned from detailed case studies of particular countries and/or growth events. Pritchett (2000) argues that these offer a more promising approach to empirical growth research than do cross-country regressions, and Srinivasan and Bhagwati (2001) chide the economics profession for forgetting these in their enthusiasm for the latter.[10] Case studies find a wide variety of causes and channels for growth, but frequently find openness at the very heart of the matter – see, for example, the NBER study summarised in Krueger (1978). As before, however, the case for openness in general is stronger than that for trade liberalisation alone.

[9] One of my major problems with the current WTO system is the way it is slipping into an ever more resource-intensive agenda – see, for example, Winters (2003b).

[10] They argue that Rodriguez and Rodrik's strictures on the cross-country studies should not undermine one's confidence that openness enhances growth, because that view should never have been based on those studies in the first place.

There is also indirect evidence that examines the steps in the causal relationship between trade liberalisation and growth. The main issue here is the effect on productivity. An influential cross-country analysis of trade and aggregate productivity is Coe and Helpman (1995) on OECD countries, and Coe, Helpman and Hoffmaister (1997) on developing countries. In the latter, developing countries are assumed to get access to their trading partners' stocks of knowledge (measured by accumulated investment in R&D) in proportion to their imports of capital goods from those partners. Thus import-weighted sums of industrial countries' knowledge stocks are constructed to reflect developing countries' access to foreign knowledge. Coe *et al.* find that, interacted with the importing country's openness, this measure has a statistically significant positive effect on the growth in total factor productivity (TFP).

While these results are instructive, Coe *et al.* do not formally test trade against other possible conduits for knowledge, and Keller (1998, 2000) has suggested that their approach is no better than would be obtained from a random weighting of countries' knowledge stocks.[11] One way of reconciling these conflicting results is to relax the strong bilateralism in Coe *et al.*'s access to knowledge measure. The latter implies that the only way for, say, Bolivia to obtain French knowledge is to import equipment from France. But if the USA imports from France (and so, by hypothesis, accesses French knowledge), then Bolivia's imports from the USA should give it at least some access to French. Lumenga-Neso, Olarreaga and Schiff (2001), who advance this explanation, show that recognising such indirect knowledge flows offers a better explanation of productivity growth than any of the earlier studies.

A second approach to the link between trade liberalisation and productivity is cross-sectoral studies for individual countries. Many of these have shown that reductions in trade barriers were followed by significant increases in productivity, generally because of increased import competition, see, for example, Hay (2001) and Ferriera and Rossi (2001) on Brazil, Jonsson and Subramanian (1999) on South Africa, and Lee (1996) on Korea. Kim (2000), on the other hand, also on Korea, suggests that most of the apparent TFP advance is actually due to the compression of margins and to economies of scale. Import competition makes some con-

[11] Coe and Hoffmaister (1999) have, however, challenged the randomness of Keller's 'random' weights.

tribution via these effects, and also directly on 'technology', but overall Kim argues that it was not the major force.

The sectoral studies relate a sector's TFP to its own trade barriers and thus imply that competition is the causal link. But for general liberalisations it is likely that barriers on imported inputs also fall and this could be equally important. At an aggregate and sectoral level Esfahani (1991) and Feenstra *et al.* (1997) suggest such a link, as do Tybout and Westbrook (1995) at the firm level. The last suggest, for Mexico over 1984-90, that there were strong gains from rationalisation (the shrinking or elimination of inefficient firms), that cheaper intermediates stimulated productivity, and that competition from imports stimulated technical efficiency (with the strongest effects in the industries that were already the most open).

Firm level data also allow us to test the perennial claim that exporting is the key to technological advance. While macro studies or case-studies have suggested links to productivity, enterprise level data have shown a much more nuanced picture. Bigsten *et al.* (2000) find positive stimuli from exports to productivity in Africa, and Kraay (1997) is ambiguous for China; Tybout and Westbrook (1995) and Aw, Chung and Roberts (1999), however, find little evidence for them in Latin America and Asia, respectively. The fundamental problem is, again, one of causation: efficiency and exporting are highly correlated because efficient firms export.[12] Hence researchers must first identify this link (by carefully modelling the timing of changes in exports and productivity) if they are then to isolate the reverse one. Tybout (2000) suggests that the differences between his results and those on Africa and China may arise because data shortages obliged the latter pair to use much simpler dynamic structures than he used.

II. From Growth to Poverty

Economists have long maintained that economic growth generally reduces poverty – i.e. that, on average, growth does not have identifiable systematic effects on income distribution – see, for example, Fields (1989), Ravallion (1995), or Bruno, Squire and Ravallion (1998). These early stud-

[12] The same causation difficulty arises in interpreting the observation that where a region exports heavily, all firms are more productive: is it positive spill-overs or comparative advantage?

ies were based on rather small samples, but recent work based on extended samples and reaching the same conclusions, has stirred up great controversy. One recent, but unremarked, contribution is Gallup, Radelet and Warner (1998), who conclude from a cross-country regression that, on average, the incomes of the poor (the lowest 20% of the income distribution) increase proportionately with overall average incomes. They recognise that in some countries the poor see less than proportionate growth (i.e. 'anti-poor' growth), but argue that there are as many converse cases in which the poor have done better than average. They use a sample of 60 countries, including several developed countries, over varying periods since the mid-sixties, and use GDP per head as the proxy for mean incomes.[13] In addition they identify additional independent factors stimulating the growth of the poor's incomes: lower initial income; better health; temperate location; government savings (held to be a proxy for a sound macro stance) and political stability. Openness – defined by the Sachs-Warner (1995) dummy variable – appears to have roughly the same (beneficial) effect on the growth of the incomes of the poor as on average incomes.

These results were more or less replicated by Dollar and Kraay (2000), although using a larger sample and considerably more sophisticated econometric techniques which examine the relationship between growth and poverty both in levels across countries and in changes through time (national growth rates). Dollar and Kraay relate the mean income of the poor (bottom 20% of the income distribution) to overall mean income plus some additional variables. They never reject the hypotheses that the mean income of the poor moves proportionally with mean income nor, with the exception of inflation, that a variety of other variables affect it only via mean income. Thus while inflation appears to have an adverse effect on the poor in addition to its growth-reducing effects, countries' income distributions are not significantly affected by: government consumption, the rule of law, democracy, social expenditure, primary school enrolment and two measures of openness. The residual errors of Dollar and Kraay's equations are large and so are perfectly consistent with there being instances in which growth hurts the poor. But, as with Gallup *et al.*, such cases are, on average, offset by those in which the poor benefit disproportionately.

[13] It is desirable to use different sources of data for the income of the poor and mean income to reduce the chances that the measurement errors in the two variables are highly correlated.

White and Anderson (2001) categorise growth histories into such 'pro' and 'anti' poor experiences and find that in over one quarter of cases, distributional changes offset growth effects – i.e. that the mean and 'poor' incomes moved in different directions. They are not very successful, however, at identifying the factors that make growth pro- or anti-poor. They run 'standard' growth equations for the income growth of each quintile and examine differences in the resulting coefficients. It is hard to detect clear patterns, but one stark result is that openness is associated with significantly higher income growth everywhere except in the *top* quintile, and that the greatest effects proportionally are for lower quintiles. That is, openness appears to be progressive.

Several concerns have been raised about the robustness of these studies of growth, openness and poverty (in addition to those raised above in relation to cross-country regressions). First, the data on the incomes of the poor are clearly subject to error.[14] Reporting errors and sample biases are likely to be serious at the bottom of the distribution and in many cases Dollar and Kraay had to infer the share of the lowest quintile from a broader measure of income distribution. The World Bank's sample of income Gini coefficients (e.g. Ravallion and Chen, 1997 and several later extensions) has been criticised for severe implausibility – e.g. by Atkinson and Brandolini (2001). Knowles (2001) shows that the relationship between inequality and growth can change once one distinguishes between data based on income measures of inequality from those based on consumption data.

Second, some, e.g. White and Anderson (2001), argue that Dollar and Kraay essentially estimate an identity because the mean income of the poor is identically equal to overall mean income multiplied by the poor's share of that income divided by the proportion of observations included in the definition of 'the poor'. Hence, they say, obtaining an elasticity of one on mean income is inevitable. But since Dollar and Kraay include in their equation not the share of the poor but a series of variables that potentially explain it, and since what these variables do not explain could

[14] So too, of course, are those on mean income, but probably less so.

[15] Viewing the Dollar and Kraay approach as explaining the share of the bottom quintile with mean income and a series of other variables does permit a more sophisticated concern. The share of the poorest quintile is a pure number bounded strictly between 0 and 0.2 and effectively between about 0.02 and 0.15. Mean income is unbounded and defined in monetary units. As the sample is expanded to include countries with a larger and larger range of mean incomes, the coefficient on mean income

in principle be picked up by mean income, driving its elasticity away from unity, the critique is misplaced.[15]

Third, there is also the possibility of endogeneity problems. Recent research has suggested that income distribution (and by association, poverty) determines growth rates (and hence mean incomes) – see Aghion, Caroli and Garcia-Peñalosa (1999).

Finally, the average income of the poorest quintile is a very crude indicator of poverty – especially absolute poverty. Ravallion (2001) offers a general discussion of the poverty-growth link and also regresses the absolute poverty ratio on mean income. A 1% increase in mean income results, on average, in a fall of 2 to 2.5% in the number in absolute poverty. Of course, individual experience will vary around this average growth elasticity of poverty, with one of the most important determinants being initial levels of inequality. The more compact the income distribution the greater the share of population likely to be clustered about the poverty line and hence the greater the effect of moving the distribution bodily in one direction or the other.[16]

Ravallion and Datt (1999) explore the factors behind pro-poor growth more thoroughly in the context of differences between Indian states. Higher farm yields, higher development spending and lower inflation all appear to reduce poverty. Most interesting, however, is higher non-farm output: this also helps to reduce poverty but much more strongly where farm productivity is higher, the rural-urban divide smaller and rural education better (all of which indicate relatively higher initial levels of rural income). Translated into the terms of national growth (and probably openness), pro-poor growth seems more likely to occur where initial conditions give the poor the ability to take advantage of the opportunities it generates.

Despite the methodological challenges to the recent literature, there is little reason to challenge the traditional conclusion that growth, *on average*, benefits the poor, nor to suggest that growth generated by greater openness

will tend towards zero in order to accommodate the bounded share to the expanding independent variable. However, this would not prevent us from identifying a relationship in which the share of the poor fell systematically over the observable range of income. Thus, while it is desirable to specify a functional form that recognises these boundary conditions and the way in which they could distort the estimates, there is still content in Dollar and Kraay's failure to find such a relationship in their log-linear model.

[16] Ravallion (1998) suggests the robust empirical rule of thumb that the elasticity of the poverty count with respect to mean incomes is roughly proportional to (1 – index of inequality). Ravallion also notes that if the income of the poor is proportional to mean income economic growth benefits the poor far less than average in absolute terms.

is any worse than other growth in this respect. These observations are an important antidote to frequently voiced concerns to the contrary, and place the burden of proof on those who would argue the contrary in any specific case. It is quite clear, however, that on occasions growth has been accompanied by worsening poverty and the intellectual challenge is to identify why.

III. Trade Liberalisation and Poverty

This section considers the direct, static, impact of trade liberalisation on poverty. It is based on a conceptual framework for thinking about such issues – basically a taxonomy – that I have discussed elsewhere (Winters 2000, 2002), but it advances the argument by applying the framework to a specific case empirically. Thus here I discuss the ways in which trade liberalisation in Vietnam over the mid-1990s can be traced through to household welfare and poverty dynamics. It is based on ongoing work in the University of Sussex – see Niimi, Vasudeva-Dutta and Winters (2003a,b), from which more details may be found.[17]

Vietnam is an ideal candidate for such an application in the sense that it has surveys of the same 4,302 households in 1992-3 and 1997-8 – the Vietnam Living Standards Surveys (VLSS). Hence the research focuses on this five-year period. In another sense, however, Vietnam is less than ideal. Since the start of the *doi moi* reforms in the late 1980s the Vietnamese economy has been undergoing a more or less continuous transition. This has, at times, been halting and confused and is certainly not yet complete, but it seems to have had quite marked effects on incomes and poverty. Thus a major challenge for the research has been to identify the international trade reforms, separate them from other shocks and plot their transmission through to poor households. As noted above, the most significant link in this process quantitatively is likely to be the impact of openness on economic growth and hence on poverty. The practical problem, however, is that a five-year period is not long enough to distinguish between the various contributors to economic growth.[18] Moreover, most of the critics of

[17] The work described is part of the project 'The Impact of Trade Reforms and Trade Shocks on Household Poverty Dynamics' (ESCOR-R7621) funded by the UK Department for International Development, for the benefit of developing countries.

[18] The same limitation applies to analysing the effects of trade liberalisation on the volatility of incomes and risk-coping strategies. These are undoubtedly important for the poor, but having only two observations spanning five years preclude our commenting on them.

trade liberalisation focus on its static effects felt via prices, wages and transfers, e.g. the lost livelihoods. Hence for these two reasons this work focuses on the latter.

III.1. *Economic Reforms*

The process of 'economic renovation' or *doi moi* was set in motion in 1986 and gathered momentum in the early 1990s with the objective of transforming Vietnam from a centrally planned to a market economy. The institutional reforms during this period included the encouragement of the private sector and the establishment of the legal basis for contract, banking and financial sector reforms, taxation reforms, the establishment of economic courts, the consolidation of property rights, land reform, and the rationalisation of state-owned enterprises (SOEs). A further important facet of the renovation process was the dramatic change in external sector policy from inward-oriented import substitution to outward-orientation. Changes included:

- The removal of constraints on trade outside the CMEA bloc:[19] by 1993 all foreign transactions were in convertible currency,
- The rationalisation and unification of the exchange rate in 1989 and further liberalisation of foreign exchange controls,
- The relaxation of import and export controls and a move towards a tariff-based system of trade management,
- Export promotion and the establishment of export processing zones,
- The relaxation of controls on entry into foreign trading activity and the simplification and eventual elimination in 1998 of the licensing procedure,
- The initiation of an 'open door policy' to promote foreign investment and the creation of a legal framework to approve and regulate foreign direct investment (FDI), and
- Integration with the world economy via regional and multilateral trading agreements.

[19] The Council of Mutual Economic Assistance consisting of the former Soviet Union, Eastern European socialist countries and Cuba.

Customs tariffs were introduced in 1988 for the first time and classified according to the international Harmonised System (HS) from 1992. The maximum and average tariff rates (especially on consumer goods) have remained high to date, and although the average tariff rates do not seem out of line with those in other developing countries, most of the items imported are in the high tariff bracket (between 30 and 60%). In addition, there have been several retrogressive measures in the form of rising export taxes, temporary prohibitions on imports of consumer goods, and other barriers introduced as anti-smuggling measures. Overall, both the import tariff and export tax systems are still complex and suffer from frequent changes (CIEM, 2001), so that despite all the reforms, Vietnam's trade regime must be considered to remain quite restrictive and interventionist (International Monetary Fund, 1999).

The complexity of Vietnamese trade policy makes it very difficult to trace the effects of tariff and other policy changes on households and so we decided that we had to rely on outcomes – prices and quantities – rather than policies directly, in order to identify the impact of the trade liberalisation. In these we detect dramatic changes, and there must be at least a reasonable presumption that the external sector will have had significant effects on poverty and that outcomes have been heavily influenced by the many changes in policy noted above.

III.2. *Economic Outcomes*

Despite their incompleteness, the impact of the reforms on the Vietnamese economy has been tremendous. The economy grew at approximately 7-8% p.a. between 1990 and 2000 and at over 5% p.a. even following the Asian crisis in 1997. Firm domestic credit policies, tight monetary policies and interest rate reforms stabilised the hyperinflation of the 1980s. The exchange rate remained relatively stable after the rationalisation of the multiple exchange rate system and successive devaluations (CIE, 1998). Glewwe *et al.* (2000) show that, based on the World Bank poverty line, absolute poverty incidence declined during the 1990s from 58.1% to 37.4% between 1992-93 and 1997-98.

The share of international trade (exports plus imports) in GDP increased from about 52% to 71% between 1992 and 1998 (GSO statistics).[20] The external sector reforms stimulated strong import growth with

[20] There are discrepancies in trade data between various sources, but all tell the same story about the increase in openness.

imports continuing to be dominated by machinery and intermediate goods (amounting to approximately 70% of total imports). This reflects both the industrialisation of the Vietnamese economy and the structure of protection, with its bias against imports of consumer goods (IMF, 1998, 2000). Exports also grew strongly – apparently in line with comparative advantage. The contribution of agriculture, forestry and fisheries to total exports fell steadily, being offset by an increase in the shares of handicrafts and light industrial goods (IMF, 1998, 2000). By 2000, the combined exports of the textile and garments industry (one of the fastest growing export sectors) and the footwear industry were higher than those of the four chief agricultural exports – rice, coffee, rubber and marine products (CIEM, 2001). One of the most dramatic changes was in the opposite direction, however: pre-*doi moi* Vietnam was a net importer of rice, but by 1997 she was the world's second largest exporter of rice by volume (Minot, 1998).

Rice is hugely important in Vietnam, and figures significantly in the subsequent analysis. The de-collectivisation of agriculture and land reform in 1988 greatly increased the incentives to produce rice. Domestic prices were liberalised in 1989. Simultaneously, export quotas were removed and trading rights extended with the result that exports boomed and prices rose. In a related development real fertiliser prices (i.e. relative to the CPI) fell by 19% between 1993 and 1998. Throughout the 1990s nearly all fertiliser requirements were met by imports and these were regulated by import quotas with the objective of stabilising domestic prices and the concomitant effect of keeping average prices significantly above world prices (Nielsen, 2002). Thus the price changes noted must be seen as a significant and conscious trade liberalisation.

It is difficult to divide credit for the improvement in the rice economy between the domestic and the trade policy reforms. Arguably, both were necessary. The domestic reforms clearly impinged more directly on farmers than did the trade reforms, but in the absence of the latter, which allowed Vietnam to operate in world markets, it is inconceivable that prices and quantities could both have increased so much.

III.3. *Channels of Causation*

Winters (2000, 2002) suggests three static channels of causation between trade liberalisation and household poverty: the prices that poor people pay *and receive* for goods and services, labour market effects on wages and/or employment, and the effects of the resultant changes in government expen-

diture and other taxes on real disposable income including services received in kind. The last probably receives too much attention anyway – see for example, McCulloch, Winters and Cirera (2001) or Winters, McCulloch and McKay (2002) – and certainly does not appear to have been very significant in Vietnam. Hence our research considers the other two.

Given the deep and extensive reforms of Vietnam's trade regime, we would expect to observe significant changes in the prices of some tradable commodities. Table 1, which reports the proportionate changes in the real retail prices of the selected consumer goods and services (from GSO statistics) confirms this.[21]

TABLE 1: *Price Movements 1993-1998 (Real Prices in Dong)*

Consumer Goods/Services	***Change***	***Consumer Goods/Services***	***Change***
Mackerel	76.87	Papers	3.46
Vitamin C	40.40	Fresh carp	0.90
Permanent wave	35.49	Shelled nuts	0.37
Sea shrimps	33.31	Black beans	-0.69
Fish sauce	32.53	Green beans	-1.95
Paddy	26.15	Soya curd	-1.99
Spring rice	26.05	Glutamate	-3.24
Salt	21.55	Soya beans	-3.66
Beef topside	21.30	Pork	-4.03
Glutinous rice	20.68	Kerosene	-4.44
Haircut	16.50	White sugar	-6.29
Cotton fabrics	13.75	Electricity	-17.78
Supply water	13.65	Vitamin B1	-18.17
Chicken carcass	11.80	Beer	-22.45
Duck's eggs	10.76	Photograph	-25.23
Petrol	10.39	Woollens	-37.97
CPI (% Change)			**48.5**

Source: Calculations based on GSO statistics (provided by CIEM).
Nominal prices deflated by official CPI index.

[21] These figures need to be treated with some caution as most of the individual prices increase. The nominal prices were deflated by the CPI obtained from GSO, but the information on how the CPI was constructed is not available and needs further investigation.

It is clear that Vietnam's leading export products such as rice and marine products saw relatively higher price increases during this period than did other products. Rice is extremely important, being the most important single source of income for the majority of Vietnamese households and accounting for about 30% of household income in 1998. It is not possible to insist that these price increases were due solely to trade liberalisation, but there seems very likely to be a strong trade component. Although the price data are not available for coffee which was another booming export commodity in Vietnam over our sample, secondary sources – e.g. Minot (1998) – support the favourable effect of liberalisation-induced price changes on producers. However, more recently these households have been shown to be vulnerable to the considerable volatility of international coffee prices so some care must be taken not to interpret relatively short runs of data as implying permanent effects.[22]

In contrast to their benefits for producers, price increases in consumer goods, especially rice, are bound to have adverse effects on net consumers. According to our calculations based on the VLSS 92-93, rice accounted for 44% of total food expenditure on average and 53% for poor households. Rice alone comprises about 75% of the total calorific intake of the typical Vietnamese household (Minot and Goletti, 1998). Clearly rice prices will be a major determinant of poverty and deserve close attention. Our work provides some of this but we cannot provide an exhaustive study as we cannot adequately identify the component of the effect of rice price increases on poverty that depends on individual households' consumption patterns.[23]

The data on employment and wages are subject to huge uncertainity. The *doi moi* reforms had a substantial impact on the sectoral composition of output, with the industrial and services sectors growing far faster than agriculture during the 1990s. Despite the high output growth, however, total employment apparently grew by only about 2-3% in this entire period

[22] That coffee producers have lost their previous gains as world prices have fallen from their 1990s peak is not evidence that trade is harmful. With very low domestic consumption, the alternative for producers was not to produce coffee at all – i.e. to have foregone the gains that we find in our survey. Having said that, however, it is not clear that much official effort was devoted to warning potential producers that prices could go down as well as up.

[23] This is because of the way in which we measure poverty: following the World Bank and Vietnam's official statisticians, poverty is defined relative to the cost of a standard consumption basket – 2,100 calories per day per head plus minimal non-food expenditures.

(IMF, 1998, 2000) and was characterised by the absence of job creation in the industrial sector despite its being the fastest growing sector (MOLISA statistics provided by CIEM). On wages, Chandrasiri and de Silva (1996) use ILO data to argue that real wages fell following liberalisation, while the IMF (1998, 2000) suggests that real earnings (covering all cash income including payments in kind, bonus payments, and social security contributions) increased strongly. The wage data in the VLSS household surveys are of poor quality at the household level. However, wage data from the VLSS commune questionnaires suggest that between 1992-93 and 1997-98 real agricultural wages increased by about 38% and 36% for male and female labour respectively.[24] In addition table 1 shows that the real price of haircuts increased by 16.5% between 1993 and 1998. All of this can be taken as indicating increases in wages over this period.

To link trade reform and labour markets we undertook two exercises. First we have identified the commodities for which exports and imports changed most over 1993-98 and traced these back to their producing industries and occupations. Prima facie, if trade 'matters', these are sectors and occupations that we would expect to show up most strongly in explaining household experiences. The export sectors are clothing, footwear, sea-food and food-processing[25] and the import sectors textiles, machinery, leather, chemicals and metal industries. These sectors figure in the household analysis below.

Second, we conducted a factor-content of trade analysis to identify from the input-output structure the demands for three classes of labour created by the export growth and destroyed by the import growth over 1993-98. The traditional analysis in which $1 of imports displaces $1 of local output (and hence the factors of production that go into it) suggests that trade contributed very little to net labour demand over 1993-98, mainly because import growth was strong. However, the assumption of 1-for-1 displacement makes little sense for a poor developing economy such as Vietnam: rather imported capital and intermediate goods are employment creating in their purchasing sectors. When this is recognised, trade liberalisation looks much more benign. See Niimi *et al.* (2003b) for more detail.

[24] The commune questionnaires were conducted only in rural areas. These are the average figures for the wage for preparation, planting, caring for crops and harvesting.

[25] We do not include agriculture because (a) it offers relatively little wage-employment (as opposed to self-employment) and (b) most food is at least partly processed before it is exported.

III.4. *The Econometric Analysis of Household Poverty*

This section tests the extent to which the observable liberalisation-induced changes identified above contributed to the reduction of poverty. It estimates a multinomial logit model on household data, and asks whether the production activities and characteristics that would a priori dispose a household towards an escape from poverty actually do so. This is mainly of interest per se, but it also provides a means of testing the operational significance of the framework provided by Winters (2002).

Multinomial logit models analyse the probability of being in a particular state out of several unordered alternatives.[26] We examine the poverty transition between 1992-3 and 1997-98 in terms of multiple (unordered) choices – specifically (1) being poor in both periods (P→P), (2) being non-poor in the first period and becoming poor in the second period (NP→P), (3) being poor in the first period and becoming non-poor in the second period (P→NP), and (4) being non-poor in both periods (NP→NP).

The model requires us to define one category as a 'base' and then calculates the probabilities of an observation being in one of the other categories relative to being in the base. In the results below we report the results as relative risk ratios (RRR), which report the ratio of the probability of each outcome relative to the probability of the base category. Since all continuous variables have been standardised, the coefficients on these variables represent the impact of a one standard deviation change in the explanatory variable on the relative risk ratios of the household being in each outcome. Any coefficient less than one implies that the variable reduces the probability of the household being in the nominated category. The percentage change in the probability is given by the coefficient minus one, multiplied by one hundred. This latter rule applies to both dummy and continuous variables.

The VLSS contains two waves of data: 4,800 households in 150 communes surveyed over October 1992 to October 1993 and 6,000 households in 194 communes surveyed over December 1997 to December 1998. The samples are believed to be representative and, critically, a panel of 4,302 households are identifiably surveyed in both waves. The poverty line used in this work is the official poverty line, which is based on the ability to afford

[26] Niimi *et al.* (2003a) discuss the shortcomings of and alternatives to the multinomial logit and carry out various sensitivity tests to the results reported here.

a specific basket of goods designed to provide a given calorie intake, plus some non-food expenses – see World Bank (1999) or Glewwe *et al.* (2000).[27]

The modelling is related to that in Justino and Litchfield (2002) and Glewwe *et al.* (2000), but differs from these in that we focus closely on the trade effects and explore both urban and rural populations. Starting from a 'standard' demographic view of household poverty dynamics, we add a number of additional variables to reflect the trade links: rice production, coffee production, land and fertiliser use, and the ratio of household members working in the leading export industries (seafood, food processing, garments, and shoes) to the number of adults in the household.[28]

With one exception all the variables refer to households' characteristics or activities in the initial period. This is partly to avoid problems of simultaneity whereby poverty experience might determine the behaviour modelled on the RHS of the equation rather than vice versa. But it also reflects the desire to test the conceptual framework as a predictive tool. That is, to see how well the framework would predict the effects of trade reform if it were applied ex ante using only the information available in the initial period.

Appendix I reports the 'basic' equation (model 1) with no trade variables, which explains poverty dynamics as a function of region, ethnicity, demography, human capital (education), occupation, health, infrastructure and seasonality.[29] Though precise comparisons Glewwe *et al.* (2000) and Justino and Litchfield (2002) are not feasible, they seem to tell a pretty consistent story. Location, education and occupation of the household head, and infrastructure variables were among the major factors that increased the probability of escaping poverty relative to being poor in both years, while belonging to a minority ethnic group and illness of the household head increased the probability of falling into poverty relative to being non-poor in both years.

The effects of the various trade variables are largely orthogonal to the 'basic' effects and so, although Appendix I reports the equation in full, in

[27] Its value is 1.160 million dong in 1992-93 and 1.790 million dong in 1997-98 (World Bank, 2001).

[28] We also measure various non-trade effects in slightly different ways from Glewwe *et al.*

[29] The results are reported as relative risk ratios (RRR), which report how a variable affects the chances of an observation falling in each outcome. Any coefficient less than one implies that the variable reduces the probability of the household being in the nominated category. The percentage change in the probability is given by the coefficient minus one, multiplied by one hundred.

Table 2 of the text we report only the coefficients on the trade variables. These come from a 'tested down' version of the model which incorporates a certain amount of search for the best model (data-generating function). Collectively the trade variables are strongly statistically significant and loosely speaking, allowing for trade variables, just in terms of initial values, improve one's ability to explain poverty dynamics by 10%.

Table 2 starts with our basic 'trade-inclusive' model (column A). It includes among the regressors the household's initial production of rice and coffee and the proportion of workers initially holding jobs in export sectors. All have positive effects, the first two are strongly significant, both in the system as a whole (i.e. for the three equations the system together) and in explaining just the escape from poverty, whereas the last is significant for the system as a whole and only at 10% for escape from poverty alone. For example, *ceteris paribus*, a one standard deviation increase in a household's initial production of coffee more than doubles its chances of escaping from poverty in 1998, while a one standard deviation increase in rice output increases it by over 50%. Adding these three variables increases the pseudo-R^2 of the system from 0.23 to 0.26.

Column B reports our preferred 'trade-inclusive' equation. One important refinement is the regional dimension to the rice result. The production effect is weaker in the Mekong Delta than elsewhere.[30] As well as being the major producing region for rice exports, the Mekong is also characterised by larger farms and a much greater use of hired labour (Minot, 1998). Thus, as production increases less accrues to the householder as a producer and more to the labour he hires; correspondingly, household income owes more to wages deriving from others' rice production than it does elsewhere in Vietnam. A similar attenuation is also evident in the other major rice area, the Red River Delta. Once these two regional variants are permitted the rice production effect elsewhere in the country increases somewhat.

[30] The rice production effect in the Mekong in column (B), Table 2 is an increase of 5% in the chance of escaping = 100*(1.7*0.60-1).

TABLE 2: *Relative Risk Ratios from the 'Trade-Related' Multinomial Logit Model*

Model I (columns A-B): RRR for escaping from poverty – i.e. for (P→NP) relative to base (P→P)
Model II (column C): RRR for falling into poverty – i.e. for (NP→P) relative to base (NP→NP)

	Model I		Model II
	A	**B**	**C**
Agricultural variables			
Quantity of rice production	***1.56	***1.75	*0.51
In Mekong River Delta		**0.60	1.51
In Red River Delta		**0.85	1.15
Quantity of coffee production	***3.00	***2.32	1.00
Qty. of fertiliser – rice		***1.46	1.13
Qty. of fertiliser – non-rice		*1.70	*0.79
Trade variables			
Ratio of household members working in export	*1.11	***1.25	*1.19
Change in the ratio (export)		**1.17	1.06
Pseudo R2	0.26	0.27	0.27

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level in the single equation reported.
(1) The export sector includes seafood, food processing, garment and shoes (rubber and plastic products).

A second refinement adds variables for the initial use of fertiliser. As fertiliser prices fell heavy users could sustain material increases in real consumption. We distinguish between rice and non-rice fertiliser effects, because the latter may reflect greater opportunities for exploiting the fall in price as farmers can switch between crops rather than just increase use for a single crop. Large initial users of fertilizer for non-rice crops may grow crops or farm under circumstances which respond to fertiliser usage and

thus have greater opportunities for substitution than those who use little fertiliser to start with. The table shows strong positive effects from fertiliser use although non-rice use is significant only at 10%.

The third major dimension of the trade liberalisation operates via the employment market. There are at least three ways of making a link between initial employment in an export sector and the escape from poverty. Existing workers could get real wage increases, existing workers may be able to work longer hours, or it may be that initial employment indicates a location close to exporting firms and hence better chances of the household obtaining more jobs as the firms expand.

In order to explore these possibilities more closely, we break our rule of using only initial values as explanatory variables, and add the change in the proportion of adults with employment in export sectors. This captures the third hypothesis above and also is consistent with a reserve-army of labour view of the economy whereby an export boom generates more jobs but at constant real wages. Given the stock of workers in agriculture and the state-owned enterprises the reserve army model is plausible and, given the relatively low skills required for most manufacturing export jobs, there is little reason to expect that new workers will be less productive than incumbents over the 5 years between our surveys.

Including the change in employment in column (A) has negligible effects on all the other coefficients and their significance but quite strong effects on that on initial employment. It increases from 1.11* to 1.19**, while the change in employment gets a coefficient of 1.14** (regression not reported). When the change in export employment is added to the model with the agricultural refinements the coefficients on both it and the initial level become strong and positive. Incumbency does have advantages in escaping poverty (via wages or hours presumably, neither of which we can test because the data are so noisy), but so too does a household's ability to supply new workers. Methodologically the lesson here is that for predicting the poverty effects of trade liberalisation, agricultural shocks may be well captured by initial activity in the affected sector because mobility is relatively low in these sectors.[31] For manufacturing, however, although initial employment captures some of the likely effects, some will be less predictable because mobility into manufacturing jobs is high.[32]

[31] By the same token negative shocks will hit hard in agriculture, as, for example, the decline in coffee prices since 1997 is reported to have done in Vietnam's Central Highlands.

[32] We also experimented by looking at employment and change in employment effects in import sectors and in manufacturing in general. Neither added much.

The sample for descent into poverty is small and so the results in column (C) of Table 2 are poorly defined. In an economy growing at an 8% p.a. descent into poverty is likely to be mainly an idiosyncratic event. Nonetheless, the results are broadly consistent with the analysis of escape from poverty even if they are not very significant statistically. Overall, we would not make much of this set of results, but they clearly lend some further support to our model of the poverty consequences of trade liberalisation.

While the trade effects appear to be estimated sufficiently precisely to reject the hypothesis that they have arisen by chance, we also should consider their contribution to explaining poverty dynamics, by asking how much better we can explain the observed outcome if we recognise the trade component. The increase in the pseudo-R^2 from 0.234 to 0.266 suggests that trade adds a further 14% to the explained variation in poverty experience but that much variation remains unexplained. The proportions of correct predictions from the model tell a similar story. The basic model classifies 59.90% of households correctly, over-predicting no-change outcomes (P→P and NP→NP) and strongly under-predicting the changes. Adding the trade variables improves the overall success rate by about 1.5 percentage points or 2.5% and materially improves the predictions for escapees from poverty.

The results so far offer convincing evidence that international trade reform has affected individual household poverty dynamics in Vietnam, and that by taking it into account we are better able to predict which households prosper and which do not. This lends considerable weight to the analytical framework proposed and to the view that 'trade matters'. It does not, however, tell us directly whether trade reform reduced poverty. For that, we need to create a counterfactual – '1998 without trade reform' – and it is here that the uncertain division of responsibility between trade policy, other policies and exogenous shocks really takes its toll.

As noted above we use initial household characteristics as variables and then essentially infer the change in their value between 1993 and 1998 from the coefficients. Hence, we can estimate the effects of trade reform on overall poverty by setting the 'trade-related' coefficients to zero (the corresponding RRR to unity) and recalculating the predicted changes in poverty.[33] For

[33] Because we standardised the variables in the regression equation, we also need to subtract $\beta\bar{x}/s$ from the constant to ensure that the equations go through the same mean point as before, where $\bar{x}$ is the mean value of the trade variable, s its standard deviation and β the trade coefficient set to zero.

some effects, however, the change in the value of a characteristic is due to things other than trade, so the appropriate reduction for this exercise may be less than 100%. For the sake of illustration we also consider reductions of one-half in these coefficients.[34]

If none of the trade effects had applied, about 250 fewer households (out of 4,302) would have escaped from poverty and 668 more would have been in poverty in 1998. If trade effects are set to half the estimated coefficients, the contribution of trade reform is still large – nearly 100 additional household escaping from poverty (about 10% of those that did) and nearly 300 fewer households in poverty (about 10% again). There are reservations about exactly how well we are capturing these effects, see Niimi *et al.* (2003), but overall these are quantitatively important effects.

IV. Conclusion

This paper marshalls two sets of evidence that trade liberalisation has significant effects on households' poverty status. First, a careful interpretation of the literature shows that trade liberalisation does, in general, contribute towards economic growth and that, in general, this contributes towards poverty reduction. It does not argue that trade liberalisation is sufficient for growth or even that it is the most important explanation of differences in growth rates across countries. I do not apologise for this however. The stakes are so high when we deal with the growth of whole economies that getting even minor policies right offers huge returns. More importantly, I would argue that trade policy is one of the few determinants of economic growth that can be relatively easily and cheaply manipulated, and that for this reason alone it commands our attention.

Part III of the paper shows that Vietnam's trade liberalisation of the mid-1990s shows up in household income data in exactly the sort of places one would expect. Again, trade variables are not the major determinants of changes in poverty status but they play a material role. In the course of inferring this result, the research indirectly validates the approach to trade liberalisation and poverty suggested by Winters (2000, 2002). It is comfort-

[34] This exercise is essentially a simulation. We are comparing predictions under two sets of conditions, not actual and predicted values. Thus the results are predicated on the relevance of the estimated model.

ing to feel that we have effective tools for thinking about the question, and it is worth stressing that the framework makes very clear that the direct static effects of trade liberalisation on poverty can be negative under certain circumstances. The purpose of the framework is not to promulgate universal conclusions, but precisely to aid the identification of potential poverty problems on a case-by-case basis.

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APPENDIX I. Regression Results of Multinomial Logit Models (Relative Risk Ratios)

MODEL 1: Without trade variables
MODEL 2: With trade variables

	NP → P		P → NP (Escaping Poverty)		NP → NP	
	Model 1	**Model 2**	**Model 1**	**Model 2**	**Model 1**	**Model 2**
Geographic characteristics						
Urban	0.911	0.998	**1.716	***1.979	***2.442	***3.231
Northern Uplands	1.412	1.726	1.188	1.257	1.155	1.325
Red River Delta	1.082	1.814	**1.445	**1.667	1.261	***2.489
(North Central)						
Central Cost	1.523	1.650	0.986	0.970	***2.658	***2.706
Central Highlands	1.282	0.830	**2.256	1.019	***6.600	**3.177
South East	***3.965	***3.879	***5.423	***4.736	***19.678	***18.482
Mekong River Delta	***5.027	***4.580	***2.126	***2.175	***9.605	***8.213
Ethnicity (Kinh)						
Chinese	1.806	1.905	0.765	0.715	*3.952	**4.883
Other ethnicity	0.864	1.006	***0.386	***0.430	***0.359	***0.453
Demographic characteristics						
Female head of household	0.994	1.058	0.984	1.016	1.085	1.197
Age of household head	0.951	0.959	***1.305	***1.316	***1.456	***1.464
No. of males 60+	0.968	0.925	0.918	*0.895	*0.879	***0.829
No. of females 55+	1.122	1.085	1.092	1.074	*1.118	1.076
No. of males 19-59	0.997	0.933	0.993	0.942	0.977	*0.892

No. of females 19-54	1.138	1.070	*1.115	1.073	**1.152	1.073
No. of children 15-18	0.969	0.889	1.029	0.969	**0.893	***0.782
No. of children 6-14	***0.460	***0.411	**0.887	***0.807	***0.631	***0.538
No. of children 3-5	***0.604	***0.560	***0.760	***0.725	***0.520	***0.475
No. of infants 0-2	***0.581	***0.558	***0.784	***0.765	***0.548	***0.515
Education variables						
Head						
(No education)						
Primary school	**1.688	**1.706	***1.835	***1.833	***2.126	***2.066
Lower secondary school	**1.779	**1.836	***2.844	***2.834	***3.455	***3.548
Upper secondary school	1.584	1.764	***3.227	***3.343	***6.734	***7.564
Tech/voc school	1.275	1.383	***1.989	***2.023	***4.696	***5.132
University	***0.000	***0.000	**10.061	***12.707	***46.400	***69.795
Spouse						
(No spouse)						
No education	1.097	1.038	0.938	0.887	1.128	1.083
Primary school	1.061	1.043	1.073	1.087	**1.637	**1.699
Lower secondary school	1.222	1.209	1.061	1.052	1.273	1.294
Upper secondary school	**2.966	**3.096	1.454	1.426	***2.399	***2.447
Tech/voc school	*2.913	**3.230	***2.735	***3.021	***6.234	***7.334
University	***0.000	***0.000	2.409	2.251	***6.413	***6.214
Occupations (Head)						
White collar	***5.733	***6.111	***3.291	***3.528	***7.465	***8.349
Sales/Services	1.657	*2.168	1.498	**1.846	***3.252	***5.065
(Agriculture)						
Production	1.185	1.234	0.966	1.167	1.249	**1.608
Not working	0.678	0.745	***0.604	**0.634	0.783	0.939
Illness shock						
Household head						
ill for more than						
a week in past 4 months	**1.828	**1.995	1.221	1.249	1.030	1.090
Infrastructure						
Access to electricity	1.422	1.381	***1.541	***1.446	***3.481	***3.364
Road	0.620	0.733	***1.666	**1.605	**0.680	0.768
Food shop	1.409	1.459	***1.611	***1.766	***2.190	***2.317
Daily market	***2.015	***2.205	1.093	1.208	***1.512	***1.613
Primary school	0.456	0.441	0.782	0.767	*0.496	**0.483
Lower secondary school	1.110	1.030	0.872	0.792	**1.382	1.164
Upper secondary school	1.091	1.175	1.042	1.098	**1.565	***1.736
Post office	***0.566	**0.561	***0.622	***0.619	***0.378	***0.363
Clinic	1.634	1.531	***1.923	***1.756	**1.701	***1.841

Agricultural variables						
Quantity of rice production		1.769		***1.753		***3.445
In Mekong River Delta		0.752		**0.601		***0.505
In Red River Delta		**0.710		**0.845		***0.612
Quantity of coffee production		***2.358		***2.315		***2.359
Quantity of fertiliser for rice		***1.679		***1.460		***1.491
Quantity of fertiliser for non-rice		1.557		*1.696		**1.969
Trade variables						
Ratio of household members working in export [1] to no. of adults		***1.649		***1.254		***1.517
Change in the ratio [2]		*1.186		**1.173		**1.169
Duration between two surveys	0.932	0.920	***1.500	***1.432	***1.375	***1.394
Seasonality						
(Interviewed 1st quarter)						
Interviewed 2nd quarter	0.626	0.629	1.054	1.065	0.928	0.960
Interviewed 3rd quarter	0.941	1.156	**1.341	***1.594	***1.821	***2.190
Interviewed 4th quarter	0.820	0.788	***1.845	***1.668	***1.965	***1.994
No. of observations	4302	4302	4302	4302	4302	4302
Pseudo R^2	0.234	0.266	0.234	0.266	0.234	0.266

Source: Calculations based on the VLSS 92-93 and 97-98.

Note: *** significant at 1% level; ** significant at 5% level; * significant at 10% level.

(1) The export sector includes seafood, food processing, garment, and shoes (+rubber and plastic products).

(2) It should be noted that the categories for occupation slightly differ between the VLSS 92-93 and the VLSS 97-98.