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## INCOME DISTRIBUTION IMPLICATIONS OF GLOBALIZATION AND LIBERALIZATION IN AFRICA

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## **Income Distribution Implications of Globalization and Liberalization in Africa\***

by

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### **ABSTRACT**

This paper surveys the main income distribution implications of greater openness in the African context. It considers trade, capital flows, technology, risk, and the ethnic dimension. It argues that the central policy dilemma for African policy makers is how to take advantage of the undoubted opportunities that integration into the world economy affords for rapid growth, while managing the attendant risks for domestic income distribution in its different dimensions. It proposes a research and policy agenda to further illuminate the options and tradeoffs they face.

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## 1. Introduction

Technological and policy changes are knitting the world together like it has not seen since the second world war.<sup>1</sup> Trade, technology and capital flows are on the increase. The latter have accelerated particularly fast in the 1990s—private flows now dominate official aid flows by several multiples on a global level. These changes have not come without dissent. While their positive features have figured prominently in discussions, and have been trumpeted until recently in the context of the East Asia miracle, there have been both populist and intellectual voices pointing to the problems of a globalizing world, most particularly its implications for income distribution between and within countries.<sup>2</sup> On the one hand, there are fears that a group of countries will accelerate their growth even further, leaving behind the "laggards" who cannot or will not integrate into the world economy. On the other hand, there are fears that the new global economy might destabilize social equilibrium within countries as the social contract comes under threat from income distribution changes wrought by greater integration into the world economy. Indeed, one might argue that the emerging fault line in development dialogue is no longer state versus market, but between those who advocate rapid and deep liberalization to take advantage of globalization, and those who advocate a more cautious policy stance which takes into account the distributional consequences of such liberalization.<sup>3</sup>

For Africa, the current global debates on liberalization must seem like "deja vu all over again." The dominant consensus in the immediate post-independence period was one which decisively rejected a liberal trading regime. The debate, to the extent there was one, was settled in favor of a trade regime heavily biased against trade, and characterised by overvalued exchange rates and heavy use of trade policy instruments to favor import substitution. The intellectual underpinnings of this rested in the fear of integrating into a world economy without first developing an industrial base, and thus being at the mercy of global trends and fluctuations in primary commodity prices. In the

1980s and 1990s, as the failure of development strategies became apparent, a new strategy, with trade liberalization as an important component, was tried and is still being tried.<sup>4</sup> The countless evaluations of the last few years have produced predictably mixed verdicts. While there is a broad consensus on the devastating effects of overvalued exchange rates, there is disagreement on how far tariff reductions need to go, and on the wisdom of overly rapidly liberalizing the external capital account (which ties in to disagreements on financial sector liberalization).

The debate on external sector liberalization in Africa now finds itself facing the international debate on globalization. But the specificities of Africa should warn against wholesale translation of the global debate to the Africa context. Thus, just because there is resistance to globalization and liberalization in some developed countries, there is no automatic reason why Africa should follow suit. There has to be a separate and independent analysis for Africa, and indeed for different African countries. The object of this paper is to move towards such a research and policy analysis agenda.

## 2. Trade

The relationship between trade liberalization and domestic income distribution has been well discussed in Africa in the last fifteen years.<sup>5</sup> The discussion draws on a tradition of analysis in economics going back at least to Ricardo's discussions of the Corn Laws, and then Samuelson and Stolper's use of the Heckscher-Ohlin framework to discuss the impact of tariffs on returns to different factors.<sup>6</sup> The basic principles are straightforward. Under the conditions of the basic Heckscher-Ohlin model, when a small economy moves from autarky to trade, the factor used more intensively in the exportable gains relatively. The reason is that the world price of the exportable exceeds its autarky price in the country in question. The opposite is true of the importable. Opening up thus increases the relative profitability of the exportable, thus the relative demand for the

factor used more intensively in its production, and hence, given the assumption of integrated factor markets, its relative return economy wide.

It is this framework, of course, which is used to argue that equity in Africa has little to fear from trade liberalization.<sup>7</sup> If we think of the two factors as being skilled and unskilled labor then, since Africa is unskilled labor abundant relative to the world, African exportables will be those which use unskilled labor more intensively, and hence unskilled labor can only gain as a result of opening up. Economists keep returning to this basic result as their touchstone, and yet amongst policy makers and NGO advocacy groups, there continues to be concern about the equity consequences of trade liberalization.<sup>8</sup> It is important to get to the bottom of this difference of view.

It is our contention that the difference between the relatively benign view projected by the standard Heckscher-Ohlin framework and the deep concerns of those working on the ground lies in the nature of factor markets and, relatedly, in the time horizon of the analysis. The standard view assumes integrated factor markets, so that factors flow to wherever there is excess demand for them, and this is key to the result that the more abundant factor benefits from opening up. But one way to interpret the concerns of NGO groups is to see them in terms of segmented factor markets. When one combines different patterns of segmented factor markets and commodity demand interlinkages, one can easily generate situations where opening up can lead to some unskilled workers losing. The simplest and most obvious case is to take the basic Heckscher-Ohlin model and not allow factor mobility across the two production sectors. Now, straightforwardly, all workers in the importable sector, skilled and unskilled, will lose, and all workers in the exportable sector will gain. The net effect on measured inequality depends on the specific numbers involved. Another way to think of this is in terms of the short run and the long run—in the long run the benign effects materialise, but in the short run there may well be distributional consequences to be addressed.

A more complicated case, and one which might capture stylized African reality, is the following.<sup>9</sup> Let there be two tradeable goods—a cash crop exportable and a processed food importable—and a non-tradeable basic food crop. If factor markets were integrated then one could tell a similar sort of story to the basic Heckscher-Ohlin model, although there may be some complications because of substitution patterns in demand as between the tradeables and the non-tradeables. But suppose now that the factor market for the non-traded food crop is isolated from the others. Then the following situation can arise. An opening up leads to export of the cash crop and import of the processed food. Processed food is a substitute in consumption for the basic food. The reduction in demand for the basic food lowers returns to the (isolated) factors used in its production. The segmentation of factor markets can be the result of geographical barriers, or it can be the result of social custom. Suppose, for example, that men (skilled and unskilled) work in the exportable and the importable sectors, but that women (mainly unskilled) work in producing basic food (mainly root crops) which is non-traded. This scenario corresponds to what many women's groups have claimed has happened in Africa as a result of trade liberalization—the lowering of return to women's labor. Of course, if the income pooling hypothesis within the household was true, this might not matter, but all the evidence points to this hypothesis being violated in practice. It then matters what happens to the return to activities that use women's time intensively.<sup>10</sup>

The modelling of factor markets, their interconnections and their segmentations, is thus key. Another illustration can be given, which draws on the undoubted success that mining related activities have had in Africa in the last fifteen years or so of trade liberalization. Minerals are an African exportable, drawing on the fixed and immovable factor of land (or rather, mineral deposits). Opening up increases the relative return to this factor, but also to factors that are complementary to it. If skilled labor and capital is highly complementary to this factor, then an opening up will increase the returns to owners of capital and the high skills needed in mining.

Thus the answer to the disconnect between the simple Heckscher-Ohlin prediction of lower inequality as a result of opening up in trade, and the vociferous denunciation of opening up by activist groups who point to both quick fortunes for some and immiserization for others, is to be found in the behavior of factor markets, and any discussion of openness and inequality for Africa will require detailed and country specific modelling of these markets.

### 3. Capital Flows

It might seem a little odd to worry about the possible effects of private capital flows to Africa—the global surge in private flows has essentially passed Africa by, and the main concern is one of how to attract flows to Africa. The simple arithmetic of growth means that African growth cannot accelerate without external private resources. To see this, consider an economy growing at 3%, wanting to double this to 6%—which is at the conservative end of targets in African policy statements. A doubling of the growth rate will require, in the short run and to a first order of approximation, a doubling of the investment ratio. For most African economies, this means that at least an additional ten percentage points of GDP will have to be found to finance the additional investment. Where is this to come from? If we think of the sources as being either public or private, and either domestic or foreign, then it is clear that the prospects for the public-foreign category (i.e. aid) are not good, and the private-domestic (i.e. private savings) source is unlikely to be a major one in the short run, given the already low levels of private consumption. The two remaining sources are public-domestic (public savings), and there is an argument here that any such savings should be returned to households, and private-foreign (capital flows). This means that there has to be a dramatic increase of private capital flows to Africa, from close to zero to as high as ten percent of GDP.

If we think of the two factors as being capital and labor, then an inflow of capital with technology unchanged will under certain conditions depress the relative return to



capital and increase that to labor—a benign outcome. If there are two types of labor—skilled and unskilled—then the outcome depends on whether capital is complementary to, say, skilled labor.<sup>11</sup> If this is true then demand for skilled labor will receive a boost and skilled-unskilled wage differentials may increase. This is what has been argued to have been happening in Latin America, underlying the somewhat puzzling (puzzling, that is, to someone schooled in the Heckscher-Ohlin prediction) outcome of widening wage inequality following opening up in the 1980s and 1990s.<sup>12</sup>

Portfolio capital flows will in general, and seemingly paradoxically, raise the profitability of non-tradeable goods production relative to tradeable goods.<sup>13</sup> This is because at least some of the additional purchasing power created by them will be spent on non-tradeables, thereby increasing their relative price (the price of tradeables being fixed by world prices through the small open economy assumption). In the short run, there will be benefits to all factors in the non-tradeable sector. In the medium term, there may be adjustment problems as the tradeable sectors contract. In the long run, assuming integrated factor markets, those factors used most intensively in non-tradeable goods production will benefit. The distributional picture is thus quite complex, depending on the precise specification of the model in terms of factor markets, product markets and time horizon. A reversal of capital flows will set in motion the reverse process—and one for which adjustment costs will have to be paid again. The problems of managing volatility of capital flows is often listed as an argument for caution on integrating into the world economy through a liberalized capital account. The income distribution implications of such volatility will be discussed later on in this paper.

#### **4. Technology**

In the global debate, particularly that in the developed countries, the question of whether the undoubted phenomenon of an increase in wage inequality is due to "trade" or "technology" is a central issue.<sup>14</sup> On the trade front, using the same framework as above,

and noting that the assumption of integrated factor markets is more plausible for developed countries, we get the prediction that an opening up will lower the return to unskilled labor relative to skilled labor—since developed countries are relatively abundant in the latter and their exportables are skill intensive products while their importables are intensive in unskilled labor. On the other hand, that technical change can profoundly affect the distribution of income is well recognised in economics. What the internal combustion engine did to horsedrawn carriages and what light bulbs did to candlemakers, are the stuff of folklore and of economic history. The contention is that the world is in the middle of a burst of technical progress which is heavily biased in favor of skilled and educated labor—more profitable techniques are those which employ more skilled labor. It is thus an empirical question as to which of these forces dominates. A debate has raged on, but by and large the consensus estimate seems to be that upwards of 80% of the observed widening of wage inequalities in the US, for example, is accounted for not by trade but by technology.<sup>15</sup>

For Africa, the dilemma is that although the most powerful way of increasing productivity is to import technology from the global marketplace,<sup>16</sup> the above argument shows that this technology, productive though it is, is heavily biased in favor of skilled labor. Greater openness and integration into the world economy will have the benefit of providing access to more productive technology, but it will inevitably widen—in the short and medium run—the gap between skilled and unskilled wages in the modern sector and thus, to the extent that unskilled labor markets are integrated, in the economy as a whole. The dilemma is sharpened further by the fact that much of new technology flows are embodied in capital flows. The need for foreign capital flows discussed earlier has therefore a further corollary—the complementary importation of technology biased in favor of skilled labor.<sup>17</sup>

There is, so far, very little analytical and empirical work on how important this phenomenon might be for Africa, although it clearly underlies much of the disquiet some commentators feel about the implications of globalization for domestic income distribution in Africa. We will discuss this need for analysis, and policy responses, later in this paper.

## **5. Disequilibrium, Risk and Distribution**

A globalizing world is also a volatile world, and an economy which hooks itself on to the global growth engine is likely to be taken on a roller coaster ride. The need for rapid adjustments may well have short and medium run consequences for distribution. We have already pointed to possible short run adverse distributional consequences even in the standard framework. However, there is one aspect which is worth emphasizing further. Situations of disequilibrium and risk are those which open up opportunities for enormous money making through arbitraging across the disequilibrium. There is nothing wrong with this in principle—it is simply the market mechanism working itself out. However, the distributional consequences are worth thinking through. There is an inherent inequality increasing dynamic here. Those with greater education, information and resources will be better able to take advantage of these arbitrage opportunities.

A related issue has been raised in the context of developed countries, but may have an application to Africa. Essentially, greater global integration affects differently those factors which are internationally mobile (skilled labor and capital) and those factors which are not (unskilled labor and land). The demand for those factors which are not mobile becomes more elastic domestically—the mobile factor can relocate to another location where the immobile factor is cheaper. The consequence of this increased elasticity is that these factors become more vulnerable to supply side shocks, increasing volatility of wages. This phenomenon has been commented on in Latin America, where wage spreads have increased even within the unskilled category.<sup>18</sup>

## **6. The Ethnic Dimension**

Our discussion so far has been somewhat sanitised, focussing on standard economic categories—the distribution of income between income classes and skill categories. But it is obvious that the political economy of the social contract in any country is driven by what happens to more broadly defined, and highly relevant, socio-economic groupings. In developed countries this issue does not arise to the same extent because of the greater socio-economic homogeneity, although even in these countries, like the US, race plays a key role in political debate. But in many countries, particularly in Africa, the distribution of income across ethnic groupings and regional groupings matters a lot to the stability of society—the many civil wars that have taken place since independence are a vivid testament to the importance of this issue in Africa—we ignore it at our peril.<sup>19</sup>

The crucial empirical issue is the overlay of the ethnic and regional mapping of the population on the economic categories developed earlier. And there is no general rule for this—the relevant social categories vary from country to country, as does the overlap between occupations and ethnic groupings. The concern here is that liberalization and globalization may have considerable inter-ethnic redistributive implications, but that this may be missed in our analysis. Not to put too fine a point on it—while all known measures of inequality and poverty may be predicted to decrease, there may actually be a heightening of ethnic tensions which may spill over into the streets.

## **7. The Policy Dilemma**

The central policy dilemma for African policy makers is how to take advantage of the undoubted opportunities that integration into the world economy affords for rapid growth, while managing the attendant risks for domestic income distribution in its different dimensions. This is not a new dilemma. It was faced in the immediate post independence period, and the road of isolation was taken. The failures of that period

should inform the decision now. It is fairly clear that isolationism through a return to overvalued exchange rates and high tariff walls are a recipe for disaster. To give up the large general gains from trade, capital flows and technology acquisition is not advisable—Africa simply will not be able to reduce poverty significantly within our lifetimes without connection to the rest of the world.

Thus restricting openness to the world is not the right medium term policy response to manage the consequences of greater openness.<sup>20</sup> Rather, the right response is to have policy instruments that will balance out the various distributional changes that are bound to accompany liberalization into a globalizing world. And here we face our next dilemma because, of course, many distributional instruments have indeed been tried in the post-independence period. In the formal sector, unemployment insurance and social security have been tried—and these have been argued by critics to be vehicles for transfer resources from the general populace to small numbers of privileged formal sector (mainly public sector) workers. In agriculture, the many commodity marketing boards had income stabilization objectives but became instruments for taxing poor farmers.

The dilemma is thus how to develop a new set of redistribute instruments to address the distributional consequences of liberalization and globalization without falling into the trap of reinventing the failed instruments of the 1960s and 1970s. In fact, this dilemma is not unique to Africa. In developed countries, there has been reaction away from the state dominated safety net system precisely at the point where, it can be argued, it is needed most, as the pressures of globalization threaten to dissolve the social glue holding together the post war social contract.<sup>21</sup> This issue will have to be faced in the specific context of African problems and capacities.

But there is yet another policy dilemma—the internal redistributive mechanisms cannot themselves be designed independently of global pressures. For example, any system that taxes skilled labor or capital very heavily is likely to lose these to the global marketplace. Other structures such as child labor laws or labor standards will themselves

come under pressure from other countries competing globally. It is clear that this problem is not one that can be solved by any one country—global or regional agreements are needed to allow governments sufficient room for manoeuvre to design appropriate redistributive schemes in the context of the specificities of their own societies.<sup>22</sup>

## **8. A Research and Policy Analysis Agenda**

Having laid out the issues on globalization and liberalization in Africa, it should be clear that there is rich research agenda ahead.

First, we need to go beyond the basic Hecksher-Ohlin model that has been the mainstay of the distributional analysis of trade liberalization in Africa for the last fifteen years. We have suggested that a key extension will be a more careful modelling of factor markets, building in the sorts of segmentations that are present in Africa, including along gender and ethnic lines. These factor market segmentations could be tied in to a time horizon specific analysis which has also been missing—the standard framework is essentially based on a long run perspective. It is such modelling which will make sense of and shed light on the increasingly divergent dialogue between those who support globalization and those who oppose it on distributional grounds. A basic three goods (an exportable, an importable and a non-tradeable) and three factor markets (two integrated, one isolated) model, with different combinations of interactions between goods and factor markets, should be rich enough in the first instance to capture many of the concerns.<sup>23</sup> The comparative statics would focus on the consequences of various changes in the prices of the exportable and importable, either as the result of liberalization, or as the result of global fluctuations in a liberalized economy.

Second, we need to extend the basic model to include technical progress through capital inflows. Since this will have to be the major vehicle of growth in Africa in the coming decades, it is as well to lay out the distributional consequences of going this

route. The factor market segmentations discussed above will once again be key in the comparative statics of this model.

Third, we need to face head on, and analyse, the ethnic and regional distributional consequences of liberalization and globalization. This will have to be country specific, and will require developing stylized depictions of the overlap between ethnicity, occupations, sectors, and factor markets.

But, as noted in the previous sections, it is not enough to analyse the distributional consequences of globalization. Since resisting globalization is neither desirable nor, ultimately, feasible, it is important to analyse methods and techniques of redistribution which do not take us into the dead end of the 1960s and 1970s. The important point is that these redistributive mechanisms do not necessarily need to be geared to globalization and liberalization. They can be derived from first principles as redistributive and safety net devices.

A central organizing principle in considering redistributive mechanisms is that of a safety net. This can be thought of factor market by factor market—emphasising the importance of the segmentation discussed earlier. Public works schemes are a key instrument to be developed and sharpened for the greater volatility and disruption that is very likely to visit the domestic economy, at least in the short run. These can be geographically targeted, and used to build up local infrastructure and thus go beyond simple transfer programs.<sup>24</sup> There is now considerable experience of these schemes, in Africa and elsewhere, and a continued research program on learning and disseminating the lessons would be of high priority. Such schemes are definitely to be preferred to the 1960s and 1970s solution—permanent public employment.<sup>25</sup> In more formal labor markets, unemployment insurance is a possibility, but the lessons from the mistakes made in developed countries, and in Africa, must be learned. The safety net must not take away the incentive to go back to work once the adverse contingency has passed.

Important as they are, we would not at this stage include the usual issues of education and health in this research agenda. Of course, it is standard to say that the answer to globalization is to increase the skill levels of the workforce through generalised education and basic health provision. But these raise somewhat different, longer term, issues than the transfer mechanisms through which we are suggesting the short term consequences of globalization on income distribution can be addressed. The focus in this research program should be maintained on transfers—there are problems enough here to be tackled.

Where is the money for these safety nets to come from? For a given level government revenue, there is an important tradeoff between longer term investments in health, education and infrastructure, which are needed for the economy to take full advantage of global markets, and the sorts of safety nets we have been discussing. But even sharper is the issue of raising more revenue to finance these safety nets.<sup>26</sup> In general, the argument would go as follows. The process of globalization leads to winners and losers, and policy should aim to redistribute from winners to losers. The safety net mechanisms provide transfers to the losers. The winners should be taxed to pay for these safety nets. But the basic problem is that progressive taxation mechanisms in African countries are not very well developed, and are unlikely to be so developed in the near future. What to do? One possibility is that foreign aid could take on the role of supporting these safety nets over a given time horizon, while the tax mechanisms are developed. But this links to a large discussion on aid effectiveness in Africa.



### Bibliography

- Alarcon, D. and T. McKinley (1995): "Widening Wage Dispersions Under Structural Adjustment in Mexico," Discussion paper FC1995-4, CIS, University of Toronto.
- Alderman, H. et al. (1995): "Unitary versus Collective Models of the Household: Is it Time to Shift the Burden of Proof?," *World Bank Research Observer*.
- Assad, R. (1997): "The Effects of Public Sector Hiring and Compensation Policies on the Egyptian Labor Market," *World Bank Economic Review*.
- Austin, G. (1996): "The Effects of Government Policy on the Ethnic Distribution of Income and Wealth in Rwanda: A review of Published Sources," Mimeo, London School of Economics.
- Berry, A. (1995): "The Social Challenge of the New Economic Era in Latin America," FOCAL/CIS Discussion Paper, FC 1995-8, University of Toronto.
- Besley, T. and Kanbur, R. (1993): "Principles of Targeting," in M. Lipton and J. van der Gaag (eds.) *Including the Poor*, Washington, D.C.: The World Bank.
- Bhagwati, J. (1994): "Free Trade: Old and New Challenges," *Economic Journal*.
- Bigsten, A. (1988): "Race and Inequality in Kenya, 1914-1976," *Eastern African Economic Review*.
- Bourguignon, F. and C. Morrison (1990): "Income Distribution, Development and Foreign Trade: A Cross Sectional Analysis," *European Economic Review*.
- Castaneda, J. (1996): "Mexico's Circle of Misery," *Foreign Affairs*.
- Chipman, J. (1997): "Globalization, Technology, and Income Distribution," Mimeo, University of Minnesota.
- Cline, W. (1997): *Trade and Wage Inequality*. Washington, D.C.: Institute for International Economics.
- de Melo, J. and S. Robinson (1982): "Trade, Adjustment Policies and Income Distribution and Growth in Three Archetype Developing Economies," *Journal of Development Economics*.
- Demery, L. and L. Squire (1996): "Macroeconomic Adjustment and Poverty in Africa: An Emerging Picture," *World Bank Research Observer*.
- Diwan, I. and M. Walton (1997): "How International Exchange, Technology and Institutions Affect Workers: Introduction to Symposium," *World Bank Economic Review*.
- Dorosh, P. and D. Sahn (1993): *A General Equilibrium Analysis of the Effect of Macroeconomic Adjustment on Poverty in Africa*, Ithaca, NY: Cornell University Food and Nutrition Policy Program.
- Easterly, W. and R. Levine. (1997): "Africa's Growth Tragedy: Policies and Ethnic Divisions," *Quarterly Journal of Economics*.
- Feenstra, R. and G. Hanson (1995): "Foreign Investment, Outsourcing and Relative Wages," in R. Feenstra, G. Grossman and D. Irwin (eds) *Political Economy of Trade Policy: Essays in Honor of Jagdish Bhagwati* Cambridge, MA: MIT Press.
- Griliches, Z. (1969): "Capital-Skill Complementarity," *Review of Economics and Statistics*.
- Horton, S. (1995): *Women and Industrialization in Asia*. London: Routledge.

- Horton, S., R. Kanbur and D. Mazumdar (1997): "Inequality and Developing Country Labor Markets," in Y. Mundlak (ed.) *Contemporary Economic Issues, Vol. 2, Labor, Food and Poverty*, MacMillan and St. Martins Press, London.
- Kanbur, R. (1987a): "Measurement and Alleviation of Poverty: With an Application to the Impact of Macroeconomic Adjustment," *I.M.F. Staff Papers*.
- Kanbur, R. (1987b): "Structural Adjustment, Macroeconomic Adjustment and Poverty: A Methodology for Analysis," *World Development*.
- Kanbur, R. (1990): *Poverty and the Social Dimensions of Structural Adjustment in Cote D'Ivoire*. Washington, D.C.: The World Bank.
- Kanbur, R. (1997): "Income Distribution and Development," Mimeo. Cornell University.
- Kanbur, R. (1998): "Poverty Reduction Strategies: Five Perennial Questions," in R. Culpeper and C. McAskie (eds) *Towards Autonomous Development in Africa*. Ottawa, Canada: The North South-Institute.
- Kanbur, R. and M. Tuomala (1994): "Inherent Inequality and the Optimal Graduation of Marginal Tax Rates," *Scandinavian Journal of Economics*.
- Kapstein, E. (1996): "Workers in the World Economy," *Foreign Affairs*.
- Krusell, P. et.al. (1994): "Capital Skill Complementarity and Inequality: A Macroeconomic Analysis," Federal Reserve Bank of Minneapolis, Research Report # 236.
- Krugman, P. (1996): *Pop Internationalism*, Cambridge, Mass: The MIT Press.
- Lawrence, R., D. Rodrik and J. Whalley (1997): *Emerging Agenda in Global Trade*, Washington, D.C: Overseas Development Council.
- Leamer, E. (1996): "Wage Inequality from International Competition and Technological Change: Theory and Country Experience," *American Economic Review, Papers and Proceedings*.
- Leamer, E. (1997): "In Search of Stolper-Samuelson Effects on U.S. Wages," in S. Collins (ed.), *Imports, Exports, and the American Worker*, Washington, D.C: The Brookings Institution.
- Lee, E. (1996): "Globalization and Employment: Is Anxiety Justified?" *International Labor Review*. Oxfam (1995): *The Oxfam Poverty Report*. London: Oxfam Publications.
- Patrinos, H.A. (1994): "The Costs of Ethnicity: An International Review," in G. Psacharopoulos and H.A. Patrinos (eds) *Indigenous People and Poverty in Latin America*.
- Pissarides, C. (1997): "Learning by Trading and the Returns to Human Capital in Developing Countries," *World Bank Economic Review*.
- Richardson, D. (1995): "Income Inequality and Trade: How to Think and What to Conclude," *Journal of Economic Perspectives*.
- Ravallion, M. (1991): "Reaching the Poor Through Public Employment: Arguments, Experience and Lessons," *World Bank Research Observer*.
- Ravallion, M. and Chao, K. (1989): "Targeted Policies for Poverty Alleviation Under Imperfect Information: Algorithms and Applications," *Journal of Policy Modelling*.

- Rodrik, D. (1994): "The Rush to Free Trade in the Developing World: Why So Late? Why Now? Will it Last?", in S. Haggard and S. Web (eds.) *Voting for Reform: Democracy, Political Liberalization and Economic Adjustment*, New York: Oxford University Press.
- Rodrik, D. (1997): *Has Globalization Gone Too Far?* Washington, D.C.: Institute for International Economics.
- Ruggie, J. (1994): "Trade, Protectionism and the Future of Welfare Capitalism," *Journal of International Affairs*.
- Sachs, J. and A. Warner (1995): "Economic Reform and the Process of Global Integration," *Brookings Papers on Economic Activity*.
- Sarris, A. (1994): "Household Welfare During Crisis and Adjustment in Ghana," *Journal of African Economies*.
- Slaughter, M. (1996): "International Trade and Labor Demand Elasticities," Mimeo, Dartmouth College.
- Stolper, W. and P. Samuelson (1941): "Protection and Real Wages," *Review of Economic Studies*.
- Tzannatos, Z. (1991): "Reverse Racial Discrimination in Higher Education in Malaysia: Has it Reduced Inequality and at What Cost to the Poor?" *International Journal of Higher Education Development*.
- Wade, R. (1996): "Globalization and Its Limits: Reports of the Death of the National Economy are Greatly Exaggerated," in S. Berger and R. Dore (eds.) *National Diversity and Global Capitalism*.
- Williamson, J. (1996): "Globalization and Inequality Then and Now: The Late 19th and Late 20th Centuries Compared," NBER Working Paper #5491.
- Wood, A. (1994): *North-South Trade, Employment, and Inequality: Changing Fortunes in a Skill-Driven World*. Oxford, England: Clarendon Press.
- Wood, A. (1995a): "How Trade Hurt Unskilled Workers," *Journal of Economic Perspectives*.
- Wood, A. (1995b): "Does Trade Reduce Wage Inequality in Developing Countries," Mimeo, Institute of Development Studies, University of Sussex.
- Wood, A. (1997): "Openness and Wage Inequality in Developing Countries: The Latin American Challenge to East Asian Conventional Wisdom," *World Bank Economic Review*.

## Endnotes

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- <sup>1</sup> It is not commonly realized that this is the second great phase of globalization since the industrial revolution - the first was in the late 19<sup>th</sup> century. See Williamson (1996).
- <sup>2</sup> See, for example, Rodrik (1997), Kapstein (1996), Wood (1994, 1995a) and Oxfam (1995).
- <sup>3</sup> For overviews of these issues, see Diwan and Walton (1997), and Lee (1996).
- <sup>4</sup> Rodrik (1994).
- <sup>5</sup> Kanbur (1987a, b, 1990); Sarris (1994); Dorosh and Sahn (1993); Demery and Squire (1995).
- <sup>6</sup> Stoeper and Samuelson (1941); Chipman (1997).
- <sup>7</sup> For an analysis along these lines, see Bourguignon and Morrison (1990).
- <sup>8</sup> Bhagwati (1994); Oxfam (1995).
- <sup>9</sup> For extensions to the basic H-O model, see Wood (1995b, 1997).
- <sup>10</sup> On gender issues, see Alderman et.al. (1995), Horton (1995).
- <sup>11</sup> Griliches (1969); Krusell et.al. (1994).
- <sup>12</sup> Alarcon and McKinley (1995); Horton, Kanbur and Mazumdar (1997); Feenstra and Hanson (1995); Berry (1995).
- <sup>13</sup> Chipman (1997).
- <sup>14</sup> There is now a huge literature on this issue. See, for example, Cline (1997); Krugman (1996); Lawrence, Rodrik and Whalley (1997); Leamer (1996, 1997); Richardson (1995).
- <sup>15</sup> This is Cline's (1997) judgment, based on a survey of the available evidence.
- <sup>16</sup> The general case for openness is made powerfully, for example, by Sachs and Warner (1995).
- <sup>17</sup> For a theoretical analysis of "learning through trade", see Pissarides (1997).
- <sup>18</sup> The "increased elasticity" point has been made very well by Rodrik (1997). For evidence, see Slaughter (1996); Alarcon and McKinley (1995).
- <sup>19</sup> See Austin's (1996) devastating account of the connection between income distribution and genocide in Rwanda. Easterly and Levine (1997) show the importance of ethnic fragmentation in explaining growth performance. See also Bigsten (1988). For analyses from outside Africa, see Patrinos (1994) and Tzannatos (1991).
- <sup>20</sup> Sachs and Warner (1995).
- <sup>21</sup> See Ruggie (1994).
- <sup>22</sup> For different perspectives on this, see Rodrik (1997), Wade (1996), Kapstein (1996), and Castaneda (1996).

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<sup>23</sup> The challenge will be to keep the modelling manageable and yet rich enough to provide insight. For an early attempt at general equilibrium modelling, see de Melo and Robinson (1982), see also Kanbur (1990).

<sup>24</sup> These issues are considered, for example, in Kanbur (1997, 1998); Ravallion (1991); Ravallion and Chao (1989); Besley and Kanbur (1993).

<sup>25</sup> See Assad (1997).

<sup>26</sup> For an abstract analysis of optimal taxation when "inherent inequality" increases, see Kanbur and Tuomala (1994).

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