Dollar and Kraay on "Trade, Growth, and Poverty": A Critique[1]

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In their paper, "Trade, Growth, and Poverty,"[4] Dollar and Kraay claim to present evidence that trade liberalisation leads to faster growth in average incomes, and that this growth in average incomes in turn increases the incomes of the poor "proportionately", thus leading to decreased absolute poverty. The paper suggests that one of the surest ways for less developed countries to alleviate poverty is to pursue policies of trade liberalisation. We argue, however, that the arguments and evidence presented by Dollar and Kraay are unconvincing. The record of the effects of trade on growth and poverty appears to be considerably more mixed than claimed by Dollar and Kraay.

Dollar and Kraay attempt to show on the basis of empirical evidence that: (1) Post-1980 'globalisers' - or developing countries that undertook greater shifts in favor of a more open trade regime than others did in the period from the early 1980's to the late 1990's - have experienced greater increases in growth of per capita incomes (2) growth of the share of trade in gross domestic product (henceforth, trade volume) is positively associated with increases in the growth rate of average income; and (3) there is no *systematic* tendency for the share of national income captured by the bottom quintile of

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[4] See http://www.wider.unu.edu/conference/conference-2001-1/dollar%20and%20kraay.pdf . We comment on the version dated March 2001. Dollar and Kraay's paper was subsequently published in the *Economic*

the income distribution to change as per capita national income grows. The first two claims are each intended to support the view that "trade liberalisation leads to higher growth of average incomes" while the third claim is intended to support the view that "growth of average incomes increases the incomes of the poor proportionately." We critically examine below the claims of Dollar and Kraay.

1. The Identification and Relative Growth Performance of 'Globalisers'

The authors' first exercise is a descriptive comparison of the growth comparison of 'globalisers' and 'non-globalisers'. Although the authors do not intend this to substitute for an econometric analysis that controls for confounding factors, they consider it informative enough to present. A problem that arises immediately concerns how to identify a group of 'globalisers'. As Dollar and Kraay themselves note, trade liberalisation often occurs at the same time as many other reforms (see also Rodriguez and Rodrik (2000)). Thus, identification problems plague inferences that differences in growth rates are due to differences in trade policy. Differences in growth rates between countries identified according to their trade policies may be due to other policy changes that also differentiate these groups of countries.

How should globalizing countries, or "countries that have significantly opened up to foreign trade" be distinguished from non-globalizing ones, or "countries that have remained more closed"[5]? An obvious possibility is to differentiate countries by measures that indicate the extent of the obstacles to trade that they erect, such as tariff and non-tariff barriers, since the concepts of being closed or open are ultimately related to the presence or absence of such barriers. However, Dollar and Kraay assert that such direct measures of trade policies (e.g. the average level of tariff rates) capture poorly the extent

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Journal in 2004. We provide additional page references for the published version (Dollar and Kraay (2004)) where possible.

[5] See Dollar and Kraay (2001), page 7 and Dollar and Kraay (2004), pp. F30-F31, for these descriptions of what it means for countries to be 'globalisers' or 'non-globalisers'.

of actual openness[6]. Instead, they use changes in trade volumes as a percentage of GDP as a "proxy" for the extent of trade liberalisation.

Is this a reasonable strategy for distinguishing globalisers and non-globalisers? Clearly, many factors *other* than policies affect the volume of trade (such as geography, country size, technological and organizational capabilities, domestic institutions, and the attitudes of potential trading partners). Dollar and Kraay recognize that this dependence of trade volumes on multiple factors makes it difficult to draw inferences that differences in the level of trade volumes are due to trade policies alone. We argue below that the dependence of trade volumes on multiple factors *also* makes it difficult to make credible inferences that changes in trade volumes are due to changes in trade policies, as Dollar and Kraay wish to do.

A related issue is that there are many reasons that *causal* inferences about the relation between trade volumes and growth may be formed incorrectly when applying the authors' framework. First, it is possible that higher growth rates cause a country to have higher volumes of trade relative to GDP. This is both because growth in incomes typically leads to growth in import demand, and because income growth may lead to faster export growth. There are many reasons that more rapid export growth may be triggered by income growth. For a variety of reasons, firms may achieve more competitive costs on international markets as national income increases. Higher incomes may strengthen public finances or otherwise bring about investment in public infrastructure which reduces the costs of producing goods and brining them to market, or may make possible the overcoming of the asset, liquidity and credit constraints that had previously limited firms from investing adequately in their export capacity.[7]

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[6] In support of this view, Dollar and Kraay cite reasons such as that there may be unobserved 'non-tariff' barriers to trade, that average tariff rates may not accurately capture the obstructions created by tariffs, that the level of enforcement of tariffs may vary across countries, and that trade-weighted measures of tariffs give little or no weight to commodities for which trade is low or non-existent precisely because tariffs are high.

[7] This is only one example. Domestic markets for many products may also expand, allowing firms to become more productive due to the presence of economies of scale. Development may also increase the competitiveness of domestic market environments, forcing firms to reduce 'X-inefficiency' and to approach the "frontier" of potential productivity, or bring about advances in firm-level technology.

Second, factors unrelated to trade policy that cause countries to have higher growth rates may *also* cause countries to have higher trade volumes relative to GDP, creating a correlation between these two factors despite the absence of any direct causal connection. For instance, investment in domestic infrastructure (e.g. in transportation and marketing) may facilitate domestic market development (and therefore growth) while simultaneously reducing the costs of bringing domestically produced goods to international markets and international goods to domestic markets, thereby increasing the share of exports and imports in GDP. Higher growth may be the cause of higher trade volumes (rather than the other way), and there may exist unidentified third factors that are causes of both increased growth and trade volumes.[8]

Recognizing some of the possible shortcomings of using trade volumes as the primary selection criterion for globalisers, Dollar and Kraay identify 'globalisers' according to two other criteria: countries that had the greatest reductions in average tariffs and one countries that were *both* among those that saw the greatest increases in trade volumes and among those that saw the greatest reductions in average tariffs. Dollar and Kraay claim that for all three groups of 'globalisers' (i.e. those which had the largest increase in trade volumes, those which had the largest reductions in average tariffs, and those which were on both of these lists), globalisers saw greater increases in growth rates than non-globalisers. These claims are superficially plausible, but as we discuss below, do not withstand scrutiny.

Conflicting Results:

[8] While Dollar and Kraay do recognize the problems with the use of trade volumes as a proxy for trade policies and *attempt* (as we discuss below) to deal with some of these problems in the context of their cross country growth regressions, they make no attempt to correct for these problems in the current context (the comparison of the growth performance of groups of countries classified as 'globalisers' and 'non-globalisers'). It is interesting to note that the use of changes in trade volumes as a proxy for changes in trade policy leads to a number of the problems we identify. These problems could in many instances have been avoided if changes in tariffs had been used instead, although if this had been done the authors' conclusions would also have been rather different.

Because very little tariff data was available before 1985, Dollar and Kraay use data on tariff reductions between1985-89 and 1995-97. The data on changes in trade volumes that they use is based on the interval from 1975-79 to 1995-97. Because the construction of the group of globalisers using reductions in average tariffs is based only on reductions in average tariffs from the 1985-89 period to the 1995-97 period, the comparison of the performance of this group of 'globalisers' with that of 'non-globalisers' has no straightforward interpretation when undertaken for the period before 1985-89.[9] It is true that each group of 'globalisers' saw greater increases in growth from the 1970s period to the 1990s than did 'non-globalisers'. However, it is *not* the case that all three groups of 'globalisers' saw greater increases in growth than non-globalisers during a reasonably *meaningful* period for such comparisons, which in the case of globalisers selected on the basis of reductions in tariffs must at least roughly correspond to the period from 1985-89 to 1995-97. Dollar and Kraay's own Table 3 (reproduced in part in our Table 1) shows that for the group of globalisers and non-globalisers constructed on the basis of reductions in average tariffs from 1985-89 to 1995-97, non-globalisers saw increases in growth rates of 1.7% for the weighted average (going from –0.6% in the 1980s to 1.1% in the 1990s) and 1.3% for the unweighted average (going from –0.4% in the 1980s to 0.9% in the 1990s) as against increases in growth rates for the globalisers of 1.3% for the weighted average (going from 3.6% in the 1980s to 4.9% in the 1990s) and 1.1% for the un-weighted average (going from 1.0% in the 1980s to 2.1% in the 1990s). Thus, for a period in which it is reasonably *meaningful* to compare the performance of globalisers and non-globalisers selected on the basis of reductions in average tariffs (i.e. the 1980s to the 1990s), 'non-globalisers' actually *outperformed* 'globalisers' in terms of increases in the growth rate of GDP!

Dollar and Kraay state that "Given the problems of measuring trade liberalisation that we have discussed, there cannot be a definitive list of recent liberalisers: any one of our three

[9] In order meaningfully to compare the performance of globalisers versus non-globalisers from 1975-79 and 1995-97, one would need to select globalisers on the basis of those that had reduced tariffs the most from 1975-79 and 1995-97, but as Dollar and Kraay point out it is impossible to construct such a group, as they only have tariff data from the 1985-89 period to the 1995-97 period.

groups of countries constitutes a reasonable candidate set of 'globalisers.'"[10] If it is believed, as Dollar and Kraay appear to, that increases in trade volumes relative to GDP, reductions in tariffs (and the combination of both) are all plausible selection criteria for 'globalisers' (or countries that have pursued rapid trade liberalisation) then applying these criteria over meaningful comparison periods must lead to the conclusion that the relative growth performance of globalisers and non-globalisers presents a *mixed* record. Globalisers identified on the basis of changes in trade volumes relative to GDP from 1975-79 to 1995-97 saw greater increases in growth over this period than non-globalisers, while globalisers identified on the basis of reductions in average tariffs from 1985-89 to 1995-97 actually saw smaller increases in growth over this period than non-globalisers.[11]

Tariffs vs. Trade Volumes:

As we have seen, the use of changes in tariffs as the criterion for the selection of globalisers leads to the inference that liberalisation is linked to *lower* growth over a meaningful period of comparison. Rodrik (2000) argues that while average tariffs may not accurately capture the degree of protection of relatively more important commodities or the extent of non-tariff barriers, they are nevertheless an important means of capturing the degree of overall openness or restrictiveness of trade policy regimes. This is because tariffs tend to be highly correlated across a wide range ofcommodities and because countries tend to employ similar levels of tariff and non-tariff barriers to trade. Rodrik presents a table of countries with the highest and lowest average tariffs, and argues that none of the countries in these groups would be badly misclassified as possessing more restrictive or open trade regimes, respectively. Tariff data is an important source of information on trade policy openness. However, the selection of globalisers on the basis

[10] Dollar and Kraay (2001), 8, and Dollar and Kraay (2004), p. F31.

[11] There is some evidence that even the result that globalisers identified on the basis of trade volumes had greater increases in growth rates is somewhat dependent upon the period examined. As Rodrik (2000) has noted, using changes in trade volumes from the 1985-89 period to the 1995-97 period to select globalisers (as opposed to the 1975-79 to 1995-97 comparison employed by Dollar and Kraay) leads to the selection of a very different group of 'globalisers,' and one whose growth rates are significantly lower than that obtained by Dollar and Kraay. Moreover, the group obtained by Rodrik using the same data and using the same initial years (of 1985-89) for both tariffs and trade volume shows higher growth rates *before* the 1980's and 1990's than after, which would suggest, if anything, that globalisation had been detrimental in the later period.

of tariff data and the use of a meaningful time period for comparison between globalisers and non-globalisers leads to results contrary to those claimed by Dollar and Kraay.

Openness - Levels vs. Changes:

Dollar and Kraay refer to the countries with the largest reductions in tariffs or increases in trade volumes in the period that they study as globalisers. Strikingly, however, the countries with the largest reductions in tariffs are those that retain the highest tariffs, and the countries with the largest increase in trade volumes are those with the lowest trade volumes[12]. In what sense are Dollar and Kraay's 'globalisers' really globalisers then? As we mentioned above, 'globalisers' selected on the basis of reductions in average tariffs from 1985-89 to 1995-97 had *lower* increases in growth rates over this period than did non-globalisers. It is true that 'globalisers' selected on this basis had higher *levels* of growth than 'non-globalisers' in both the 1980s and the 1990s. However,'globalisers' selected on the basis of *reductions* in average tariffs from the 1985-89 period to the 1995-97 period actually had *higher levels* of average tariffs than 'non-globalisers' in both the 1980s and 1990s. The countries with higher levels of average tariffs in the 1980s undertook greater cuts in tariffs from 1985-89 to 1995-97, but still had higher levels of average tariffs after the cuts (in the 1990s). The *greater cuts* in average tariffs were associated with *lower increases* in growth, while the *higher levels* of average tariffs in both the 1980s and 1990s were associated with *higher levels* of growth in both decades. Dollar and Kraay's own data thus seems to suggest, if anything, that when it comes to tariffs, countries with the least open trade regimes perform the best in terms of the growth rate of average income, and that countries that open their trade regimes the least perform the best in terms of increases in the growth rate of average income!

As evident in Table 1, the only group of 'globalisers' selected by the authors that outperform 'non-globalisers' over a meaningful period of comparison are those selected on the basis of having the greatest changes in trade volumes. However, the countries with the greatest change in trade volumes happen to be those with the lowest initial and

[12] See Figures 1 and 2 and Table 3 (reproduced in part in our Table 1) in Dollar and Kraay (2001, 2004).

final trade volumes. It is rather surprising in this context to refer to these countries as 'globalisers'. It is possible that countries with higher initial levels of trade volumes had initially rather open trade regimes and did not further liberalise their trade policies over the period in question, while countries with lower initial trade volumes were initially more closed and began to liberalise their trade policies during this period. If this is the case, while it might be true that the latter group had "significantly opened up to foreign trade" over the period, it would be misleading to characterize the former group as those "that have remained more closed", as Dollar and Kraay do. If the purpose of the selection and evaluation of the growth performance of 'globalisers' and 'non-globalisers' is to gain insight into the efficacy of trade liberalisation, it would be important to look not only at how much a country liberalised its trade policy over a given period, but at how liberalised that country's trade policy was at the beginning and the end of the period. Dollar and Kraay's results suggest that countries that had the greater increases in trade volumes saw the greater increases in growth, but that countries with greater levels of trade volumes saw lower levels of growth. This would seem to suggest that the effects of trade liberalisation on growth are mixed.[13] In Dollar and Kraay's sample, 'globalisers' selected on the basis of changes in trade volumes relative to GDP are found to have higher increases in growth. However, it is also true that the countries with more open economies (in level terms) had lower increases in growth![14]

[13] If anything this pattern might suggest an 'inverse-U-shaped' relation between openness and growth. In this case there might be an 'optimal' level of openness. In particular, a country possessing a trade regime more closed than this 'optimal' level would increase growth by liberalising, but a country possessing a trade regime more open than this 'optimal' level it would see lower levels of growth.

[14] It is entirely possible (as indeed Dollar and Kraay argue) that levels of trade volumes may be more influenced by variables not related to trade policy (such as geography and institutional factors) than changes in trade policy. We concede that the inference that the level of a country's trade volume is due to its trade policy is *more* problematic than the inference that the *change* in the country's trade volumes is due to change in its trade policy. However, it is nevertheless the case that trade policies *are* among the determinants of the level of trade volumes and (as we argue elsewhere) that there are non-trade policy determinants of changes in trade volumes. For both of these reasons, Dollar and Kraay's inferences are misplaced. In particular, we wish only to point out the anomaly that countries with greater increases in trade volumes had lower initial and final levels of trade volumes, while countries with smaller increases in trade volumes had higher initial and final levels of trade volumes, and to raise the *possibility* that this could be due to the fact that the countries in the former group began and ended the period with more closed trade policies while the countries in the latter group began and ended the period with more open trade policies. In this case, it would not be correct to infer that more open trade policy increases growth, as it may be that the more open trade policy of countries with already high trade volumes that is the *cause* of their lower growth .

2. Cross-Country Relationships Between Changes in Trade Volumes and Average Incomes

The authors' second exercise is a cross-country regression analysis of the effects of trade liberalisation on growth, using changes in trade volumes as a proxy for changes in trade policy. The authors begin by reviewing many of the problems with the existing literature on this subject. They revisit the difficulties involved in measuring trade policy either directly through tariffs or indirectly through trade volumes. They also note the issue (raised prominently in Rodriguez and Rodrik (2000) and Rodrik (1997)) that causal inferences based on statistical associations found in such regressions are plagued by the possible presence of omitted variables. The 'true' causes of higher growth may be empirically correlated with changes in trade policy (or more specifically with changes in trade volumes) for entirely contingent reasons. For example, macroeconomic stabilization or institutional changes (such as clearer definition of property rights) often take place alongside trade liberalisation. If they are omitted from the analysis, then their effect may be misattributed to trade policy.

The authors assert that they have taken measures to avoid this problem. In particular, they claim that their focus on the relationship between *changes* in trade volumes and *changes* in growth rates allows them to control for the effect of unchanging factors, among which they identify geography and institutions, on the level of trade volumes. Unfortunately, the approach of Dollar and Kraay is still prone to the problem. One (already mentioned) reason for this is that the effect of omitted country-specific factors that *do* change over time and that influence growth and trade (such as institutions and infrastructure) will be misattributed to trade by this procedure. The authors claim that their focus on *changes* in trade volumes controls for the effect of omitted variables that lead to both growth and trade policy (or trade volumes) and that do not change over time. By their own admission, therefore, the effect of such variables that *do* change over time may not be adequately controlled for and may be mis-attributed to trade. Dollar and

Kraay suggest that institutions probably do not change much over time, but since their sample spans decades, there is no reason to assume this.[15] Similarly, (as we mentioned above in our discussion of Dollar and Kraay's use of changes in trade volumes as a selection criterion for 'globalisers') there are numerous reasons to believe that higher growth may cause higher trade volumes (rather than the other way around), or that there may exist overlooked third factors unrelated to trade policy (such as improvements to domestic infrastructure and to the productivity of firms) that are simultaneously the causes both of increased growth and of increased trade volumes. A second reason why Dollar and Kraay may misattribute to trade the effect of other factors is that unchanging non-trade-policy factors (such as geography or institutions) may have *different* effects on trade volumes at *different* points in time, either because of structural changes in the national or world economy or because of omitted 'interaction effects' in which the effect of unchanging factors depends on the effects of changing ones. Changes in the global economic system may have made certain unchanging features of countries (such as their geography) more or less relevant over time to explaining the impact of *other* causal factors (including trade policy) on growth [For instance, lower communications and transportation costs might make geography a decreasingly significant determinant of trade volumes]. These effects will not be adequately accounted for simply by including time as an explanatory variable in the regression analysis, as the authors do. There exist additional reasons to question the authors' econometric methodology and results, concerning, for instance, the validity of their other attempts to control for the presence of omitted variables[16] and for reversed causation, and concerning the robustness of their results to alternative specifications and choices of data[17].

3. The Relationship between Growth in Average Overall Incomes and the Average Income of the Bottom Quintile

[15] In particular, Rodrik (2000) lists Chile, Korea, and China as counter examples.
[16] We are not, for instance, convinced that 'contract-intensive money' is a suitable proxy for institutional quality.
[17] For instance, it is reasonable to ask whether the same results would be identified if there had been a focus on developing countries alone.

To support their third claim, Dollar and Kraay make reference to their previous paper, Dollar and Kraay (2000), which presents an econometric argument that there is no *systematic* tendency for the share of income possessed by the bottom quintile of the income distribution in countries to change as countries grow. However, this is very different from the claim that in any *given* country an increase in growth rates…leads to *proportionate* increases in the incomes of the poor. Even if across countries the average factor of proportionality between the growth of average overall income and the growth of average income of those in the bottom quintile of the income distribution is one, this does not imply (indeed it is not the case!) that in most countries the factor of proportionality actually *is* one. Indeed, for many countries in the Dollar and Kraay sample, the factor of proportionality relating the incomes of the bottom quintile and average incomes was either significantly less than or significantly more than one; few saw incomes of the bottom quintile rise exactly (or even nearly) 'one for one' with income. The result arrived at by Dollar and Kraay is the consequence of the co-presence of cases in which the income of the bottom quintile rises more than proportionately with average income and cases in which it rises less than proportionately with average income.[18]

It would therefore be incorrect, when, in considering the possible consequences of growth in aggregate income in a specific country, to claim that based on other countries' experiences, there is no reason to expect any large change in household income inequality. Because the majority of countries in the Dollar and Kraay sample *did* see deviations from 'one-for-one' movements between aggregate income and the income of the bottom quintile, if anything it can be expected that a given country would experience a change in household income inequality that could be quite substantial.[19] The direction and magnitude of this change would obviously depend upon the structural specificities of the country's economy. It would be necessary to enquire into these specificities to

[18] Ravallion (2001) presents evidence from a sample of 47 developing countries that in 46 percent of the cases inequality rose with changes in income, while in 53 percent of case inequality fell with changes in income.

[19] As one can see from a look at Dollar and Kraay's figure 4, the deviations from 'one-for-one' movement between aggregate income and the income of the bottom quintile in the Dollar and Kraay data are in many

determine exactly what effects might reasonably be anticipated. There is little evidence that the income of the bottom quintile will increase 'one for-one' with average incomes in any *given* country (or even in most), as suggested by Dollar and Kraay.

A way to think about the efficacy of growth in terms of poverty reduction under a scenario in which the incomes of the poor rise "one-for-one" with average incomes is to consider how effective aggregate growth is from the point of view of targeting. If the objective of a policy-maker is to increase the income of the bottom quintile by a certain amount, a completely targeted policy would identify members of this group and increase their incomes by that amount. A completely untargeted alternative would increase the incomes of everyone reached by the same amount, incidentally increasing those of persons in the bottom quintile in the process. If targeting is costless or inexpensive, then the first policy is a more efficient means of attaining the objective than the second. However, from this standpoint aggregate growth would under the 'one-for-one' assumption be *even less* efficient at reducing poverty than a completely untargeted policy: in an unequal society, it would increase the incomes of the non-poor by *more* than those of the poor! Even if the authors were right that trade liberalization reduces poverty, they would not have given us much guidance concerning how relatively effective it is as a poverty reducing policy.

Further, what does any of this concern about the bottom quintile of the *income* distribution have to do with poverty? If what is meant by poverty is the possession of inadequate resources with which to attain a relevant set of valued ends (e.g. elementary capabilities), then the income of the bottom quintile is not a very reliable measure of it. As Foster and Szekely (2001) point out, using the bottom quintile of income distribution as the measure of poverty will overstate absolute poverty (understood as income inadequate to achieve elementary capabilities) in wealthy countries (since many in the bottom quintile will have sufficient access to the material preconditions of basic capabilities) and understate it in poorer countries (since many people with income above

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cases quite substantial. Figure 4 shows that there is a sizable number of cases in which aggregate income increased but the income of the bottom quintile actually decreased.

that of those in the bottom quintile still will not possess elementary capabilities). Although Dollar and Kraay's focus on the poorest quintile may perhaps be justified as a simplifying device, it must not be thought to be what it is not!

It is also widely recognized that it is necessary to account not only for the extent of deprivation (just how many poor people there are) but also for the depth of deprivation (just how poor the poor are). To address this concern, Foster and Szekely adopt a family of measures they call "general means". These measures aggregate the wealth of each person in a society, but give a person progressively less "weight" in the aggregate the more wealth the person has. Such measures are 'absolutist' in that they focus on the absolute level of real incomes, but do not employ an arbitrary poverty line, and incorporate concern for the depth of poverty by giving more weight to a person the poorer the person is. Using a set of 144 household surveys from 20 countries over 25 years, Foster and Szekely examine the relationship between average incomes and poverty as measured by the class of "general means." They find that the more sensitive to the lowest incomes a 'general mean' measure of poverty is, the less it increases with increases in average income (i.e. the lower the proportion by which the general mean measure will increase for a given increase in average income). Thus, if a measure of poverty that is sensitive to the bottom of the income distribution is used, it *does* appear that there is a systematic discrepancy between the rate of growth of average incomes and the rate of poverty reduction, and moreover that growth is *less* effective at reducing poverty (understood in this way) the *more* weight one gives to the very poorest people, because their incomes are weakly tied to overall incomes. It is perhaps not entirely surprising that this should be so, as the poorest are often the most excluded from opportunities to participate in markets and otherwise to benefit from aggregate economic growth.

Dollar and Kraay do not present convincing evidence that increased trade liberalisation leads to growth in average incomes or that growth in average incomes reduces poverty 'one-for-one' in a sense that is ultimately relevant to policy selection. The authors' strategy of identifying a group of 'globalisers' that supposedly experienced both more

trade liberalisation and more growth is dogged by problems. The criteria adopted to select 'globalisers' are deeply flawed. 'Globalisers' selected by the authors on the basis of having had the highest reductions in average tariffs from the period 1985-89 to the period 1995-97 actually performed slightly *worse* in terms of increases in growth than non-globalisers over this period; it is only by selecting globalisers on the basis of changes in trade volumes (a suspect criterion because of its imperfect relationship to trade policy -- the ultimate focus of the concept of trade liberalization) or by undertaking an inappropriate comparison over mismatched time periods, that Dollar and Kraay come to their conclusions. Countries with large increases in trade volumes often have low levels of trade, casting doubt on whether they can really be characterized as 'globalisers'.

Dollar and Kraay's cross-country regression analysis of the relationship between changes in growth and changes in trade volumes fails adequately to isolate the effect of trade liberalisation on growth. Many factors other than trade policy affect the size of trade volumes. The use of changes rather than levels of trade volumes does not avoid this problem, as it neither controls fully for the influence of time-invariant factors that influence trade volumes in a varying way over time, nor for important omitted variables that do change over time. Among determinants of growth that may have these features are important ones such as infrastructure and institutions.

The authors claim that trade-induced growth will reduce poverty because, on average across countries, the income of the bottom quintile of the population rises in the same proportion as does average income. The jump from this proposition to the conclusion that poverty reduction strategies should focus heavily on producing growth in aggregate incomes is unjustified. Even if proportionate changes in the income of the bottom quintile were on average the same as proportionate changes in average income, this fact would have *no* policy implications for any *specific* country. Further, even if this were true in a particular country, it would not imply that the bottom quintile benefits to the same *extent* as does the rest of the nation from an increase in national income. In any event, there is evidence that the incomes of poor (as distinguished from those of the bottom quintile of the income distribution) do grow at a slower rate than do average

incomes. In particular, there is some evidence that the factor of proportionality between growth in average incomes and growth in the incomes of the poor becomes progressively smaller as poorer people are considered.

The relations between trade, growth, and poverty are real, but our understanding of the links is not advanced by the presupposition that they are simple.

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Table 1

Performance of 'Globalisers' vs. 'Non-Globalisers' According to the Various Selection Criteria Employed by Dollar and Kraay

Criterion 1:

Top One-Third of Developing Countries With Greatest Increases in the Ratio of Trade Volumes Relative to GDP Between the 1975-79 Period and the 1995-97 Period

Average Trade Volumes

		1970s	1980s	1990s	Change, 1970s-1990s	Change, 1980s-1990s
Globalisers	Simple Average	37.9%	47.7%	72.4%	34.5%	24.7%
Globalisers	Weighted Average	16.0%	24.7%	32.6%	16.6%	7.9%
Non-Globalisers	Simple Average	71.7%	68.2%	63.9%	-7.8%	-4.3%
Non-Globalisers	Weighted Average	59.9%	51.8%	49.1%	-10.8%	-2.7%

Average Growth in GDP per Capita

		1970s	1980s	1990s	Change, 1970s-1990s	Change, 1980s-1990s
Globalisers	Simple Average	3.1%	0.5%	2.0%	-1.1%	1.5%
Globalisers	Weighted Average	2.9%	3.5%	5.0%	2.1%	1.5%
Non-Globalisers	Simple Average	2.4%	0.1%	0.6%	-1.8%	0.5%
Non-Globalisers	Weighted Average	3.3%	0.8%	1.4%	-1.9%	0.6%

DID THE 'GLOBALISERS' GROW FASTER? **YES** **YES**

Criterion 2:

Top Third of Developing Countries With the Greatest Declines in Average Tariffs Between the 1985-89 Period and the 1995-97 Period

Average Tariffs

		1970s	1980s	1990s	Change, 1970s-1990s	Change, 1980s-1990s
Globalisers	Simple Average	NA	44.3%	23.4%	NA	-20.9%
Globalisers	Weighted Average	NA	57.6%	34.7%	NA	-22.9%
Non-Globalisers	Simple Average	NA	21.0%	16.5%	NA	-4.5%
Non-Globalisers	Weighted Average	NA	21.0%	17.3%	NA	-3.7%

Average Growth in GDP per Capita

		1970s	1980s	1990s	Change, 1970s-1990s	Change, 1980s-1990s
Globalisers	Simple Average	1.8%	1.0%	2.1%	0.3%	1.1%
Globalisers	Weighted Average	2.8%	3.6%	4.9%	2.1%	1.3%
Non-Globalisers	Simple Average	3.1%	-0.4%	0.9%	-2.2%	1.3%
Non-Globalisers	Weighted Average	4.2%	-0.6%	1.1%	-3.1%	1.7%

DID THE 'GLOBALISERS' GROW FASTER? **CANNOT COMPARE** **NO**

Criterion 3:

Top Third of Developing Countries With both the Greatest Increases in the Ratio of Trade Volumes Relative to GDP Between the 1975-79 Period and the 1995-97 Period *and* the Greatest Declines in Average Tariffs Between the 1985-89 Period and the 1995-97 Period

Average Trade Volumes

		1970s	1980s	1990s	Change, 1970s-1990s	Change, 1980s-1990s
Globalisers	Simple Average	25.6%	31.0%	45.8%	20.2%	14.8%
Globalisers	Weighted Average	14.2%	22.5%	27.8%	13.6%	5.3%
Non-Globalisers	Simple Average	63.8%	60.8%	71.0%	7.2%	10.2%
Non-Globalisers	Weighted Average	56.6%	52.8%	58.5%	1.9%	5.7%

Average Tariffs

		1970s	1980s	1990s	Change, 1970s-1990s	Change, 1980s-1990s
Globalisers	Simple Average	NA	51.4%	24.4%	NA	-27.0%
Globalisers	Weighted Average	NA	61.3%	36.6%	NA	-24.7%
Non-Globalisers	Simple Average	NA	27.3%	19.6%	NA	-7.7%
Non-Globalisers	Weighted Average	NA	32.6%	22.6%	NA	-10.0%

Average Growth in GDP per Capita

		1970s	1980s	1990s	Change, 1970s-1990s	Change, 1980s-1990s
Globalisers	Simple Average	2.3%	1.4%	3.8%	1.5%	2.4%
Globalisers	Weighted Average	2.8%	3.8%	5.4%	2.6%	1.6%
Non-Globalisers	Simple Average	2.8%	-0.1%	0.8%	-2.0%	0.9%
Non-Globalisers	Weighted Average	3.9%	0.8%	1.8%	-2.1%	1.0%

DID THE 'GLOBALISERS' GROW FASTER? **CANNOT COMPARE** **YES**

*Drawn from Dollar and Kraay (2001), Table 3