OPEN ECONOMIES: IMPLICATIONS FOR GLOBAL AGRICULTURE*

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I am honored to be invited to give the Fellow's Address.

In my remarks today I want to address some of the issues associated with national economies becoming increasingly open. My paper is divided into three main parts: (1) some background on the rapidly changing international economy; (2) the elements of an analytical model for understanding the changes that are taking place in that economy; and (3) a discussion of some of the implications of increased openness for our profession. The thrust of my paper is towards the future, with the goal being to help us better understand the rapidly changing international economy.

Some Background

The international economy has experienced enormous changes in the period since the end of World War II. Many of these changes are familiar to us since they are so overt and apparent: (1) a growing dependence on international trade as trade has

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tended to grow at a faster pace than global GNP; (2) the emergence of a huge, well-integrated international capital market; (3) the shift in 1973 from the old Bretton Woods fixed exchange rate regime to what can best be described as a system of bloc-floating exchange rates;[1] and (4) the shift of the United States from being the world's largest exporter of capital to now being the world's largest importer, and to being the world's largest debtor nation.

Somewhat more subtly, but no less important, is the changing basis for comparative advantage in the international economy. Investments in human capital are becoming increasingly important as the basis for comparative advantage as an ever larger share of global increases in output come from that source. This trend is reinforced by the fact that an ever larger share of the world's R & D budget is now spent outside the United States. More specific issues include the continued increase in general education in the developing countries, which makes it easier for them to adopt the highly transferrable technology associated with the manufacturing sector, and the development in the tropical South of a growing capacity to produce the more location-specific biological technology associated with agriculture.

Foreign exchange markets have now come to be dominated by international financial flows. Moreover, the combination of the "flexible" exchange rate system and the well integrated international capital market means that monetary policy now affects national economies in large part by inducing changes in the value of national currencies, thus forcing the burden of adjustment to changes in monetary and fiscal policy onto the tradeable sectors, of which agriculture is an important component in most countries. (See Schuh, 1976.)

More recently, we have witnessed another significant set of developments, a growing movement towards economic integration. There were earlier attempts at such economic integration in the post-World War II period, some of which were successful. Probably the most successful example was the creation of the European Economic Community. However, there have been a number of attempts at such economic integration in Latin America in the post-World War II period, largely as an attempt to extend the import-substituting industrialization policies of the countries in that region after such policies had failed at the national level. (See Corbo, 1986.) These attempts include the Latin American Free Trade Association (LAFTA), the Andean Common Market, and the Central American Common Market. The Central American initiative was the only of these initiatives which had any success, but it also eventually encountered difficulties. (For a discussion of these various initiatives in Latin America, see Schuh and Brandao, forthcoming.)

More recently there have been a number of significant efforts at economic integration. Perhaps the most notable of these is the Canada-United States Free Trade Agreement, which has a commitment to eliminate most barriers to trade across the border with the greatest amount of international trade in the world. Next in line for further integration is EC-92, which the Europeans describe as the "the completion of the market." This initiative proposes to eliminate all barriers to trade and to resource mobility within the European Community by 1992, which is just a year away.

Partly in response to the economic colossus that a fully integrated European Community would be, the United States has proposed the creation of a North American Free Trade Agreement, with Mexico to join Canada and the United States. If those negotiations should prove to be successful, it is most likely that other Latin American countries would join soon after since they would not want to let Mexico alone have preferential access to the large United States and Canadian markets. In fact, countries such as Chile and Venezuela have already indicated an interest in joining.

Many observers expect Japan eventually to create an economic community of its own in Southeast Asia, or possibly to join up with the United States. This has raised the possibility of a world of trading blocs, with many observers concerned that economic warfare would be the eventual result. Japan's creation of its own trading bloc is far from a foregone conclusion, however, since an amazing amount of economic integration has already taken place in the Pacific Basin and the world's economic center of gravity is rapidly shifting from the Atlantic to the Pacific. (For a perceptive and insightful discussion of the changing Pacific economy, see the papers in Commission on U.S.-Japan Relative for the Twenty First Century, 1991.)

Interestingly enough, there have been some examples of economic <u>dis</u>integration taking place at the same time this integration has been taking place. For example, the countries of Eastern Europe have separated themselves from the Soviet Union, and the economic system (the Comecon) which tied these economies to each other and to the Soviet Union has been disbanded. Similarly, the Soviet Union itself seems to be in very real danger of dissolving into its various member republics.

It is these trends towards economic integration and disintegration that I want to focus on in the remainder of my paper. An important premise of my paper is that rather fundamental economic forces are behind an important part of the developments we are now witnessing, despite the obviously important political dimensions to them as well.

An Analytical Framework

Let me begin by returning to the statement I made in opening my paper. What the world has experienced over the period since the end of World War II is a gradual increase in the openness of national economies. International trade has grown faster than global GNP, and national economies have also become more thoroughly integrated by means of a rapidly growing international capital market. There is a tendency to describe these developments as a situation in which individual nation states are becoming increasingly dependent on trade and on the international capital market. However, a more useful, and in many respects a more insightful, way to view them is as an increase in the openness of national economies.

Open economies have some important distinctive features. Perhaps most important from the perspective of this paper is that as an economy becomes more open, it becomes increasingly beyond the reach of national economic policy. Perhaps U.S. experience with its agricultural policy is as good an example of this problem as one can cite. It isn't the case that the federal government hasn't been doing anything about agriculture. To the contrary, Treasury costs of the programs have been quite high in recent years. Yet despite these high costs there continue to be substantial problems in the agricultural sector. The problem is that forces from the international economy are simply swamping what the domestic policies can accommodate.

To be more specific, the emergence of the international capital market and the shift to flexible exchange rates means that even in economies as large as that of the United States, policy makers have lost control of both their interest rates and their exchange rates. The large rise in the value of the dollar in the first half of the 1980's, for example, was not due just to the contradictory monetary and fiscal policies this country was perusing, but also to the fact that Japan and the countries of Western Europe were pursuing policies that were just the opposite of ours.

Two things tend to happen as economies become more open. The first is that some part of economic policy making and implementation shift upward to the international level. When this happens, the policy becomes imbedded in the rules, codes, and disciplines of international institutions such as the GATT, or in the form of the instruments of economic integration such as we are now experiencing. Second, while this shift upward of some part of economic policy making and implementation is taking place, another part of policy making and implementation shifts downward to the state and local levels. This shift in policy making and implementation in these opposing directions thus amounts to a bifurcation of economic policy. It is something that is driven by underlying economic forces, even though there are important political dimensions to it.

A casual examination of experience in the United States and other countries suggests that examples of such shifts are all about us. In the case of the United States, economic policy making and implementation has shifted downward to the state and local level at a rapid pace at the same time that this country has signed a free trade agreement with Canada and shortly thereafter begun negotiations with Mexico to bring it into the agreement.

The shift downward in policy making and implementation has been prodigious in this country. State and local government have been growing rapidly. The staffs and budgets of state government have expanded, as have salaries at that level. And we have what would have been unheard of as recently as a decade ago - our representatives in Congress resigning their positions to be a candidate for Governor. They have figured out where the action is! At the same time, however, the signing of the Canada-United States Free Trade Agreement passed certain parts of economic policy making and implementation to the international level, where it is imbedded in the Agreement, with disputes resolved by an international commission.

Clearly, however, this is not just a phenomenon of the United States. The Brazilian Constitution, which was promulgated just a few years ago, institutionalized a great deal of policy making and implementation at the state and local level that was once held at the national level. (Notice that Brazil is a large country.) In contrast, the case of the European Community, the main shift is upward, with more of the policy now to be of an international kind. (Notice that Europe is made up of what are mostly small countries.)

Developments in Eastern Europe and in the Soviet Union also seem to be driven by the same sets of economic forces. What was once a hegemonic regime of economic policy has found itself under tremendous pressure to decentralize its policy making and implementation. The old economic unit was found to be no longer economically viable.

In trying to understand these trends a number of important questions arise. First, what was behind the original expansion of trade and of the international capital market which set these forces to work in the first place? The answer is that they have been driven by very significant technological breakthroughs. Among these are the significant breakthroughs in the transportation sector, both in terms of air and sea transportation, and the decline in the price of energy. The price of oil in real terms is now at as low a level as it has been since 1950. The second is a similar significant breakthrough in the communication sector, illustrated perhaps most importantly by the satellite communication systems. By lowering the real cost of transport and communication services, these two developments have enormously expanded the scope of markets.

Finally, there is the computer revolution. This development has contributed to the breakthrough in the communication sector. It has also made it possible to rapidly process large amounts of data and thus to make global trading and commerce a reality on a scale it was never possible in the past. In today's world one can conduct a capital market transaction almost any place in the world at almost any time of the day.

A second issue is the differentiation of the policies that shift to the international level from those that shift down to the state and local level. In general, the policies that shift up to the international level will be those that focus on product markets. Similarly, those that shift downward will be those that focus on resource problems and or that comprise incomes or welfare policy. These two shifts can both bring net benefits, and that is probably why they are taking place. As product market barriers are removed at the national level and shifted upward to the international level, trade liberalization takes place. In fact, I suspect that over the next ten years we are likely to see far more liberalization of trade by means of formal attempts at economic integration than by means of the

Negotiations of the GATT.

As policy shifts downward, on the other hand, it tends to become more differentiated towards the local resource base and towards incomes policy. This can make policy more efficient in attaining its goals, since it will be more closely adapted to local conditions. At the same time, however, the shift downward in policy making and implementation can lead to serious equity problems as more well-endowed regions can do more for their citizens than the less well-endowed. Such geographic differences in the availability of public goods can give rise to labor migration in search of desirable mixes of such goods.

Another important issue is just how far the bifurcation process is likely to go. At the one extreme one can imagine a completely integrated international economy, with only one set of "rules" and regulations for everybody. This would be the end of the nation state as we have known it, and would probably argue for a global political organization for rule making purposes. At the other extreme, we could imagine the re-emergence of something approximating the old city state, with each "city" made up of a major metropolitan area and its surrounding hinterlands. From that perspective we can imagine the United States ultimately breaking up in the same way as the Soviet Empire is breaking up, with "states" emerging around our major metropolitan areas.

It is not likely that either of these extremes is likely to emerge, although I believe it fair to say that we are likely to see, even in the next ten to twenty years, enormous realignments in political and economic configurations on the international scene. We are probably only at the beginning of what can be expected to be a very substantial process.

Fortunately, there are some pieces of analytical apparatus that can help us understand the kind of world we can expect to emerge in the future. The first is the insights offered by the theory of optimal currency areas. This body of theory might have a great deal to offer in defining the national "countries" of the future. As the members of the European Community are about to learn, once one establishes a unified currency area, an underlying political process is needed to manage it.

The theory of optimal currency areas, as articulated by Mundell, argues that the domain of the optimal area is determined in large part by two conflicting economic forces. On the one side, the optimal currency area is defined in terms of a region, with the region defined as a geographic area in which factor mobility is greater within than is factor mobility between the region and the rest of the world.

Factor mobility is, of course, a relative concept. What usually imposes limits on it in the real world are national political boundaries. In fact, in the real world currencies are mainly expressions of national sovereignty. However, in today's world national sovereignty or ethnic identity are increasingly less important as barriers to resource mobility. This has been increasingly true in the case of capital, but even the barriers to the migration of labor are becoming increasingly more difficult to enforce, as evidenced by the migratory flows from Mexico and Latin America to the United States and by the growing concerns about potential migrations from Eastern and Central European countries to those of Western Europe.

Let's therefore suppose, for the purposes of analysis, that all national boundaries are erased and we are free to establish currency areas according to some other criteria. One possible and widely accepted criteria would be to impose internal economic stability as the criterion. That is, the criterion that the region (or country) be defined as one in which the economy can be managed so as to have no inflation nor no unemployment. Mundell (1961) notes that the greater is the number of separate currency areas in the world, the more successfully will these goals be attained.

The difficulty with this outcome is that it seems to imply that regions ought to be defined so narrowly that every minor pocket of unemployment arising from labor immobility would be counted as a separate region, each of which would have a separate currency. What, then, would impose a limit on the degree of Balkanization? Mundell argues that it would be the transactions costs associated with the maintenance of many currency areas. The point is that money as a medium of exchange is less useful if there are many currencies. Transactions costs will loom especially large under either unconvertibility or flexible exchange rates, with the result that the convenience value of money restricts the optimum number of currencies.[2]

McKinnon (1963) extends this theory on optimal currency areas by noting that in an open economy the maintenance of balanced international payments has to be added to the factors of domestic price stability and unemployment as a criterion guiding economic policy. The issue in this case is the trade-off between the effectiveness of flexible exchange rates in maintaining the external balance versus stability in the domestic price level as one moves across the spectrum from closed to more open economies.

This is about as far as the theory of optimal currency areas goes. (For additional material on optimal currency areas, see Tower and Willett, 1976.) This has not been a high priority issue among those interested in the monetary aspects of international trade because in the past the tendency has been to take existing national boundaries as sacrosanct. This may be changing, as the events in Yugoslavia, in other countries of Eastern and Central Europe, and in the Soviet Union illustrate.

The dollarization of countries in Latin America and other parts of the world when domestic monetary and fiscal policies get out of control, and the seeming economic irrationality of national boundaries in Africa, which were originally defined along the borders of colonialist enclaves, all serve to bring these issues to the fore. With the growing mobility of both capital and labor across what were previously national boundaries, the issue of the optimal economic size for a country may increasingly come to be an important policy issue.

Recent developments in the theory of economic geography also offer some important insights into the size and scope of national countries, especially as one considers the emergence of city-states as one possible limit to the degree of Balkanization that might emerge in response to the shift to optimal currency areas. Krugman (1991) develops a simple model that shows how a country can endogenously become differentiated into an industrialized "core" and an agricultural "periphery." This paper is important because it helps to explain one of the most widespread occurrences in the international economy - the tendency of economic activity to congregate into large urban-industrial agglomerations, with a drainage of people from the rural hinterlands.

In the Krugman model, manufacturing firms tend to locate in the region with the larger demand, and in order to realize scale economies while minimizing transportation costs. The location of demand itself, however, depends on the distribution of manufacturing activities. This helps explain why parts of a country, or particular cities, which gain an initial impulse towards industrialization tend to maintain their leadership position. The emergence of a core-periphery pattern, in the Krugman model, depends on transportation costs, economies of scale, and the share of manufacturing in national income.

In assessing the empirical relevance of the Krugman model, one needs to keep in mind that much of the economic agglomeration one sees around the world is due to large implicit subsidies which favor this tendency, and the general tendency of governments to underinvest in the physical infrastructure in rural areas. In commenting on an earlier version of this paper, Gale Johnson noted that Taiwan has avoided such agglomerations in large part because it has invested heavily in the rural infrastructure for national security reasons.

Whether such "core" - "periphery" economies should eventually emerge into a "country" whose sovereignty is defined by a currency would also seem to depend on a number of other issues. The first is whether it tends to take on a particular cultural identity whose members decide is worth preserving. The second is the extent to which such a complex should be self-sufficient in an economic sense. If it should evolve towards self-sufficiency, then the transaction costs involved in relating to other currency areas would be minimal, and the emergence of a "national" identity would tend to dominate, tempered, of course, by the extent to which modern communications keep a common and unique culture from emerging.

What can we say about the tendency towards self-sufficiency? Yang and Borland (1991) provide insights into this question by addressing the issue of specialization with a dynamic general equilibrium model. These authors build on recent work which allows the sources of economic growth to be endogenously determined. They note that by formalizing a trade-off between the allocation of resources to current consumption, the production of knowledge, and investment in physical capital, a number of studies have established a role for endogenous accumulation in generating economic growth. They cite as examples the work of Romer (1986a, 1989), Lucas (1988), and Aghion and Howitt (1990), in which the rate of growth depends on the endogenous accumulation of human capital and technical change; and additional work by Romer (1986b) and by Grossman and Helpman (1989) in which endogenous increases in the number of intermediate inputs (which raise productivity in the production of final goods) explain economic growth.

Yang and Borland note that "by interpreting an expanding range of intermediate inputs to represent a greater division of labor, these latter studies have initiated a formal analysis of Adam Smith's (1776) and Allyn Young's (1928) proposition that increases in the division of labor will create economic growth. However, division of labor is based not only on an expanding range of intermediate inputs but also on increases in the level of specialization of individual agents." In their paper Yang and Borland investigate this second aspect of the division of labor and take up the issue of the relationship between the evolution of the level of specialization and economic growth.

Contrary to models which exogenously fix the level of specialization of an individual agent, the Yang-Borland model can explain why an economy evolves from autarky (each person self-produces all the goods he or she wants) to a state in which there is a highly developed division of labor between individuals in a firm, between firms, and between countries. Moreover, the evolution of the division of labor they examine enlarges the extent of the market, speeds up the accumulation of human capital, and raises trade dependence and endogenous comparative advantage. In their view, as long as the division of labor has evolved to a sufficient degree and the potential for further division of labor remains, per capita income will continue to increase over time.

What we witness in the international economy is an increasing degree of specialization and division of labor. This is evidenced in the growth of trade itself, relative to global GNP, but also in the growing importance of international industries, with the parts for a final product produced in a wide variety of countries and resulting in a growing amount of intrafirm trade across national boundaries.

It would seem that this process will continue and even accelerate into the future, on the grounds of both Krugman's model and that of Yang and Borland. The drive for increases in per capita income is a strong drive, and the potential for continued economic growth continues to expand as additions are made to the stock of knowledge and as general education spreads around the world. This suggests that what the world is evolving towards is a one-currency world which is highly integrated through international trade, international capital markets, and international migration of labor. Moreover, national economies, however they are defined, can be expected to become increasingly open.

Tamura (1991) gives us a model which explains why we can expect per capita incomes to converge in such an increasingly open international economy. Briefly, his model explains how a spillover effect of human capital in the investment technology provides human agents with below-average human capital endowments with a higher rate of return on investment than that received by agents with above-average human capital endowments. Thus below-average human capital agents tend to grow faster than above-average human capital agents. This model explains income convergence of the developed world, regional income convergence within the United States, and intergenerational mobility. It also suggests that optimal currency area issues may not be a major factor influencing the configuration of the future international economy.

Implications

The above discussion has a number of important implications for economic policy and for educational, research, and extension programs. In the first place, it suggests that we can expect general economic integration to continue to spread, and perhaps at a faster pace than in the past. That means that "national" or regional economies can be expected to become more open over time, and that the bifurcation of economic policy making and implementation will continue into the foreseeable future.

Such a development has a number of important implications for institutional design. For one thing, it means that we need to give more attention to the design of more effective and efficient international institutions. High on the priority list should be a reform of international monetary arrangements. (For detail on how these might be redesigned, see Schuh, 1986.) In this context it should be noted that a generalized flexible exchange rate system with neutral monetary and fiscal policies will be equivalent to a one-currency system without the elimination of national currencies.

Highest on the priority list should be the establishment of generalized floating, except in those cases in which it is decided to go to a single-currency system, as appears to be likely in the case of the European Community. Much concern is expressed about the instability of exchange rates, with many people suggesting the return to a system of fixed exchange rates as the means to avoid that instability. In my view that misses the point. Given the size of international financial flows, the world could not go back to a system of fixed exchange rates even if it wanted to. Moreover, the issue is not short-term instability, as often seems to be implied. The basic instability problem is the long swings in the values of real exchange rates the present system is producing. That seems to be generated more by the present fixity in the system than by the flexibility. With generalized floating, adjustments to external shocks would begin immediately, rather than to be delayed until pressures had built up to irresistible levels. Moreover, adjustments would be widespread in the economy, and thus the swings in the exchange rates necessary to restore equilibrium would in general be modest.

Similarly, a great deal of design work is needed on state and local institutions. This may, in fact, be the most pressing need. Along with that endeavor, much work is needed to design a fiscal system which captures resources nationally and transfers an important share of the revenue to the state and local level. The design of such a system is not as easy as it might seem, for when spending is disconnected from taxing, the tendency is to convert the system into a spending machine. The state of Minnesota, for example, has discovered this problem to its horror with its state tax and local government aid systems.

More generally, there are serious questions as to whether our present institutional arrangements are up to handling the bifurcation of economic policy. Public goods in the form of roads, communication systems, education, hospitals, environmental "purity," and so on appear to be increasingly important as the means of attracting economic activity. Equality of opportunity for the sexes means that labor markets are more important in determining where households locate than they have been in the past. Hence, instruments of public policy that address these types of goods are becoming increasingly important.

These issues are of the highest importance to agriculture, both at the international and at the state and local level. At the international level, the failure to reform international monetary arrangements has contributed to instability in commodity markets, and to the masking of underlying comparative advantage as a consequence of large swings in real exchange rates. These large swings also contribute to protectionist pressures, and make the liberalization of trade in agricultural commodities more difficult.

The development of new institutional arrangements at the state and local level is also especially important for agriculture. Income and adjustment problems will need to be addressed increasingly at this level, as will environmental and other resource based problems. In the developing countries, locally funded research and education systems will be increasingly important.

At the same time, the generation of public revenue to support these public goods is a major challenge. The widespread financial difficulties state-supported public universities in this country are now facing seem to be related to the failure of local fiscal systems to keep up with their ever larger responsibilities. The design of new institutional arrangements is an imperative, not only at the state and local level, but at the national and international level as well.

Concluding Comments

The global economy experienced a period of unprecedented economic growth in the late 1960's and through the 1970's, the period of what has been described as the golden era of trade. Even the developing countries experienced the highest rates of economic growth in their history during this period, even though some are poorer today than they were at the end of the 1970's.

What we are experiencing, despite the difficulties of the 1980's, are attempts by countries to gain from trade. That is, to gain from specialization and the international division of labor. Countries are becoming increasingly dependent on the implicit social contract of the world market. Whether the international economy and political system will become more or less stable as we move to the future will depend importantly on how well we manage this common public good. But how well we manage that public good will also depend in an important way on how well we manage the institutional design questions in our domestic economies.

Footnotes

1. The system is bloc-floating because a fairly large number of currencies are still tied to one of the major currencies, which float relative to each other.

2. Additional factors that inhibit the creation of an arbitrarily large number of currency areas, according to Mundell, include the need for a robust foreign exchange market and a currency area sufficiently large that workers accept reductions in their real wage by means of a change in currency values rather than through changes in nominal wages.

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