

Department for Economic and Social Information and Policy Analysis



# ***THE THEORY OF INTERNATIONAL PUBLIC GOODS AND THE ARCHITECTURE OF INTERNATIONAL ORGANIZATIONS***

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# THE THEORY OF INTERNATIONAL PUBLIC GOODS AND THE ARCHITECTURE OF INTERNATIONAL ORGANIZATIONS<sup>1</sup>

For generations, there has been a debate about what is the appropriate role of the State in general, and in economic matters in particular. In recent decades, this debate has been joined with another—one which in the United States dates back to the Constitution—what is the appropriate level (Federal, state, or locality) at which different governmental activities should be carried on. Events, such as the end of the Cold War and the demise of Socialism, and ideas, from Smith to Marx to Pareto and Walras, to the modern theories of market failure and rent seeking, have caused an evolution—or perhaps better, a flux—in commonly-accepted answers to those questions.

In this paper, I want to shift the focus to a new question: What should be the role of international organizations in general, and in economic matters in particular. In addressing this question, I want to draw upon what we have already learned in addressing the first two debates. Economists have recognized the importance of a class of goods, called pure public goods. These have two properties, *non-rivalrousness* in consumption (that is, the consumption by one individual does not diminish the consumption available to others), and *non-excludability* (that is, it is difficult, if not impossible, to exclude others from the benefits of the public good.) Paul Samuelson was the first to mathematically characterize these goods, in a famous paper forty years ago. Without collective action, there will be insufficient provision of these goods. There is what has been called the free rider problem: everyone, in the pursuit of their self-interest, would as soon simply free ride on what others do. Providing public goods is now viewed as one of the central responsibilities, indeed, one of the central rationales, for government. Among those goods and services traditionally classified as public goods (in this technical sense) are national defense, police protection, and research.

## I. The Concept of International Public Goods

Subsequently, economists have called attention to the fact that some public goods benefit only those who reside in a particular locale.<sup>2</sup> Quite naturally, these are referred to as local

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<sup>1</sup>The views represented in this paper are those of the author alone, and do not represent those of any organization with which he is or has been affiliated.

<sup>2</sup>The classic article on the theory of local public goods is C. Tiebout, "A Pure Theory of Local Expenditures," *Journal of Political Economy*, 64 (1956): 416-24. The formal development of the theory is found in J. E. Stiglitz, "The Theory of Local Public Goods" in *The Economics of Public Services*, M.S. Feldstein and R.P. Inman (eds.), MacMillan Publishing Company, 1977, pp. 274-333. (Paper presented to IEA Conference, Turin, 1974.), and J-C. Milleron, *Econometrica*, 197 . The question of whether decentralized provision of local public goods will result in a Pareto efficient distribution of income—as Tiebout had conjectured—is addressed in J. E. Stiglitz, "The Theory of Local Public Goods Twenty-Five Years After Tiebout: A Perspective," in *Local Provision of Public Services: The Tiebout Model After Twenty-five Years*, G.R. Zodrow (ed.), Academic Press, 1983, pp. 17-53, and J.E.

public goods. The collective responsibility for the provision of these goods ought, on both equity and efficiency grounds, lie with the local community that benefits from them.

The purpose of this paper is to call attention to another important class of public goods, which I shall refer to as **international public goods**, which benefit all of mankind. They are, or should be, the collective responsibility of all nations. And unless this collective responsibility is recognized, there will be an underprovision of these public goods.

This paper is divided into two parts. In the first, I delineate what seem to me to be the most important of these international public goods. In the second (at this point incomplete), I consider the problems in ensuring an adequate provision of these goods.

## II. The Principal Categories of International Public Goods

I wish to draw attention to four such categories of public goods: the first, perhaps the most important, relate to the design of domestic and foreign policies which promote world stability and security; the second to humanitarian aid and development assistance; the third to research and development; and the fourth relate to the environment. Let me discuss each of these four international public goods in turn.

### International Stability and Security

There are three facets of international stability and security which I wish to emphasize. The first is obvious, and has been the subject of G-7 discussions for years. The world has become economically more interdependent. World exports have risen from less than \$100 billion in the mid-1950s to more than \$4 trillion. This means that fluctuations in economic activity in one region have repercussions outside that region. An economic downturn in Europe helps drag the rest of the world down. Blatant beggar-thy-neighbor policies, of the kind represented by the Smoot-Hawley tariffs and similar protectionist legislation in other countries were, by the end of second World War, recognized to be an important contributing factor in the world economic downturn that became the Great Depression. One of the objectives of the international economic institutions established at Bretton Woods was to avoid similar events in the future. But Bretton Woods only provided a framework. It relied on the individual actions of each country. In the most recent economic downturn, too much of the burden of recovery was placed on the United States. Other countries failed to respond quickly or adequately to the economic events, not only imposing high costs on their own economies, in terms of unnecessarily prolonged unemployment, but also imposing costs on their trading partners. In

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Stiglitz, "Public Goods in Open Economies with Heterogeneous Individuals," in Locational Analysis of Public Facilities, J.F. Thisse and H.G. Zoller (eds.), North-Holland Publishing Company, 1983, pp. 55-78.

each case, the country, or its monetary authority, rationalized its decision in terms of the ever present threat of inflation or adverse effects on the fiscal position. And there may have been a risk of inflation from monetary expansion: but this risk was slight, when balanced against the greater social risks of continued high unemployment. Similar remarks could be made about fiscal expansion. But these countries' monetary and fiscal policies, perhaps justifiable from the perspective of each country's narrow self interest, became truly questionable when viewed from the perspective of an international community, recognizing their interdependence. The issue being raised here is that some fraction of the benefits of expansionary policy accrues to trading partners operating below their capacity levels of output. This spillover of benefits is unlikely to be taken into account in policy decisions in the absence of policy coordination. To be sure, countries differ on the trade-offs involved in particular policy choices, but in the future, as economies become ever more interdependent, it will become ever more important that they recognize the collective good of maintaining economic stability.

The peso crisis in Mexico and the Barings crisis in Singapore have brought home forcefully the extent to which international capital markets are linked. Events in one country can cause disturbances in markets around the world. A major outcome of the recent Halifax Summit of the G-7 countries was not only a recognition of the importance of these linkages, but of the fact that they can only be resolved through international cooperative efforts which the countries have now set into motion.

This brings me to the second major aspect of international economic security: the maintenance and extension of an international liberal system of trade and investment. Economists have long lauded the merits of free trade, and the mutual gains which can be had from it. Anyone who serves in government quickly learns of the strength of the protectionist forces, those who would use the power of the government to reduce competition from abroad to gain profits for themselves, at the expense of consumers and the general welfare. These forces gain particular strength in the midst of an economic downturn. These forces achieve their way not just through the rent-seeking activities of lobbyists which economists and journalists have emphasized, but through the myopia so evident in the political process: those who lose their jobs see the costs; the costs are concentrated; but the benefits are dispersed, with millions gaining from lower prices. All too frequently, politicians respond to these strongly-felt sentiments. And government bureaucrats respond to the wishes of the politicians. It is not that the bureaucrats are being bought, as the rent seeking theories would suggest. It is that they are doing their job: those assigned the task of oversight of the trade laws take their jobs seriously. To be sure, there are important instances where statesman-like behavior has stood above these more parochial interests and actions taken have been in the long-run national interest.

Fortunately, there is another group of beneficiaries of free trade, the exporters, who increasingly have come to recognize the benefits of a liberal trading order.

With the success of the Uruguay round, attention needs to be focused not so much on further reductions in tariffs, but on the host of non-tariff barriers, which take on a wide variety of forms, the most nefarious of which involve quiet collaborative actions between governments and domestic firms to resist entry of products of foreign producers. For instance, there are a wide variety of well-established practices by which a set of firms (the domestic producers) can create barriers to entry to new firms (in particular, foreign producers). It always takes strong antitrust actions to remove barriers to entry, but domestic law enforcement officials have every incentive to look the other way, effectively condoning these practices. In some cases, governments can actually serve to facilitate non-competitive practices. They can, for instance, pass regulations which have a differential effect on foreign producers. They can insist on testing products only in their own markets, and impose standards which increase rivals' costs more than their own. While raising rivals' costs is a standard anti-competitive practice, it is particularly disturbing when there is government complicity. To be sure, questions always arise concerning national sovereignty in establishing safety, health, and environmental standards. Such standards are an essential function of government. But that is precisely why these practices are so invidious: there is no bright line, no way in which one can easily identify them and eliminate them. Yet, there is little doubt that they represent an important set of barriers to the free movement of goods, services, and factors.

These practices, in turn, help provide justification to those who argue that there must be laws to protect the country's producers against unfair practices of foreign producers. Unfortunately, all too often, such laws (including dumping and countervailing duty laws) are themselves used as protectionist measures. There is a simple resolution of this problem: extending the kinds of tough pro-competition, antitrust laws that the United States has internationally. This can be done: New Zealand and Australia, in their bilateral trade agreement, have done precisely that, as has NAFTA. But it will take the resolve of all the advanced countries of the world to ensure that a liberal trading order is maintained and extended.

The third pillar of establishing international security and stability is ensuring the success of the reform efforts in the republics of the former Soviet Union, the countries of Eastern Europe, and China. The importance of this task cannot be overestimated. Trillions of dollars were spent by the West winning the Cold War. Surely, the industrialized democracies should be willing to spend billions to maintain this hard won victory. Without economic success, there is a real danger of backsliding. Though this should have been apparent from day 1, the electoral strength both of the former communists and the nationalists should have left no doubt about the potential dangers. But this is a collective good: all of the world benefits from this international security, and no country or no group of countries, can be free riders.

More than aid is at issue. Trade policies are of equal importance. Economic integration into the world trading system both will increase economic interdependence, thus reducing the likelihood of the worst sorts of nationalist behavior, and will help force reforms; democratic economic reforms in turn will help stabilize democratic political reforms, both institutionally,

and through the resultant increases in standards of living. Yet, in spite of the apparent gains to be had, there are strong forces resisting this integration, led by the protectionist forces that I alluded to earlier. As the countries of the former Soviet Union and Eastern Europe redirect their economies, to enter for the first time international markets, they will no doubt represent a disturbance. In some areas, they will have a comparative advantage. In the short run, these comparative advantages are likely to be in raw materials, like aluminum and uranium. Western producers of these goods—like the producers of any commodity, particularly where production is concentrated and there are monopoly profits—prefer not to have competition, and they will seek to use the unfair trade laws and the power of government to obtain through political means what they cannot achieve through the market place. They have, to date, had remarkable success. Here is a case where the interests of consumers and the whole world have been sacrificed at the hands of a few producers, willing to fight change rather than adapt to it. (To be sure, change, whether caused by world events or by new technology, imposes costs on particular individuals and firms. Impact aid may be desirable to facilitate the redeployment of the affected resources.<sup>3</sup>) There has been here an unfortunate complicity between these protectionist forces in the United States and in Europe. Each has looked at the protectionist actions of the other as partial justification for its own actions, rather than taking the higher road. In at least one instance, they have sought to establish what amounts to an international cartel, under the grace of government. As if this were not bad enough in itself, such quantity restrictions reinforce the old institutional structures within the FSU, giving the old ministries, used to administering quantitative allocation systems, a new set of rationale to continue running their sectors. Thus, reform is impeded. What is required, to return to the basic theme of this paper, is collective action in the collective good. Europe itself could make a great contribution by moving as rapidly as possible towards association of Russia with the Common Market.

### International Development and Humanitarian Assistance

This brings me to the second major category of "international collective goods"—assistance to the less developed countries (including humanitarian aid). This assistance can be viewed from two different perspectives—economic development of the Third World is an important prerequisite for *long-term* international stability, and "redistribution" is one of the key items in any list of collectively-provided goods.

Within the Third World, we have seen international crisis after international crisis—Somalia, Haiti, and Rwanda all within the past couple of years. The relationship between human rights, democracy, and economic development is complicated: while development does not guarantee human rights or democracy, there is by now a large body of evidence supporting the hypothesis that there is a strong positive correlation. And if self-interest does not itself provide

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<sup>3</sup>Such assistance can be justified in terms of a market failure: the absence of insurance markets to transfer and absorb these risks.



sufficient motivation for helping development, then surely there are moral imperatives for doing so.

Unfortunately, too often what motivates giving is more a concern to assuage guilt than to remedy the underlying problem: the advanced countries are willing to provide an outpouring of millions, when they see starving children; but they are reluctant to supply the development funds that would make such tragedies less likely to occur. To be sure, governments in many of these countries compound their own problems, making assistance all the more difficult, but all the more imperative.

There have been enormous strides in our understanding of the development process in the past twenty years. Indeed, twenty years ago, there were few examples of countries bringing themselves out from a state of backwardness. The East Asian Miracle—the rapid development of the countries of East Asia over the past two decades—has changed all that. We now know not only that development is possible, but development requires neither the kind of authoritarian dictatorships of the Soviet empires nor the inequality that characterized much of Western development in the nineteenth century. Quite the contrary: development in East Asia was accompanied by egalitarian policies, including widespread education, particularly of women. Within China, it has been the village and township enterprises, not the large government firms, that have been at the forefront of economic expansion.

We now know that development is possible, and we know some of the policies that make development more likely to occur. We know that the basis of development must be wise economic policies pursued by the governments of these countries; but we also know that the pace of development can be affected by development assistance. (Indeed, there are claims that certain types of humanitarian aid that is not grounded in a well-conceived program of development may actually impede the development process, because of the standard moral hazard/incentive effects.)

## Science

Let me turn now to the third pillar of the new international economic order requiring collective action: research. We now recognize that knowledge is a public good.<sup>4</sup> It is an international public good: the benefits of basic knowledge are there to be enjoyed by all humanity. Over the past several centuries, the transformation not only of our economy but of

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<sup>4</sup>For early articulations of this view, see Arrow [ ] and Stiglitz [1987]. The United States' third President, Thomas Jefferson, in the late 1700s, long before the formal development of the theory of public goods, likened knowledge to a candle, which, as it transferred its flame to another, did not diminish its own strength. The Constitution of the United States explicitly recognized the importance of Federal responsibility in the promotion of science; perhaps the writers intuitively grasped that if support were left to the individual states, there would be an undersupply.



our whole society has, as its basis, the knowledge and enlightenment which emanated from the great universities of the world.

Basic research is, by its nature, not patentable, yet all the major developments in science and engineering, from the computer to the laser to the transistor, depend on basic science.

### **Environment**

The final pillar requiring collective action within the new international economic order is the environment. We all share one planet. The Rio Convention and the Montreal Conventions recognized this with respect to two of the more important hazards we face—those resulting from greenhouse gases and global warming and from ozone depletion from HFC's. While there has been perhaps remarkable progress with respect to ozone-depleting chemicals, there has been far less success with respect to greenhouse gases. Global warming and greenhouse gases are global problems, which can only be addressed within a global framework, with commitments from all countries, including the less developed countries. For the poorer countries to address these problems will, however, require assistance from the more developed countries, assistance that too will have to be done on a collective basis.

### **III. The Collective Provision of International Public Goods**

The central insight of the theory of public goods is that without government support, there will be an undersupply: there must be some form of collective provision.

How have we managed so well (or at least reasonably well) for so long without collective provision of these goods? There are two answers. First, in the world economy that emerged in the years immediately following World War II, the United States had a large share of world economic output. In such circumstances, it had the ability and the incentive to support these international public goods at a reasonably high level. Moreover, its secure economic position meant that it did not need to worry about any adverse competitive effect of any taxes that it might have to impose to finance these collective goods.

Second, there was a greater incentive for cooperative action. With the Cold War posing a life and death challenge to the industrialized nations and their economic systems, most countries did not want to see themselves as free riders—though to be sure, as a percentage of GDP spent on defense, few spent anywhere near the amount that the United States did.

All of this has now changed. The simple logic of the Cold War was thus: the enemy of my enemy is my friend and the friend of my enemy is my enemy. Now the logic is different—new bases of international relationships, including international economic relationships will have to be established. The United States no longer feels either willing or able to bear the disproportionate burden in the provision of some of these public goods.

Consider, for instance, support for basic research. A strong argument can be made that the burden of paying for this international public good has not been equally shared. While some countries have been successful in borrowing the fruits of basic research, and developing patentable inventions from which they earn large returns, they have failed to make a fair contribution to the cost of basic research. They have acted as free riders. To be sure, those that have had large basic research programs have reaped a large return. But the sense of increased competitiveness has led to strong calls for reorienting research in America towards more strategic objectives—where a larger fraction of the returns accrue to and are appropriable by the United States. There is a real danger that as each country tries to free ride on the basic research provided by others, the knowledge basis will fail to grow, to the long run detriment of the growth prospects of all countries. Unless there is a universal commitment to support basic research, it will be difficult to counter the arguments for more strategically-oriented research.

In some areas, rather than pursuing collective policies which promote the general interest, countries have pursued policies which actually conflict with such objectives. Like beggar-thy-neighbor trade policies, development assistance oriented around commercial objectives invite like responses: and the net advantage to any country in pursuing them becomes greatly attenuated—the real loser being the developing countries themselves. There has been real progress in discouraging practices like tied aid, but more has to be done. This is not to say that *market oriented* policies are not desirable: helping the less developed countries establish an environment which is conducive to private investment is essential. In many areas, such as telecommunications, if such market-friendly policies are established, private firms will enter, just as they have successfully met the telecommunications challenges within the developed countries.

Regrettably, we have not really established either an international commitment or a set of international institutions to ensure that many of the important collective responsibilities that I have discussed in this paper are addressed in the manner required.

But fortunately, there is some evidence that economists have exaggerated the difficulties posed by public goods. There is evidence that voluntary collective action can—where the need for collective action is recognized—go a long way to remedying the problems of underprovision.

The question to be addressed is how do we develop an "architecture" of international organizations to help clarify and articulate the collective benefit which can emanate from such international collective action? Such an architecture must be based on several premises. It must recognize that the collective action will be voluntary; it must operate through a shared vision—supported by the peoples in each of the countries—of the New International Order, including a recognition of the necessity of collective action.

Collective action often founders on issues of equity: how should the burdens of collective action be shared? Such issues often give rise to intense conflict. But in discussing these issues, the essentially voluntary nature of the actions must be borne in mind. This imposes severe

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restrictions on the set of admissible policies. (Progress on the issue of greenhouse gasses has, I think, been impeded by just such a debate. The fact of the matter is that no solution will be found unless there is a global effort, involving all countries, developed and less developed. The essential global nature of the problem needs to be universally recognized; the issue of who bears the cost of reducing greenhouse gas emissions needs to be dealt with separately.)

### Next Steps

If we agree that there are an important set of international public goods which require international collective action to ensure adequate provision, then we need to set in motion a process for raising the awareness of these goods, for assessing in which areas there are inadequate international institutional arrangements, and for suggesting how they might be dealt with more adequately.