# GLOBALIZATION: PROSPECTS, PROMISE AND PROBLEMS

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We can be reasonably confident that globalization will characterize the future, first, because it is already here, and second, because the forces by which it was decreed promise to make its mandate even more enforceable in the foreseeable future. We will argue here that, though its most salient attributes manifest themselves in commodity trade, it is even more deeply entwined with the exchange of technology and intellectual property more generally.

Economists have tended mainly to view globalization as a basically benign phenomenon, and so it may transpire in the long run. Yet few would dispute that its short-run consequences, particularly for some groups singled out by economic forces, are likely to be extremely painful. And if this problem is ignored and little done about it, surely the neglect will not be easy to defend. More than that, even if globalization's consequences include markedly increased productivity, so that wealth and income overall are bound to increase, there is no guarantee that the benefits will be universally disseminated. Indeed, we will show here that not only limited groups of individuals, but entire economies, may find themselves to have been damaged economically. And, perhaps curiously, it may be the wealthiest economies that are the victims. The analysis underlying this conclusion is what can be claimed to be the original contribution of this paper. The rigorous arguments

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that demonstrate this possibility categorically turn out, moreover, to be trivially straightforward, as will be seen in a later section of the paper. Yet the discussion will end with a more sanguine view of the prospective benefits of globalization and the enhancement of competition and trade that it entails. For competition and trade are arguably at the very heart of the growth miracle of the free-market economies (see Baumol, 2002). Thus, the increase in such pressures resulting from globalization can enhance growth and innovation in every region they touch and can extend their benefits, in the long run, to countries that previously were left behind.

## I. Prospects: The Linkage of Innovation, Technology Transfer and Innovation

Technological change has had a profound effect on foreign competition and, through this, on the firm's demand for labor.[3] However, we will maintain here that the competition and the technological change are inextricably intertwined, and that their interconnection is an important part of the pertinent analysis. It is clear that competition comes increasingly from foreign sources. The automobile industry is just one dramatic illustration of this development. The U.S. auto market, once almost the exclusive province of a small number of domestic manufacturers, now faces effective competition of imports from more than a half-dozen foreign countries, and of cars manufactured in the U.S. by foreign-owned firms.

The growth of such competition is itself highly dramatic. The *share* of exports in world GDP has risen more than thirteen-fold in the last 200 years (Maddison, 1995, p. 38). Given how rapidly GDP itself has expanded over this period, this means that the

[3] On the role of foreign competition, see, e.g., Bernard , Eaton, Jensen and Kortum (2000), Borjas and Ramey (1995), and Wood (1994).

absolute value of exports has exploded. Maddison estimates (in constant 1990 dollars) that world GDP in 1820 was $695 billion and had increased to $27,995 billion by 1992 (a forty-fold increase); the value of world exports was $7 billion in 1820 and $3,786 billion in 1992 (a 541-fold increase). Thus, trade is, increasingly, the source of the competition that enforces the expansion of improvement in technology.

But the relationship also goes in the other direction. The growth of foreign trade and foreign competition are themselves ascribable primarily to innovations that have revolutionized transportation and communication. They have sped communication around the globe from a period of months to a day or two in the case of transport of physical product, and virtually to an instant in the case of information. Here, we must not forget that until the middle of the 18th century travel by land was an excruciatingly daunting and difficult activity, and that until near the middle of the nineteenth century information ordinarily could not be delivered more rapidly than a horse could gallop.[4] Innovation has reduced the real cost of transportation to a small fraction of its previous levels, and has changed the activity from one that was incredibly perilous to one that is among the economy's safest.

For example, in the seventeenth and eighteenth centuries, ships did not even have the means to determine their longitude. As a result:

> "Too many were the ships that dashed aimlessly and fruitlessly about, too far this way, too near that, until scurvy and thirst killed off or incapacitated so many hands that the crew could no longer man the rigging and direct the vessel;

[4] There was a somewhat earlier exception: the French and British had a system of semaphores, with communication from hilltop to hilltop, somewhat analogous to communication by Native American smoke signals.

> and then the ship would float helpless with its population of skeletons and ghosts, another 'flying Dutchman'…." (Landes, 1999, p. 745)

It is no wonder that Spain, The Netherlands, France and the United Kingdom offered huge prizes to anyone who could invent a practical way to determine longitude at sea. (The British prize, 20,000 pounds, was almost 150 times the annual income of the highest churchman in Scotland.[5]) Since then, the steam engine, metal hulls, radio communication, satellite location processes (GPS), and a host of other innovations, have clearly revolutionized transportation and communication, bringing substantial foreign competition even into the service industries, from many of which it was almost totally absent until quite recently. For example, until the twentieth century the performing arts were largely a local activity, with transportation of an acting troupe an expensive hardship. Today, in the form of film, CDs, DVDs and television broadcasts, they are among the leading revenue producers among U.S. exports. Computer programming carried out by lower-wage programmers in India entails no delays. And competition *forces* firms to take advantage of such profit-enhancing opportunities, for the merciless market imposes insolvency as the penalty for failure to do so.

This is the mechanism that underlies the crescendo of globalization, and it is too powerful to be stopped. The issue is not whether further internationalization of the market for commodities and the market for useful knowledge will occur or whether it can be halted. Rather, the choice is the adoption of methods that can ensure that globalization yields all its promised benefits and ameliorate its damages, or whether the process will be

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[5] John Rae, *Life of Adam Smith*, London: Macmillan 1895, p. 49.

left alone to play itself out, in effect, trusting that the god of Mammon, under whose guidance it proceeds, will be moved to treat humanity kindly, and without deliberate human intervention and supervision.

**II. The Promise of Globalization**

The welfare gains that globalization may offer have many times been pointed out. On that subject we have little new to offer. As economists are prone to emphasize, despite the doubts and reservations that globalization elicits, there can be little question that it can contribute to the economic well-being of much of the world's population, at least in the long run. Most directly, it can do so through its stimulative consequences for innovation and economic growth.

First, we should note here that the interdependence of trade and innovation goes even further than indicated in the previous section. Increasingly, innovation has become a prime competitive weapon, with producers trying to fight off rivals with the aid of improved products and processes. The increased intensity of foreign competition has surely contributed to the pace of innovation in this way. This is particularly true of the industrialized economies in which almost all innovation takes place, and will raise productivity in those economies, thus contributing wealth, reducing the real costs of domestic products and increasing their quality or providing better substitutes.

And the increased facility of communication, as a key component of globalization, has, in turn, helped to speed technology transfer from one country to another. Information about innovations is disseminated throughout the world almost instantaneously in fields in which technology-exchange agreements between firms are widespread. Even in the absence of these friendly transfers, estimates indicate that such

information is spread throughout the industrialized countries within a year or two of the introduction of an innovation.[6] This can benefit the developing countries, or at least those in a position to make effective use of improved technology, by contributing to productivity growth.

In the long run, this is the best hope for the developing countries in their quest for reduction of their distressing poverty. Though the short-run effects are undoubtedly more questionable, the experience of the affluent countries indicates that with the passage of time productivity growth does not merely *trickle* down. For the bulk of the population it makes possible living standards that ancestors might not even have imagined. Prosperity leads to competition for labor and to increasing real wages, and the change in living standards in the countries with a record of substantial productivity growth is universal. Though the timing differed, in the U.S., Germany, France, Italy, Japan and perhaps 20 other countries, per-capita real income is now a substantial multiple of what it was a century ago, and the process is contagious. As is indicated by the experience after World War II of a number of Asian countries, Spain, Portugal, Ireland and perhaps even India most recently, the outpouring of production that innovation brings eventually spreads widely, even if not universally.

It is not only the developing countries that stand to gain. The affluent economies can benefit from cheaper imports, which raise real incomes and can, in particular, benefit the remaining impoverished inhabitants of those countries. Thus, *in the long run* globalization *may well* offer benefits for all, particularly if effective employment macroeconomic policy helps to prevent job-loss consequences. And much pro-

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[6] See Maddison, 1995.

globalization argument has taken the position that it *must* do so. But it will be maintained below that this need not be so, even in the long run, and that in the short run it can bring much pain and suffering in both the affluent and the developing countries. Here, the point is not merely that in the long run we will all be dead, but that in the short run many can be miserable indeed, and that unless concrete and adequate countermeasures are taken, the future benefits may not be worth the price, especially since the future benefits need hardly be ubiquitous.

## III. Problems: Globalization's Short-Run Damages

Those who believe that macroeconomic policy can effectively limit involuntary unemployment have reason to conclude that loss in the total number of jobs is not an inevitable consequence of globalization. However, while macroeconomic policy may be able to reduce involuntary unemployment of Keynesian type, the speed-up of innovation induced by foreign competition may well exacerbate structural and frictional unemployment, as more-frequent plant retooling leads to temporary layoffs and as changes in the mix of worker skills needed in the plants displaces some workers, forcing them into (often long periods of) unemployment.

But though we may reject the popular view that globalization is a major threat to employment and an instrument of extensive job loss, we cannot deny that there is reason to be concerned with at least the short-term effects on wages in both developing and developed lands. International competition can influence relative input prices and thereby determine whether machinery will be substituted for labor, for example, or whether skilled labor will be substituted for unskilled.

There are, also, more direct implications for wages. Surely, the increased use of programmers in India can be expected to reduce the demand for such skills in the U.S. below what it might otherwise have been. One may suspect, however, that this observation also conceals some complications. For example, innovation that enhances the user-friendliness of computer operation may well increase the complexity of the underlying programs, and the result may be to facilitate the transfer of jobs from mid-level American programmers to lower-wage areas with well-educated labor forces, while increasing the demand for the most skillful specialists in the U.S., thus reducing the wages of the former and increasing those of the latter in this country. The magnitude of the wage effects of enhanced competition from abroad is a subject very much in dispute, both on theoretical grounds and from the results of different methods of econometric analysis of the available data. This is not the place to discuss these more technical issues in detail. But the impressionistic evidence from history and other sources is suggestive.

For the developing countries, economic history suggests that an industrial revolution initially tends to depress real wages and real living standards. Though the British industrial revolution is usually considered to have taken off about 1760, it was probably not until near 1840 that wages began to rise. Data on life expectancy and average height also indicate that the spread of innovation was accompanied by worsening of the economic status of wage earners, perhaps in part as a result of the move from the countryside to crowded, unsanitary slums, and the evidence indicates that the U.S. labor force underwent a parallel trajectory. One may surmise that part of the explanation was a rise in the power of employers and an inability of the workers, in the absence of labor organizations, to resist.

The opponents of globalization draw attention to a similar phenomenon in 21st century globalization, with multinational employers subjecting their employees to disturbingly low wages and shocking working conditions, particularly on the criteria widely accepted in the affluent economies (though by no means always adhered to even there). It is not clear whether the multinationals tend to depress wages below customary levels in the developing countries or whether they merely resist any increase in wage payments beyond the current low norm. Nor is the result more defensible if the managements of some of the multinationals have good intentions but are prevented from acting on them by the merciless cost-containing practices of competitors. But whatever the truth of the matter, it seems plausible that in the short run the workers in the developing lands may gain little and may even lose out in the initial stages of globalization.

It can be argued that all this is transitory and that in the long run the lower income groups in the developing countries will be better off, as has indeed been true in the developed economies. But the process can easily take decades. We cannot just ignore decades of very substandard earnings that amount to preservation of grinding poverty in a developing country or the permanent structural unemployment in a developed economy that can beset older workers whose skills are made redundant by innovation, and for whom the acquisition of new skills is not a practical option. These are hardships that constitute an extremely painful economic pathology for the affected individuals. At the very least, one can argue that those who stand to benefit from the process should be expected to agree to provide systematic and substantial assistance to the victims, presumably via government channels, and supported liberally by the wealthier

communities. If that is not acceptable politically, there is surely little that can be said convincingly in support of a contention that the suffering of the victims will be justified by the promised future benefits to their descendants.

**IV. Problems: Possible Longer-Run Damages from Globalization**

Though it can be hoped that in the longer run globalization will help to reduce poverty in the developing countries and even make it possible eventually to approach its complete elimination, as stated earlier, and contrary to widely-held views, globalization can also permanently damage economic well-being in some of the affected countries, notably those countries that are now in the economic vanguard. That may on first consideration seem surprising, if not paradoxical. The simple explanation is that competition and mobility of products tend to equalize wages, raising those that are low, but also reducing those that are especially high.

Before showing more extensively the way in which long-run damage to some countries may occur, we will provide a very straightforward proof of this possibility. Suppose, for simplicity, that we are dealing with a two-country world, with one economy developed and at the technological frontier, while the other, with similar population size and resources, is far behind in terms of productivity, technical competence and per-capita income. Assume also, for easier exposition, that there is no further technical progress in the wealthier country, while in the other economy there is catch-up, made possible by globalization of technology, with equipment and ability approaching those in the wealthier country. Let us use the notation:

W(A)i = initial per capital income in the wealthy economy if trade were absent (autarky);

W(T)i = initial per capita income in that country under free trade; and

W(A)c, W(T)c = the corresponding magnitudes after full developing-country catch-up;

Then we must have:

(1) $W(A)i \equiv W(A)c,$

because there has been no technical progress in the wealthy country and in autarky there is no way it can gain from the increased productivity of the developing economy. Moreover, initially, since there were differences in the productivities of the two economies, assuming that this entailed some comparative advantages, there must have been some (mutual) gains from trade so that it must have been true that:

(2) $W(A)i < W(T)i.$

However, once the developing country has caught up everywhere and has productivity levels identical with those of the initially wealthier country, the logic of the Ricardian analysis tells us at once that all comparative (as well as absolute) advantages will have disappeared, so that there will be no further gains from trade. Hence, by (1) and (2) we must have:

(3) $W(T)c = W(A)c \equiv W(A)i < W(T)i,$

thereby demonstrating that after the developing country has caught up, the formerly wealthier country must have a per-capita income lower than that in its initial trade equilibrium. Of course, that need not be true if there had in the meantime been technical progress in the wealthier country. But it still follows that the country can be *permanently*

worse off than it would have been if globalization had not transferred the technical knowledge to its trade partner that permitted the latter to catch up everywhere.

Admittedly, the case dealt with here so far has been an extreme situation, but it suffices to prove the contention that has been offered, that globalization can be damaging to one of the affected countries, even in long-term equilibrium. Essentially, what has happened in this tale so far is that the wealthier country has effectively been driven out of its export markets, and has thereby been forced to accept a permanent cut in real income. The parallel with the concerns about, for example, loss of steel and clothing production to less developed producers, should not be comforting. However, that is only an impressionistic observation. We can go further and give it a more concrete underpinning that offers additional illumination.

## V. Inter-Country Transfer of Industries and Its Benefits and Damages[7]

Let us, then, turn to a somewhat more formal model that enables us to analyze our issue in more general terms. That issue is the determination of the effect on the welfare of one country when an industry leaves that country and that industry's production is taken over by its trading partner. We will see that there are indeed some circumstances in which the transfer is mutually beneficial, but there is also a large range of cases in which the acquisition benefits the recipient economy but damages the other. We will be able to go further and indicate the circumstances that lead to the one conclusion or the other. Specifically, we will see that when the country that is the recipient of the industry is

[7] The remainder of this paper is based entirely on Gomory and Baumol (2000), which provides the underlying Ricardian trade model and a much more careful discussion of the logic of the analysis and its implications.

initially very poor relative to the other country, the industry shift will produce mutual gains, so we will call the pertinent relative income range the "zone of mutual gains." But we will find that when the two countries' incomes are closer together, the shift will benefit the recipient and harm the loser of the industry, making the pertinent income range a "zone of conflict."

We will assume a world with two countries trading in n commodities and, for simplification, assume that each commodity is produced under conditions entailing scale economies. While scale economies normally complicate analysis, here it is a simplification because any assignment in which Country 1 is the exclusive producer of *any* $m < n$ of these traded commodities and Country 2 is the exclusive producer of the remaining $n - m$ items becomes a (locally) stable equilibrium. That is so because if, say, Country 1 is the exclusive producer of good X, then if Country 2 will attempt small-scale entry into X production the resulting absence of scale economy will prevent it from competing successfully. Hence, in this model there will be a vast number of locally-stable equilibria that increases rapidly with n. Specifically, if we exclude the possibility of any country producing nothing at all, the number of equilibria will be $2^n - 1$, because for each commodity there will be two possible places in which it can be produced. The scale-economies premise will help us because then we can examine the range of distributions of industries and the implications of each possible distribution for welfare in the two countries.

For each distribution of industries and its corresponding equilibrium there will be a level of national income, $y_{1,}$ $y_{2,}$ for countries 1 and 2 respectively, and we can readily calculate[8] from these Country 1's share of world income,

(4) $z = y_1/(y_1 + y_2)$.

For each equilibrium, as a further simplification here, we will measure the welfare of country j as its national income, $y_{j..}$ Because it can be shown that z, the share of world income received by Country 1 increases monotonically if it adds to the list of the n commodities of which it is the exclusive producer, we will use z as the indicator of Country 1's share of industries, with 1-Z obviously representing this magnitude for Country 2. Finally, at any equilibrium we can calculate world income,

(5) $y_w = (y_1 + y_2)$.

We will proceed with the aid of a graph that will show all the equilibria and the upper income frontiers[9] of the region they fill for the world and for each of the countries, respectively plotting $y_{w'}$ $y_1$ and $y_2$ all as functions of $z_.$ That, plainly, will indicate how a transfer of industries that increases one country's share at the expense of the other (that is, a change in z) affects attainable world income and that of the two countries.

We start off with a graph of world income as a function of z, which, we will argue intuitively, is hill-shaped. This means that attainable world income is not at its highest when either country has succeeded in capturing for itself the bulk of the world's industries (the right-hand or left-hand ends of the graph where the Country 1 share index,

[8] The calculation can readily be carried out with the aid of a standard Ricardian model.
[9] As described intuitively here, the frontier of a finite assemblage of equilibria is not rigorously well-defined. However, in a more-careful development of these concepts, this intuitive frontier can be given a completely rigorous meaning.

z, is close either to zero or unity). Rather, the attainable world income will be relatively high toward the middle of the graph, where each country has a substantial share of the trading industries. While this has not been found to be subject to what may be deemed "rigorous proof," it will be seen to be highly plausible. But that is all that it will be necessary to accept in order to derive our conclusions and complete our analysis.

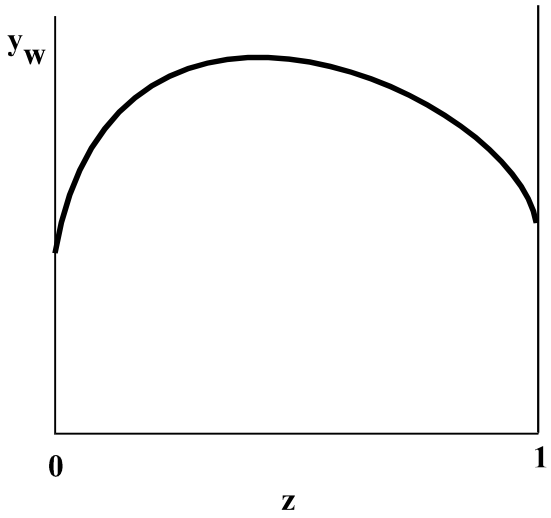


**Figure 1. World Upper Income Frontier**

Figure 1 is the graph of the upper frontier of world income, with z shown on the horizontal axis and $y_w$ on the vertical axis. It need not be symmetrical, but as shown and already stated, it is assumed to be hill-shaped. There are two primary reasons that make this shape plausible. First, at either the right-hand or left-hand end of the graph, one of the countries contains almost all of the industries. Hence, its labor force will be fragmented among many products, producing them in small quantities and forgoing their scale-economies advantage. Second, the country that has the bulk of the industries at such a point will be producing many products for which it has no

"natural" absolute advantage, so that much of the gain from trade must be given up. Only where the value of z is far from either zero or unity are both these sources of output gain unleashed, and hence the maximum point of the world income frontier lies somewhere toward the center of the graph, as shown.

We can immediately deduce the shape of the upper income frontiers for the two countries from that of the world frontier. This follows immediately from (4), and (5) which give us:

(6) $y_1 = zy_w$ and $y_2 = (1-z)y_w$.

The first of these tells us at once that at z = 0 the upper production frontier for Country 1 will equal zero and that as z increases toward unity that country's frontier will approach the world frontier asymptotically. The frontier for country 2 will be a distorted mirror image of that of Country 1, now moving from zero at z = 1 toward the world frontier as z approaches zero (Figure 2).

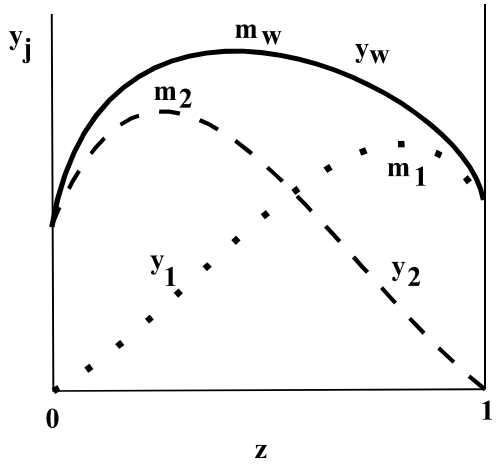


**Figure 2. World and Country Income Frontiers**

There is one more step that is necessary to complete the story. We have:

**Proposition:** Let $z_w$ , $z_1$ and $z_2$, respectively be the value of z at the maximum of the world frontier, the Country 1 frontier and the Country 2 frontier. Then, if the world frontier is horizontal at its maximum and the maxima of the frontiers of the two countries are unique and differentiable near $z_w$, one must have $z_1 > z_w > z_2$.

**Proof:** The derivatives with respect to z of the two relationships in (6) are

(7) $y_{1'} = y_w + zy_w'$ and $y_2' = - y_w + (1-z)\, y_w'$

and since at the maximum of the world frontier $y_w' = 0$, it follows that at $z = z_w$

(8) $y_1' > 0, \quad y_2' < 0$

so that the Country 1 frontier rises toward the right of $z_w$, the maximum point of the world frontier, while that of Country 2 rises as one moves toward the left. If the Country 1 and Country 2 frontiers were known to be convex, as they appear to be in the figure, it would immediately follow that $z_1 > z_w > z_2$. Actually, the Country 1 and Country 2 frontiers, although not convex, can be shown to be quasi-convex, which produces the same result.

It follows that the income share of Country 1 that can maximize its own absolute income must be greater than that which can maximize the absolute income of Country 2. In other words, the Country 1 peak, $m_1$, must always lie to the right of the Country 2 peak. We also have two corollaries:

**Corollary 1.** At $z_1$, the maximizing z for Country 1, the largest absolute income available to country 2 will be below (and, very plausibly, substantially below) the Country two maximum, $m_2$ (Figure 2). The relative positions of the two countries will be reversed at $z_2$.

**Corollary 2.** Between z = 0 and z = $z_2$, both country frontiers can be expected to be upward sloping. Between z = $z_1$ and z = 1, both frontiers will normally be downward sloping. In the region between $z_2$ and $z_1$, the Country 1 frontier can be expected to have a positive slope while that of Country 2 will be negative.

The two corollaries lead immediately to the pertinent economic interpretation of our result. First, we see from Corollary 1 that the point on the frontier of one of the countries that permits maximization of either country's income will condemn the other country to an income below, and plausibly well below, that other country's maximum. In other words, the trade process inherently can entail conflict of interests, with each country able to achieve its maximum only at the expense of the other.

Second, near z = 1 Country 1 will have acquired too many of the world's industries for its own good. Because both frontiers have negative slopes in this neighborhood of the graph, a leftward move, i.e., a reduction in z, will make them *both* better off. Thus, if Country 1 is relatively very rich and Country 2 very poor, both can gain by a more equitable sharing of the world's industries. A similar situation holds near z = 0, only this time with Country 2 having co-opted too large a share of the n industries for its own welfare. Because near z = 0 or z =1 both countries can benefit simultaneously by a reallocation of industries that may be achieved

through increased productivity of the poorer economy (or in any other way), we call these two outer regions the "zones of mutual gains," as noted above (see Figure 3). In contrast, in the central region between $z_1$ and $z_2$, the slopes of the two

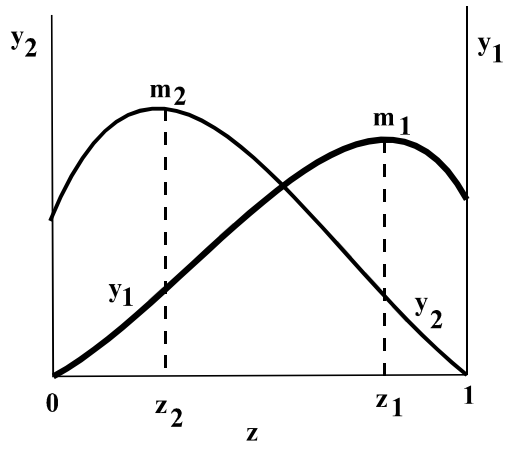


**Figure 3. Zones of Mutual Gain, Zone of Conflict**

frontiers are opposite in sign, so that any move that benefits one of the countries must be detrimental to the other. This zone of conflict is the region in which neither county is exceedingly poor, but one may well be considerably less affluent than the other. The interpretation is clear, and gets us back to the issue of the ubiquity of the long-run benefits of globalization. For it tells us that, far from invariably leaving all economies better off, globalization can lead to increased prosperity in the less-affluent country at the permanent expense of the country that remains, or at least formerly was, in the vanguard. For globalization and the resulting transfer of intellectual property leading to improved products and processes can enable the

economy that is somewhat behind, say Country 2, to increase its income share. But if its initial income share, $z_2$, was located inside the zone of conflict, that must plainly be harmful to its trading partner, Country 1, and there is nothing inherent in the behavior of the model to undo the damage. The most direct implication is that U.S. labor unions may well be right in their concerns about globalization and their resistance to policy measures that facilitate it.

**VI. What We Have Learned and What We Need to Learn**

The approach taken here is quite different from most current discussions of globalization. Discussions of the "offshoring" of jobs especially tend to be heated and fragmentary and to focus on the outcome for workers in the industries most affected by globalization. The overall effect on a country is harder to determine and harder to quantify. The approach in this paper has investigated that overall effect by using the standard time-honored Ricardian model. The Ricardian model tells us that the overall effect on a country of improved productivity abroad is neither always beneficial nor always deleterious but can be either, depending on the circumstances characterized above.

However there is also something to be learned from the more popular discussions. These discussions focus on the possibility that displaced workers will not find new jobs or will only obtain jobs that provide a lower wage than before, because these workers can no longer use the accumulated skills and know-how of a lifetime. Other observers assert that, because of the dynamism of the domestic economy, with its growth stimulated further by the enhanced global competition, the new jobs

created will preponderantly be better, or at least better remunerated, than the old—in other words, automatically "higher up the food chain."

Common sense tells us that the mix of these outcomes that actually occurs is, of course, what really matters. The simple Ricardian model cannot provide all the answers, because in the version used here all workers are automatically redeployed to other industries and, since the model has a single wage in each country, workers are re-employed at essentially the same wage as before. Clearly, there is need for further research on these matters. As long as one assumes that productivity gains abroad are uniformly beneficial to the home country as well as to its developing trading partners, the need for a more detailed understanding is not as evident. But this paper has shown that in the simplest of models we cannot count on such a uniformly benign outcome. What is needed is an investigation of models that do take into account the various possibilities for the displaced workers, and other pertinent factors such as the effect of having as a trading partner a country that has both a significant developed sector and, behind that, a much larger pool of low paid agricultural workers. All these issues urgently require examination.

**VII. Concluding Comment**

Globalization may ultimately prove a blessing, but the blessing may very well turn out to be quite mixed. In the short run, while it is possible that some or even all of the countries may gain *in terms of the income of the average inhabitant,* it is virtually certain that some of the affected persons will suffer, perhaps very greatly, via reduced incomes, deterioration in working conditions and even via permanent

unemployment. The moral here is that improvement for an *average* resident is not enough, and societies should consider whether adequate compensation to those who are harmed is called for. In the longer run, it may even prove that entire economies will be worse off than they might otherwise have been without the impact of globalization. Perhaps surprisingly, at least in contrast with what seems to be general belief, this may occur along with a move toward equalization in standards of living among countries, but with the poorer of the affected countries benefiting while the wealthier countries lose out. Yet, while these conclusions may be at odds with received analysis and less sophisticated views, its intuitive explanation is hardly esoteric. If globalization brings know-how and productive capacity to the laggard economies, attracted in part by initially lower wages, this will enable those economies to compete more effectively. Added to this is the resulting growth in the effectiveness of competition that will drive wages toward the middle, above the initially low levels in the less-developed economy, but below its former level in the wealthier countries.

But this is not the end of the story, for there is a second and powerful countervailing force that works to produce long-run benefits to all countries affected by globalization. For it is the power of competition to which we can ascribe much of the unparalleled, sustained economic growth and the unrivalled explosion of innovation that the free-market economies have experienced in the past two centuries. In the countries that have participated in this process, the economic benefits are so spectacular that they could hardly have been imagined by our ancestors. Globalization can extend this process to other nations and can strengthen such developments

substantially even in the world's leading economies. Although difficult to quantify, this may well be the most cogent reason for support of globalization.

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