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ECONOMICS AND INTERNATIONAL RELATIONS: A CONCEPTUAL FRAMEWORK*

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> The world which is rising into existence is still half encumbered by the remains of the world which is waning into decay; and amidst the vast perplexity of human affairs, none can say how much of ancient institutions and former manners will remain, or how much will completely disappear.
>
> Alexis de Tocqueville

Economics has experienced a number of mini-revolutions in the post-World War II period. We have absorbed the revolution of mathematics and quantitative techniques. Capital theory has been transformed as we broadened our concept of capital to include human capital,[1/] with all the new insights this more inclusive concept has provided to the theory of income distribution and the theory of economic development. We have revitalized our insights into the family and the household with the new household economics,[2/] rooted in the insights of Becker and Lancaster but going back at least to Margaret Reid. We are increasingly constructing a micro-economic base for our macro-economic theory. We have returned to an earlier day and reincorporated the political into economy. And we finally are beginning to recognize that if economic entities are really as rational as we assume them

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to be, they create serious problems for policy-makers - a fact pointedly brought to our attention by our rational expectations colleagues (Lucas and Sargent).

An important challenge we still have before us, however, is to understand the emerging world socio-economic-political system and to devise the institutions that can make for a more orderly world system. The theme of my paper is that within the corpus of economics we have the conceptual and quantitative tools to understand this complex new world and to design a more orderly, efficient, and equitable international economic system. Moreover, given the importance of agriculture in the world economy, the likelihood that food and agricultural issues will dominate the international dialogue in the decades ahead (Schuh, 1976; and Warley, 1976), and our own proclivity to address applied problems, agricultural economists in particular have important contributions to make in expanding that stock of knowledge.

For reasons that are varied and complex, U.S. foreign policy has been in disarray for at least a decade. Part of this disarray is due to the fact that our political and economic power has clearly declined as other nation states have grown at a faster rate economically than have we. Another part is probably due to the fact that at home our domestic institutions either were not designed for the kind of world into which we are emerging, or they are evolving in directions that make it difficult if not impossible for us to deal with the kind of world that is emerging. Perhaps

uniquely among the democratic countries of the world, our President does not speak for a political party capable of being rallied to provide legislative support for his foreign policy initiatives - a phenomenon which baffles other countries. Within the Federal bureaucracy there is a proliferation of agencies with responsibilities and strong desires to play a role in foreign affairs. Moreover, the Executive Branch no longer makes foreign policy. It is made increasingly by a Congress that may be in opposition to the President, by the public through television and the newspapers, and even the judiciary, as illustrated by the challenge in the courts to our realignment of policy vis-a-vis Mainland China and Taiwan.

The complex new world which is emerging poses many challenges to social scientists. U.S. social scientists in particular should be challenged by the difficulties and problems that our nation faces as it looks to the decades ahead. We should be challenged by the new complexity that cries out to be understood. We should also be challenged by the opportunities to create new institutions that can lead to a peaceful and prosperous world.

There are two maintained hypotheses in my paper. The first is that - contrary to popular belief - the world is not really changing in ways that are increasingly beyond our capacity to manage or control. It only appears to be out of control because we have not generated the knowledge that would enable us to understand it and to manage it with wisdom and insight rather than with the use of brute political power.

The second maintained hypothesis is that many of the problems of international relations are fundamentally problems of economic structure and economic relations. Therefore, the contribution of economists is to assist policy-makers in taking a strategic view of the world - to identify with more clarity where our strategic interests lie and how we might maximize our economic position as a basis for developing political power. Needless to say, economists to date have hardly addressed such questions. Equally as important, the issues before us are more than issues of trade and trade policy - important as those issues may be in their own right.

In my remarks today I will attempt to develop the elements of a conceptual framework that can serve as a guide in understanding the economic dimension of our international relations and that can serve as a basis for structuring a more rational international economic policy. The intellectual foundations for a strategic conception of the world economy would appear to have at least four pillars: (1) development theory - especially that variant that is rooted in the theory of human capital and the new household economics; (2) the new institutional economics; (3) neoclassical trade theory; and (4) the theory of endogenous governmental behavior.

At least two of these bodies of theory provide us with a secular perspective on the evolution of particular economies, their institutions, and the institutions which link them together. The third provides a framework for understanding how an economy such as the U.S. relates to other

national and supra-national economies through trade and the international capital markets. The fourth provides a basis for understanding the behavior of governments, major elements in the international economy.

Before turning to a discussion of these four components of a proposed conceptual framework, it is worth emphasizing how little attention economists trained in the neoclassical tradition have given to the issues of longer-term growth and the relationships of one country to another. Economists and other social scientists from a different tradition, however, have long given greater attention to these issues. The theory of imperialism rooted in the world of Schumpeter and Baran and Sweezy is an important example, as is the dependency theory of Frank and Cockraft, and Frank and Johnson. Dependency theory has fallen into disrepute, of course, as growth rates in many countries of the Periphery have outpaced those in the Center.[3/]

Contrary to what past experience would suggest, however, modern neoclassical economics has a great deal to offer as a conceptual framework for understanding the economic dimension of international relations and as a guide to policy. Let me now turn to the various components of that theory.

Development Theory

The contribution of development theory is the insights it offers to the changes that can be expected in individual economies as they undergo economic development. These

insights have to do with changes in the sectoral composition of output of individual countries and in turn with the international division of labor. They have to do with the international distribution of income. And they have to do with the patterns of trade that are likely to emerge.

Economists have long had notions of how the sectoral composition of output for an individual economy should evolve as it develops. List and others, for example, noted that as per capita incomes rose, labor would be transferred from the agricultural to the industrial sector. Johnston has noted that this tendency is one of the few universal constants one can identify as one looks across the range of countries in the world. This simple notion can also be inverted and used as a very limited theory of development, with the obvious policy prescription that labor be removed from the low productivity agricultural sector and transferred to the high productivity industrial sector as a means of obtaining economic growth.

Baumol extended this idea to a classic model of stagnation by noting that as development proceeds beyond the industrial state, more and more resources are transferred into the service sector. Since he postulates that possibilities of productivity growth in the service sector are limited, changes in the sectoral composition of output as growth proceeds lead to stagnation. The critical element in this theory is that labor shifts from being a means of

production to becoming both the means and the end of production. Examples include the shift of labor from the assembly line to such activities as the performing arts, teaching, and other service activities. All of the latter are activities that typically expand as a country develops. If the demand for such activities should be relatively price inelastic and they should have a positive income elasticity of demand, the composition of the economy will shift towards them as the economy expands and productivity - and with it per capita incomes - will grow more slowly and ultimately stagnate.

The growing importance of service activities is often given as an explanation for the decline in productivity growth in the U.S. economy. Both these explanations and the perspective offered by Baumol fail to recognize the substitution possibilities offered by videotape and electronic sound systems, and the potential increases in productivity in the service sectors offered by the revolution in computer technology and the technological advances in the communication sector.

The Baumol perspective is clearly in the tradition of the early English economists. It is not a pessimistic perspective, however, since equilibrium comes at high per capita income levels. The more recent studies using macrosystem models (Forrester and Meadows, et al) are more directly in the early classical tradition, however in that they point to

an equilibrium that is basically a consequence of increases in the price of the services of natural resources relative to capital and labor (wages).

Professor Schultz (1974a) has suggested a somewhat different theory of equilibrium for the developing economy, but one that is still somewhat consistent with the Baumol perspective. Basing his ideas on Becker's allocation of time model and the new household economics, Schultz argues that the ultimate constraint to development is the limitation of time that a 24-hour day puts on the development process - time to consume the goods and services that are produced in the household and in the market place. Contrary to Baumol, however, Schultz stands the classical world on its head. The ultimate constraint to development comes from limitations on time for consumption - a constraint within the household, and not from a limitation on resources or rising costs in production. In keeping with Baumol, however, the Schultz equilibrium is at a high income level. Moreover, this theory is richer since by including children as consumption goods it includes a population equilbrium as well as an income equilibrium.

Nerlove, although obviously in the Schultz tradition, provides a somewhat different perspective. He argues that productivity in the household, where both production and consumption take place, can be raised on a continual basis. More specifically, given that human capital is one of the

main outputs of the household, further investments in human capital actually increase the efficiency with which human capital can be produced. Hence, there is no reason to expect there to be an equilibrium level of per capita incomes or population.[4/]

The insight that comes from this developmental perspective is that the sectoral composition of output does change as development proceeds. Moreover, the changes that occur do so in response to the rising value of human time, which affects not only the structure of demand but the economic activities that are viable as an economy develops. Increases in per capita income are the essence of economic growth and development. But increases in per capita incomes lead to increases in the wage rate or the price per unit of human time as an input. The latter is significant for production both within the household and in the market place.

With capital accumulation, the industrial sector of an economy can expand relatively easily so long as labor can be released from the agricultural sector at approximately a constant supply price. As this process continues, however, the wage rate will rise and the country will lose its comparative advantage in labor-intensive manufactured products. The industrial sector will then decline and the service and high technology sector will expand. Hence, industrialization is not the last stage of economic development; it is only a transition phase to a high-technology economy.

Of course, the increases in per capita income shift the structure of demand in this same direction - from agricultural output, to industrial output, to the demand for services and technology-intensive consumption goods. The road for the economy as a whole is not completely predictable, however, and one cannot be certain about how the sectoral composition of output will change or what the trade implications will be. U.S. agriculture, for example, has become a high technology industry, with the result that it is an important export sector for the U.S. even at a high level of development.[5/] Moreover, if capital can be substituted for labor, industrial activities may remain important as the wage rate rises, as the Japanese have demonstrated in the case of the automobile industry.

These caveats aside, economic development is seen to exert a powerful influence on the sectoral composition of output and on the structure of demand. This in turn has important trade implications, and in turn important implications for international economic relationships. The structure of demand for raw materials will change as development proceeds, as will the structural composition of aggregate demand. Both of these changes have important implications in terms of the particular countries that become important to the U.S. (or any other country, for that matter) in an international economic sense.

The U.S. may have a strategic interest in particular countries as a source of raw materials. Similarly, it may have a strategic interest in certain countries because they potentially are important markets for our output. And we may have still other strategic interests that have to do with particular input services it might be advantageous for us to sell at particular stages of our development - raw material, labor, physical capital, and human capital.

At our present juncture we find ourselves looking backward and wanting to reindustrialize America. Even granted that there are strategic implications involved in an international division of labor, it surely is not in our best interest to turn back to a sectoral composition of output that was appropriate for the past. We would be better advised to identify and promote those activities in which we have a comparative advantage, which at this juncture in our development are high-technology, human capital-intensive industries.

The important point in this context is that the very forces of economic development, with its associated rising value of human time, drives the economy to a human capital-intensive configuration.[6/] To fail to capitalize on that configuration is to fail to capitalize on one's comparative advantage.

Another insight from development theory and the theory of human capital deals with population growth and the quality

of the population, both of which are important in a strategic sense. The human capital paradigm on population growth argues that children, especially high-quality children, are time-intensive goods to produce, and that as per capita incomes rise there is a strong quality component to the demand for children. This means that quality of children is substituted for quantity of children as development proceeds, and that the rising price of time associated with development exerts strong pressures for declines in fertility rates. Whether this eventually leads to a population equilibrium or merely a decline in the population growth rate is still an open and probably empirical question.[7/]

The dynamics of population growth have other dimensions, of course, many of which the United States will be facing in the next couple of decades. In our case, for example, we can not only expect to see a low population growth rate, but an aging of the population as well. We may well see a time when a predominant share of our population is elderly. This obviously has very important implications for the extent to which we want to depend on a labor-intensive industrial sector, or whether it would be in our best interests to import such goods. It also has important implications for the view we take on immigration policy. If we really do need to maintain certain labor-intensive sectors for national security reasons, we may be much more willing to accept foreign immigrants in the future.

Finally, the human capital perspective changes the view we take about size of population. Historically, size of population has been an important dimension to the political and economic power that countries had on the international scene. It still concerns those who are concerned with the large populations of countries such as China. But the human capital perspective enjoins us to view labor in both a qualitative and quantitative dimension. Hence, numbers are only part of the story, and probably not the most important. Knowledge and the quality of the labor force become critical elements in the power of a country. They should receive attention both in assessing the strength and power of other countries, and in assessing our own strength.

The New Institutional Economics

A body of literature has now developed from somewhat diverse sources which attempts to integrate the perspectives offered by the traditional institutional economics and modern neoclassical economics.[8/] This new perspective is described as the new institutional economics.[9/] Contrary to neoclassical economics it has disequilibrium as an important characteristic, and assumes that institutions and institutional change can be explained by past and present economic forces. This obviously has great import for understanding the development of particular economies, and for understanding the institutional means by which individual countries relate to each other.

The institutional economics of John R. Commons was used to explain the evolution of economies and to analyze the effects of institutions on resource allocation and the distribution of income. The evolution of institutions themselves was explained in historical terms, with little room given to economic forces. Much of modern neoclassical economics, on the other hand, has pretended that institutions do not exist. While recognizing that institutional changes might be important, there is little in the theory that provides insight into how institutions might change, or how they might interact with economic forces.

An institution in the present context is a behavioral rule. Our interest, of course, is in those institutions that perform economic functions. These include institutions which govern control over resources and assets (such as private property rights), those that establish the framework for the production and distribution of public goods or services (educational institutions, research organizations, judicial arrangements), and those which prescribe how countries relate to each other in conducting their economic intercourse (trade codes, for example).

The contribution of the new institutional economics in developing a longer-term, strategic conception of the world economy is in understanding how institutions influence the growth path of individual countries, and in how the pace and character of development in turn influences those institutions.

It provides insights into how international institutions might evolve over time, while providing guidance on how those institutions might be better designed. And it provides some basis for resolving the North-South debate which currently disturbs relations between the U.S. and the less-developed countries.

One of the primary concerns of this paradigm is to explain nonmarket resource allocation, an obviously important issue. The richness of the new perspective can be seen by the range of problems to which it has provided important insights. For example, Cheung, following Coase, argued that under competitive conditions private contracting between landowner and tenant would lead to the same resource allocation as if there had been competitive factor markets for labor and/or land. This perspective led to a completely different approach to land tenure arrangements, and to property rights in general.

Hayami and Ruttan's work on induced technical change pointed out how economic forces induced institutional change which guided the process of technological change onto an efficient growth path. The important insights from this research have generated additional work on institutions and institutional change, with the emphasis on designing efficient institutions. (See Binswanger, et. al., and Ruttan, forthcoming.) Ruttan makes the important point that social

scientists should produce institutional innovations in the same way that biological and physical scientists produce technological innovations, and that their contribution to expanded income streams for society might be just as great in this role as is the contribution of the biological and physical scientist.

Schultz (1968) sets out to explain those changes in institutions that occur in response to the dynamics of economic growth. He views institutions as suppliers of services which have economic value and argues, among other things, that the rise in economic value of man as development proceeds compells society to establish additional rights favoring the human agent. Hence, the human agent becomes more important with secular increases in per capita income.

North and Davis, and North and Thomas provide new historical interpretations of the development of the U.S. economy and of the Western world as a whole. Institutions and induced institutional change play important roles in these new interpretations. Roumasset specifies an efficiency framework and uses it to explain patterns in institutional arrangements found in agricultural production.

The new institutional economics has a number of implications for a strategic conception of the world economy. In the first place it should make us more sensitive to differences in institutional arrangements among countries,

while providing more insight into the rationale for the differences that exist. In terms of understanding other countries and their stage of development, these insights can be very important.

Second, understanding the interactions between economic forces and institutions and institutional change can provide important insights into the particular development trajectory that other countries might take. A number of relatively simple examples come to mind. For example, institutional arrangements will determine what share of investment resources are channeled to the formation of human capital and what particular form that human capital will take. Important implications for immigration and trade policy logically follow. Institutional arrangements also determine to what extent externalities--positive or negative--are internalized, with obvious implications for the sectoral composition of output and the proportions in which resources are used. And institutional arrangements will determine whether the development process is focused onto an efficient growth path, or on to a non-efficient growth path.

An especially important class of problems under this latter rubric has to do with the future evolution of the centrally planned economies. Marxian thought may be inverted: the centrally-planned economies may have the seeds of their own self-destruction built into their system. The internal

contradiction of the centrally planned economies may be rooted in the imperative to invest in human capital as a means to keep up with the more decentralized industrial countries of the West. Such investments may lead the population of these economies to have different perspectives on their own institutions. Alternatively, the failure to permit the appropriate institutional changes to take place may condemn the centrally planned economies to a slow-growth trajectory.

The new institutional economics also offers insights into the shape that economic and political unions might take, while serving as a guide to how appropriate institutions to govern those unions might be designed. Economic unions typically take place when there are gains from trade that can be internalized within a partial or complete political unification. Recognition of this explains why economic and political union often goes only so far and then stops. When attempting to assess the future strategic importance of a particular economic and political bloc, this insight has important implications.

A different perspective on such problems offers an additional set of insights. A superficial look at the Mexican and U.S. economies suggest that there is sufficient complementarity in our respective resource bases to make a case for economic union. Mexico has an abundance of oil and a rapidly growing, young, and unskilled labor force. The U.S.

is short on oil and has a human capital-abundant, aging, and slow growing population. The disparities in economic and political power make economic and political union difficult, however. Insights from the new institutional economics should provide important guidelines as to how to design the institutions that will make economic and political union possible - with enormous strategic implications to both the United States and to the rest of the world.

A proposition from trade theory offers another example of the potential role of the new institutional economics. The theory of optimal currency areas provides an explanation for why important regions of individual countries have chronically lagged behind other regions of a national economy. Leff, for example, has argued that had the Northeast of Brazil been a separate country, with a separate currency, it might well not have lagged behind the rest of Brazil. The same probably applies to the U.S. South, and to the South of Italy.

Political pressures can build up in particular regions so that they do break away from the central government. More generally, cases where such exchange rate disparities are likely to arise will be poor candidates for economic and political union. But if one is armed with the insights of both the theory of optimal currency areas and the new institutional economics, he might be able to design institutional arrangements such as multiple exchange rates that would lead to stable economic and political arrangements.

A couple of other institutional design questions are apparent. In the tradition of Ruttan and the induced innovation hypothesis, what institutions are needed and what source of support can be found for the institutions to do the research on and perform the educational missions pertinent to the international socio-economic-political system? In a very real sense national intelligence agencies should be doing some of the research on these issues. But to leave such research to the intelligence agencies will be inadequate. As in other areas, multiple research and education institutions are needed. Moreover, the issues are of national and international interest, not just state or local interest.

A second set of institutional design questions has to do with the international institutions needed to deal with a rapidly changing world economy. The world has become increasingly interdependent. The exchange rate regime has changed, an effective international capital market has emerged, and trade patterns are changing dramatically. All of this is taking place in a world of ever-widening differences in per capita income. Comparative advantage is also shifting rapidly among countries. Such rapid shifts make adjustment more difficult and create political problems.

The end of World War II saw a burst of creativity in terms of new international institutions such as the GATT and the Bretton-Woods conventions. Unfortunately, most of those institutions were designed by the advanced industrial

countries, and to serve the advanced countries. Moreover, they were predicated for the most part on a fixed exchange rate regime.

Today, international political and economic power has changed very significantly. The international capital market has grown in importance, while the relative importance of concessional foreign aid and the international migration of labor has declined. The social, economic, and political world is just very different than it was several decades, or even one decade ago.

The southern participants of the North-South debate have been the loudest and most articulate proponents of institutional change in the international community. But even in the United States and other industrialized countries there is generalized dissatisfaction with the arrangements for international economic and political intercourse.

The questions here are legion. What institutions are needed to manage the international monetary system? Of what value is GATT when most of the less-developed countries are not members despite their growing importance in international trade? How can these other countries be brought in? What institutions can be developed to facilitate trade adjustment and thus provide for more rapid trade liberalization?

Neoclassical Trade Theory

The neoclassical theory of international trade is not a particularly powerful predictor of trade flows in the complex world of today. However, recent extensions of the theory and growing empirical research which provides a stronger description of the parameters governing trade provide the elements of a framework which enable us to understand trade patterns with somewhat greater assurance than even a decade ago.

Despite recent contributions, trade theory is still for the most part cast in a comparative cost framework. Perhaps the most widely used version is the factor proportions explanation of trade as developed by Heckscher, Ohlin and Samuelson. The standard version of this theory is expressed as a 2x2x2 general equilibrium model. It assumes that production functions are identical across countries and first-order homogeneous, and that all factors of production can be translated into efficiency units of capital and labor. It assumes that capital is not mobile internationally. It also assumes there are no factor-intensity reversals and ignores goods and factor-market distortions. Finally, it is a static theory, and for the most part assumes "similar" preference structures in both countries.

Empirical evidence and common observation question most of these assumptions. In the first place, it has long been recognized that developing countries have

large agricultural sectors and that trade in primary commodities cannot be explained by the countries' endowments of labor and capital alone. Agricultural production requires the services of land as an input, in addition to labor and capital, and this means that the simple 2x2x2 model is not very helpful in explaining patterns of agricultural trade. Second, production technology is generally not perfectly mobile across national boundaries, especially in the case of agriculture, where technology tends to be relatively location specific. This challenges the common production function assumption.

Third, a rather large and efficient international market for capital has evolved, represented in part by the transnational firms which create so much controversy. Fourth, factor-intensity reversals are fairly common, especially in agriculture.[10/] At low wage-rental ratios agriculture tends to be labor-intensive relative to industry, and at high wage-rental ratios agriculture is capital-intensive relative to industry. For example, agricultural production in the United States tends to be more capital intensive than industrial production, but in Southeast Asia it is more labor-intensive. The existence of different elasticities of substitution in the two sectors is sufficient to ensure that a factor-intensity reversal will occur.

Fifth, goods and factor-market distortions are legion in most countries. Governments intervene in the

economy in various ways, often with the specific objective of interfacing with the free play of market forces. Sixth, the risk and uncertainty associated with trade is all too obvious to depend primarily on static models. And finally, Valavanis-Vail demonstrated long ago that demand can in principle reverse a country's trade flows from that predicted by a relative-factor-scarcity-based theory of comparative advantage.

Despite these serious limitations to the standard theory, considerable progress has been made in recent years in extending this framework to provide more realistic and useful models to understand trade flows. Considerations of demand and product differentiation have been given increased attention in recent studies.[11/] The issue of imperfect product markets has been addressed and attempts made to understand trade flows in this broader context.[12/] Helpman and Razin and Jabara and Thompson have demonstrated that if policy-makers are risk averse, the expected-utility maximizing output bundle is not that produced under free trade, even after correcting for domestic distortions. Instead, expected utility is maximized at that output bundle which is produced when domestic prices are distorted away from the international terms of trade by the subjective cost associated with the international price uncertainty.

Schmitz and others have extended the simple trade model to account for trade in intermediate goods. Jones has incorporated international capital movements into the theory of tariffs and trade. And the literature on the transnational corporation is burgeoning.

Krueger has examined the possible impact of goods and factor-market distortions on trade patterns.[13/] To do this she found that a meaningful interpretation of the Heckscher-Ohlin-Samuelson model must lie within the manufacturing sector in a world of many commodities and many countries. Once this broader perspective was taken, she found that the predictions of the theory were more likely borne out in patterns of specialization within manufacturing than in comparisons of factor proportions in exporting and import-competing industries. Moreover, she found that the relevant factor endowments were those within manufacturing and not those of the entire country.

From our perspective, perhaps the most significant extensions of the theory and in trade modeling have been the progress made in taking account of differences in human capital variables across countries. Kenen's contributions (1965, 1968, 1970) have been especially important in this context, but the work of Keesing (1965, 1966, 1968a, 1968b, 1974) Baldwin, Bharadawaj and Bhagwati, and Stern and Maskus is also important. All of the empirical studies cited show an important role for human capital variables in explaining trade patterns.

Valentini and Schuh have argued that the identical technology assumption of the Heckscher-Ohlin-Samuelson trade model can be salvaged in the case of agriculture if one uses the metaproduction function of Hayami and Ruttan in place of the conventional production function. The Hayami-Ruttan framework also provides an explanation

for the scarce-factor-saving bias which is observed in agricultural technology across countries. The Valentini-Schuh model specifies a separable production function as a way of taking account of factor-biases in the technology. This provides a more realistic model than Jones' three-factor model, which has the disadvantage of assuming that each sector uses only two inputs, despite the presence of three inputs in the model. Our statistical tests show that the Hayami-Ruttan human capital variables have a strong influence on trade patterns.

A final dimension to the relationships among countries that trade theory can illuminate is the issue of who gains from trade and what are the sizes of these gains. Considerable controversy still rages over this issue. Neoclassical economists tend to talk about the gains from trade and implicitly assume them to be large. Opponents of neoclassical economics and of free trade policy either appeal to dependency theory (cited earlier) or unequal exchange (Arghiri), both of which imply that one trading partner gains at the expense of another. Proponents of the latter view argue that shifts in the terms of trade are of major significance in understanding who benefits and who loses from trade. Proponents of the neoclassical view argue that shifts in the terms of trade reflect changes in technology and quality of products, and are prone to argue that changes in the terms of trade are generally of less significance than proponents of the opposing view give them.

Neither side in this debate has given sufficient attention to the fact that the gains and losses from economic intercourse are determined by developments on both the trade and capital accounts. Brandao has taken a fairly simple trade model and derived the welfare function for an individual country. He finds that whether a country gains or loses from trade is determined not only by the terms on which exports and imports are exchanged, but also by the terms on which capital is exchanged as well as a host of parameters for the "trading" countries. This model was tested in only a preliminary way, but it showed that the gains or losses through the capital market for a country such as Brazil could outweigh the gains or losses from shifts in the terms of trade.

The new perspective that is emerging from modern trade theory provides important insights that can serve as a basis for determining foreign policy, and which serves as an important field of economic research. First, our international relations ought to be strongly influenced by the directions in which trade flows are taking place and in which investment funds are flowing. Surprisingly, little attention has been given by economists to identifying the locus of comparative advantage and how it might be shifting. U.S. agricultural trade, for example, has shifted strongly toward the centrally planned and less developed countries. Yet our international posture hardly reflects this shift, nor does the state of our knowledge about the countries involved.[14/]

Within the less developed countries, our exports are growing most rapidly to the middle-income countries that are experiencing very rapid growth in per capita income. This points up the importance of economic development in those countries as the source of expanding markets for our exports, and emphasizes the important link between economic development and trade patterns.

Similarly, we have done little to evaluate where the marginal productivity of capital might be highest for international investment. Naively, Congress mandated some years ago that our concessional assistance had to be channeled to the poorest of the poor.[15/] We abandoned the middle-income countries, many of which were making remarkable progress on the road to economic development. How much world economic growth was sacrificed as a consequence of this misguided policy, or of our own economic growth is not known.

Projecting the emerging patterns of trade and investment should be a key ingredient in shaping our foreign policy. The key to making those projections is to understand the emerging patterns of comparative advantage. The emerging human capital perspective with its emphasis on R and D and investments in skills as a determinant of comparative advantage, provides a framework for making more realistic projections. It also provides a useful framework for shaping our foreign assistance policy, but again economists have hardly scratched the surface on the economics of foreign aid.[16/]

The pleas for a New International Economic Order focus in large part on trade issues. Modern trade theory can serve as a guide as to how we might try to structure a response to those pleas. Yet policy-makers for the most part neglect the issue of where our economic interests might lie, and economists have not contributed a great deal of knowledge that would serve as a guide.[17/] Neither have we recognized the central role that human capital might play in our foreign assistance programs as we provide resource flows to those countries.

The Theory of Endogenous Governmental Behavior

Most of neoclassical economics either takes government as a given, treats it as something exogenous to the private sector, ignores it, or assumes that it is irrational. Such treatment is somewhat of a paradox, for the participation of government is pervasive in the economic activities of most economies, and the tendency has been for this role to increase over time. Moreover, there is no obvious reason why we should expect governments to be either irrational or unresponsive to economic forces.

Trying to understand the behavior of government is important for three reasons. First, the sheer size of government as a component of economic activities is large in many countries. Second, government is the primary means by which income and wealth are redistributed in most countries. The distribution of income and wealth is an important dimension to understanding the economics of individual countries. Although typically not given the

same amount of attention, especially among Western economists, the distribution of income and wealth is parallel to and should be on a par in the attention it receives by economists with the allocation of resources. Moreover, attempts to redistribute income often have important disincentive effects (See Schuh, 1978, for example.) Hence, if the goal is to understand the development trajectory of particular countries, one needs to understand this important dimension of their economies.

Finally, economic policy tends to be pervasive in the economy. A distortion in a relative price will tend to affect all consumers and all producers of the product. Moreover, these effects will spill over from product markets to factor markets, and vice versa. Hence, to leave government unexplained is to leave unexplained a great deal that is important.

Fortunately, a theory of theories of government behavior is emerging that offers considerable promise. Rausser, Lichtenberg and Lattimore have recently reviewed and synthesized this literature which relates to democratic societies. They find that a number of conceptual formulations have been advanced to characterize endogenous government behavior. They classify these various formulations into four paradigms: (1) the liberal-pluralist framework, (2) the theory-of-state framework, (3) the theory of economic regulation framework, and (4) the rent-seeking interest group and conflict resolution framework.

The liberal-pluralist framework is found largely in the public finance literature. There is a large number of

variants of this paradigm, but the names of Downs, and Buchanan and Tullock stand out. In general, these models focus primarily on the policy-setting process and on the relationship between policy-makers and voters in particular. Policy in these frameworks relates to societal income distribution. Income alone is considered the indicator of well-being, regardless of source, and the effects of voters' interests are characterized in terms of the distribution of income.

The "theory of the state" paradigm emanates from radical economics, (See Jessop, O'Connor, and Roemer.) Contrary to the liberal-pluralist paradigm, which is based upon a "state" which emerges from an atomistic exchange economy, this paradigm presumes that governmental institutions emerge as the result of one dominant interest group with significant monopoly power. Moreover, this formulation is based upon groups of agents called classes rather than individual economic agents. This framework concentrates on the election and legislative choice as well as the bureaucratic choice processes.

The theory of economic regulation owes its origins to Stigler, Posner, and Peltzman. This framework treats government intervention and regulations as normal economic goods subject to the standard economic calculus. Consumers and producers are viewed as demanding government intervention of various kinds, most of which can be interpreted as a tax. The regulators must then seek to balance the marginal political return from an income transfer with

the marginal political cost of the associated tax. This paradigm focuses on the election process.

The rent-seeking interest groups and conflict resolution paradigm was partially characterized by Krueger. Zusman and Brock and Magee have made important contributions to broadening her perspective. This framework admits both economic and political markets and a process for resolving conflicting goals. Contrary to the economic regulation paradigm, in this perspective power is not swept under the rug, but instead its formation and effectiveness assume a central role. Moreover, rents are presumed to exist in both economic and political markets. The value of this framework is in the understanding of election and bureaucratic choice processes.

Another important body of literature on government behavior deals with the centrally planned economies, and in particular with the policy cycles that emerge in those countries. It turns out that stagnating growth which results from increasingly severe distortions leads to liberalization of policy and faster growth, only to be followed again by growing distortions, stagnating growth, and a repetition of the cycle. (For an example of this literature, see Brainard.)

An important contribution of the emerging theory of endogenous governmental regulation is that it provides insights into how income and wealth is redistributed - an issue on which neoclassical economics has little to say. Income and wealth is redistributed largely through

government intervention. By understanding government behavior we are able to understand some of the forces affecting changes in the distribution of income. This makes for a more complete explanation of the economy.

This research also leads to the concept of efficient distribution.[18/] This framework is useful for testing hypotheses about whether government intervention is re-distributing income and wealth in an efficient manner. Until lately we had little means of conducting such a test. The ability to do so is of obvious importance in understanding whether an economy is on an efficient growth path.

Another contribution of this body of theory is the understanding it provides on why governments intervene as they do. If one wants to predict what government behavior will be, this understanding is essential. Given the relative importance of government and the interventions it imposes on the economy, the ability to predict this behavior is obviously important. Rausser and his colleagues review some of the work along these lines.

Castle notes the universal nature of the self-interest hypothesis and argues that it applies to the private and public sector alike. He goes on to provide possible explanations for why so much of government behavior appears to be perverse to the skeptical eye of the economist, particularly when such behavior leads to policies which so grossly distort efficiency prices in the guise of re-distributing income. This is a challenge to understand government policies on their own ground.

Another example of the importance and potential of this perspective can be seen from Gale Johnson's study of the centrally planned economies. He finds out that the introduction of substantial food price subsidies is an important reason for the rapid growth of agricultural imports by those countries. Understanding why these policies are what they are is the key to understanding the role these economies will play in international commodity markets in the years ahead, as well as the growth of their economies as a whole. Moreover, it will be the key to the posture the United States should take vis-a-vis food security.

State trading agencies are becoming important in many countries. This body of theory offers the potential of eventually understanding the behavior of such agencies. Again, if one wants to develop an economic strategy for country X vis-a-vis country Y, the ability to predict the behavior of such agencies is essential.

Similarly, the kind and degree of government intervention is important in determining the particular growth path an economy will be on and the rate at which it will grow. This theory provides the means of understanding these issues, and this in turn can provide a basis for developing a posture on policy vis-a-vis that economy. Ultimately, the theory of government behavior provides the links between politics and economics and among the three previous pillars of this conceptual framework.

Finally, the theory of endogenous governmental behavior provides a means of understanding the planning process which is important in so many countries. Here the questions are legion. One would like to know whether the revealed preferences of public agencies are consistent with the policy objectives stipulated by legislative mandates. Similarly, one would like to know the nature and directions of causation between government structure, behavior, and the how, what and when of the production of public goods and services.

Key Research Areas

The conceptual framework sketched out above is rudimentary and incomplete. The brief surveys of literature are also incomplete, and the four elements of the broader framework are not yet well integrated. However, even in this sketchy outline there are important guidelines for future work which will provide a more adequate analytical framework for understanding the economic dimensions of international relations.

To conclude, it would seem useful to enumerate some of the key research issues which need attention if this framework is to be extended. Among these are the following:

1. The impact of economic growth on the sectoral composition of output, as conditioned by resource endowment and size of economy.
2. The extent to which knowledge can substitute for natural resource constraints in the process of

growth, especially as conditioned by private property rights.

3. The impact of investments in human capital on comparative, as conditioned by its impact on relative factor endowments and the sectoral composition of output.
4. The relationship between investments in human capital and the optimal level of population.
5. The interactions among economic growth, institutions, and investments in capital of all forms. Of particular importance would be to project future development of the centrally-planned economies.
6. Institutional design to facilitate economic intercourse among nation states, and to help resolve environmental problems at the international level. An important set of problems is that which provides a means of integrating the three countries on the North American continent. Another set would address the question of optimal currency areas.
7. Identification and measurement of the gains and losses from trade, with separate treatment of commodity markets, capital markets, and services.
8. The behavior of governmental units at all levels, ranging from state trading agencies, through national governments to international agencies.
9. The efficiency of income redistribution policies, at both the national and international levels, and measurement of the tradeoffs between equity and efficiency for individual policy measures.

10. The linkages among resource endowments, government policies, institutional change, and the growth path of economies.

The above set of problems are tractible with our present analytical and quantitative tools. These problems are important to agriculture in particular and to the development of a saner, more productive and more equitable world economy. Agricultural economists in particular have the tools and instincts for dealing with problems such as these. It is in our grasp to help make this a better world for our own compatriots and for the world as a whole.

". . . creative economic theory is a mushroom that lives on the wood of experience. . ."

Samuelson

Footnotes

1/ Three important references include Schultz (1961), Becker (1964), and Schultz (1964).

2/ An ample treatment of the perspective offered by the new household economics can be found in Schultz (1964).

3/ For a penetrating critique of dependency theory, see de Janvry and Crouch.

4/ Nerlove's model does predict declining rates of population growth and declining rates of infant mortality, the main features of the demographic transition.

5/ This result is counter to the dependistas who argued that the less-developed countries would be exploited by the advanced countries by virtue of their having to export agricultural products and other raw materials, for which they believed the terms of trade were declining, and importing manufactured products, whose terms of trade they believed were rising. See Prebisch and Singer.

6/ See Schultz (1974a), for an explanation of how this happens.

7/ Ultimately, it depends on whether the Schultz or Nerlove perspective sketched out above is valid.

8/ Important contributions to this literature include Hayami and Ruttan, North and Davis, North and Thomas, and Schultz (1968).

9/ Roumasset attributes the original use of "new institutional economics" to Dolan and to Alchian and Demsetz.

10/ This was first pointed out by Naya.

11/ See Pagoulatas and Sorenson and papers cited therein.

12/ See Caves and McCalla, for example.

13/ Krueger (1977) was addressing the question of whether the comparative advantage of developing countries lay in labor-intensive commodities or elsewhere.

14/ For a penetrating study of the food and agriculture sectors of the centrally planned economies, see D. Gale Johnson.

15/ In 1975 Congress established "new directions" for U.S. foreign assistance by requiring that the foreign aid agencies give special attention to agricultural productivity, population growth, infant mortality, unemployment, and income distribution. This legislation was well-intentioned. However, it was poorly conceived in concept. For a critique of the agricultural mandate, see Schuh and Thompson.

16/ For a couple of important exceptions, see Harry G. Johnson and Schultz (1981).

17/ For some important exceptions, see Cline and Warley (1977).

18/ Becker (1980) has provided an important step in providing a formal specification of a model from which tests of hypotheses can be made about the efficiency of income redistributions. For an application of such tests in the context of agricultural commodity markets, see Gardner.

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