The Economics of Government Market Intervention, and Its International Dimension

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ABSTRACT

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This paper uses basic economic theory to examine the circumstances in which government intervention in markets is justified, and the conditions under which the independent domestic policy choices of national governments can potentially be unambiguously improved upon by international coordination and cooperation. In a closed economy, market intervention is justified when there are "distortions" from the perfectly competitive ideal in which all market participants fully internalize the costs and benefits of their choices and also are too small to affect the prices at which they transact. Similarly, when there are multiple countries, independent policy choices will be optimal only when the distortions being corrected are local and when the effects of the individual national policies on world prices are negligible. When both of these conditions hold, then governments should be left to their own devices in setting domestic policies, and this is true regardless of what domestic objectives these government legitimately pursue. However, when either the distortions themselves or the price effects of market intervention extend across borders, then independent policy choices will not be optimal. Whether it is possible to design a mechanism for international coordination that will improve matters, on the other hand, is open to question.

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I. Introduction

The GATT was formed to prevent and settle conflicts among governments in international trade policy, and for fifty years that was more than enough for it to do. John Jackson has devoted a major share of his time to explicating the GATT and the national laws that interact with it. With the formation of the World Trade Organization in 1995, the GATT has evolved from a patchwork of rules, originally intended only to serve as an interim basis for the world trading system, into a full fledged international institution. Much admired but also much reviled, the WTO with its enhanced dispute settlement mechanism has more direct power over the economic policies of governments, including those of developed countries, than any other international institution. Furthermore, with recent decisions, the GATT and WTO have been viewed as constraining not only trade policies *per se*, but also domestic policies by way of their international dimension. This paper addresses that international dimension of domestic policies, using economic analysis to look at the rationales for government intervention in markets in an international context.

[*] I have benefited most obviously from my numerous discussions on the topic of this paper with my erstwhile Michigan colleague John Jackson.

The original motivation for this paper came from John Jackson himself. For many years while he was at Michigan, John and I interacted. On several occasions John invited me to join him in teaching together his seminar on topics in international trade law. One year, after using the seminar previously to examine such obvious topics as safeguards, subsidies, and intellectual property, John suggested we examine economic policy-making more generally in an international setting. I admit that I did not entirely understand what he had in mind, but I participated anyway, and I gradually came to partake more fully of his vision. What he recognized at that time has become more obvious since then to many: all national economic policies today are international, in that they have either direct effects on other countries or indirect effects through international trade and capital flows. These international effects often give rise to concern, and sometimes to conflict. Resolving these conflicts falls more and more frequently to the same international mechanism, now ensconced in the WTO, that previously was reserved for issues purely of trade policy.

John and I set out to explore these issues first in the seminar, and then we sought to work them into a joint paper. Each of us contributed his own text to the undertaking, and together these two texts comprised a paper, Deardorff and Jackson (1993), that we presented at a small conference of the National Bureau of Economic Research. Our intention was to integrate our ideas further and then to polish the manuscript into a paper for publication. However, this intention was never fulfilled. Both of us moved on to other projects, and one of us to another town. This paper therefore embodies the text that I originally wrote for that joint project, somewhat revised, expanded, and elaborated for the present purpose.

The paper includes two main sections, after this introduction. Section II works through the basic economic theory of government intervention into markets, including the special circumstances under which such intervention is not needed. It then looks briefly at the numerous ways that intervention might be justified, and how. All this is done first in the context of a closed economy. Section III then opens the economy up to international trade, asking how the closed-economy reasoning can be extended and what to do when national incentives and scope for policy do not match what is needed. The main question addressed is whether or not there is a need for some sort of policy coordination across nations, and if so what the nature of that coordination should be.

II. Domestic Framework of Analyzing Government Market Intervention

In economic terms, most reasons for governments to intervene in the economy can be understood in one of three categories: correction of market failures (distortions); redistribution of income; and non-economic objectives. In fact the third of these – non-economic objectives – if looked at carefully can often be interpreted in terms of one of the first two, but it is simpler just to accept them as a distinct type of objective. In each of these categories, economists are often able to describe in principle what the optimal intervention to deal with the objective should look like. These optimal policies, though often not attainable in practice, provide benchmarks relative to which actual policies can be compared. In this section, I will indicate how these optimal policies are determined in the context of a single country that has no interactions with the rest of the world. Then in section III I will discuss the difficulties that arise when individual countries attempt to pursue these policies in an international context.

A. Distortions or Market Failures:

The simple principles of optimization that apply throughout economics are, first, that marginal benefit should exceed marginal cost for any discreet change that is made in a policy or activity, and second, that marginal benefit should equal marginal cost for a choice to be optimal.[1] For both of these principles, optimality follows only if the concepts of marginal benefit and marginal cost are both all inclusive, taking account of all possible benefits and costs that may be effected by the choice and that matter for the chooser. If that is the case, then the first of these principles is true almost tautologically, while the second is only a bit more subtle, as a signal that one is already at an optimum since change in either direction provides no help.[2]

With properly defined costs and benefits, economists have applied these principles to explain behavior throughout the economy. Firms apply these principles in deciding how much to produce in pursuit of profits. Consumers apply them in deciding how much to consume in pursuit of their own satisfaction. And governments, one might hope, apply them in deciding when and how to intervene in the economy.

When will such intervention be appropriate? The beauty of a market economy is that, in its idealized form of perfect competition, it achieves a kind of social optimum without government intervention. The reason is that competitive market prices turn out to

[1] This holds in any context where continuous change is possible. The analogous and more obvious condition for a choice to be optimal when only discreet changes are possible is that marginal cost *exceed* marginal benefit for any departure from that choice.

[2] This condition for the continuous case, that marginal benefit should equal marginal cost, is only necessary, not sufficient. It will also be satisfied when net benefits are being minimized rather than maximized. In addition, there may be multiple local optima at all of which the condition is satisfied. Sufficient conditions also exist, but they need not concern us here.

transmit, to both producers and consumers, accurate signals of the benefits and costs to others of the goods that they respectively produce and consume. It follows that their independent pursuit of their own individual welfare leads to a level of welfare for the economy as a whole that cannot be unambiguously improved upon. According to the First Theorem of Welfare Economics, a competitive market equilibrium – in which all social costs and benefits are either internalized by firms and consumers, or are transmitted to them by market prices that both take as given – will be what economists call Pareto Optimal. This means simply that no alternative allocation of resources could make any one person better off without hurting someone else.

In principle, the same desirable outcome could be achieved by some other means, such as a central planner who searches among all possible allocations for one that will achieve an optimum. In any realistically complex economy, however, so many different interrelated things are going on at once that to calculate the optimal levels of all of them would be extremely difficult, and to gather the information needed to do this would very likely be impossible.[3] Instead, a market economy acts automatically as a sort of computer that does this calculation without any planner having to get involved.

In a perfectly competitive economy, then, as long as all costs and benefits are reflected in market prices, there may be no need for government intervention, unless it is for the distributional reasons that I will discuss below. However, there are a great many reasons why prices might fail in this regard, reasons that economists call market failures, or distortions. In each case, the failure of the price system means that something other

[3] The problem is not just the huge amount of information needed. More serious is the difficulty of getting those who have the information to reveal it honestly, since they are likely to have a stake in how the information is used and therefore an incentive to misrepresent it.

than the free-market outcome would be optimal. Therefore, government policies that can redirect the economy toward the preferred outcome may be desirable.

The classic example of a distortion is an externality. Suppose, as just one example, that production of a good causes harm to the environment in a way that lowers the welfare of people other than those who produce the product. In this case, the true, or "social," marginal cost of producing the good is not just the cost that the producer knows about and bears, but also the extra cost to society due to environmental damage. Independent profit-maximizing producers will now fail to equate true marginal cost to price and thus to marginal benefit. Instead they will expand production up to the point where only the marginal cost that they bear themselves is equal to price. Since marginal cost typically rises with output, this means that they will produce too much.[4]

What can be done about this? The social optimum in this example would be a lower level of output that equates true marginal cost with marginal benefit. An omniscient social planner who could calculate this optimum could then simply require that firms produce it. Alternatively, a variety of policies could be put into place to make production by the firm more difficult, thus raising its costs and reducing its output. But the simplest and most direct solution to the problem may be to raise the firm's cost by the extent of the environmental damage that it causes. This can be done by levying a tax on production equal to the damage. In this way, the taxing authority causes the externality to be

[4] Actually, there are plenty of cases where marginal cost is constant or declining with output. When these are consistent with perfect competition, then it is the response of demand, not supply, to the resulting lower price that causes output to be too large. In other cases, such a structure of costs may be inconsistent with perfect competition, and the distortion of the externality is combined with yet another distortion arising from some form of imperfect competition. Perhaps oddly, since imperfect competitors typically produce too little and charge too high a price, these two distortions may conceivably cancel out. That is, while both a polluter and a monopolist are individually suboptimal, a polluting monopolist may, coincidentally, be optimal.

"internalized;" that is, the decision maker now confronts a marginal cost, including the tax, that is a correct reflection of the true social marginal cost. Once the externality is internalized, the actual decision of how much to produce can then, once again, be left up to the firm.

This idea can be applied to all distortions of markets, although the implementation of these policies is not always easy, practical, or even possible. Distortions arise whenever the marginal costs and/or marginal benefits faced by private sector decision-makers depart from the true social marginal costs and benefits. One appropriate government policy in such cases is to levy a tax or subsidy on the behavior of the private-sector entities involved, so as to change their marginal costs or benefits to the true social levels. The advantage of these policies is that they lead to optimal behavior, and that they do so without requiring the government itself to figure out what that optimal behavior is. Instead, by setting just a few policies to bring private costs and benefits into line with social costs and benefits, the government can leave it up to the market economy to function as a computer to solve that problem.[5]

Several examples of this idea for determining policy can be mentioned before I proceed. In the case already considered of a negative externality in production, the optimal policy is a tax on production. If instead it were consumption that created the negative externality, then a tax on consumption would be called for. And in both cases, if the externality were positive (desirable) rather than negative, then the appropriate policy would be a subsidy rather than a tax. Some classic examples are flowers that reduce costs

[5] There is nothing in the economics here to require that government use taxes and subsidies, rather than directly regulating the activity, and in some cases it may be easier to know the optimal quantity than the

of producing honey, the beneficial effects for tourism of the scenery provided by attractive farms, and the reduced exposure to infection when others are vaccinated for a communicable disease.

An extreme case of externality is the public good. This is a good that, once produced, is only feasibly or sensibly used by many people, and whose use by some does not totally preclude use by others. Examples are parks, roads, police and fire protection, and national defense. The externality here is that producers either cannot or should not provide public goods to some without providing them to others, since the cost of additional users is zero. Potential producers therefore cannot, once again, fully internalize the benefits that these goods provide. Here the needed subsidy to the producers often takes the form of government doing the production itself. However, there is sometimes no reason in principle why government could not purchase a public good from the market, and current moves toward privatizing many public services are tending in that direction.

Even without externalities, markets will fail if they are not perfectly competitive. If the number of producers in a market is small, so that they therefore have some monopoly power, they will reduce output below competitive levels and thus raise prices above marginal costs. Consumers who pay these prices then perceive costs to be greater than they actually are, and they consume too little. A subsidy to consumers can solve this problem, although not without further enriching the monopolistic producers in a manner that makes the adoption of such a policy unlikely.

Market failures do not occur only in goods. Factor markets often fail, and the appropriate policies there are analogous. Often these arise due to asymmetries of

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optimal tax. It is seldom for this reason, however, that governments often seem to prefer direct regulation,

information. In both capital and labor markets these can lead to levels of employment and of lending that are below optimal, and a policy of subsidizing these activities may therefore be beneficial. These cases can get rather complicated, but the principle continues to be that government should use policies to bring price signals into line with true social costs and benefits.

If the only reasons for government intervention were distortions, then, the prescription for optimal policy would be simple: identify the distortion, then tax or subsidize as necessary to remove it, or achieve equivalent effects by the use of other forms of government regulation or intervention. Filling this prescription would not be easy, since distortions are usually hard to identify, and even harder to quantify. But the objective would be clear. In fact, however, governments care about more than just market failures.

B. Distribution of Income

Economic theory has little to say about what the distribution of income should be, although it says a good deal about what the distribution of income is. Competitive markets imply primarily that income will accrue to whoever owns the economy's productive assets, in proportion to their productivity. Since that ownership depends in part on historical accident and events outside the scope of economic theory, there is no reason for it to conform to anybody's idea of what is desirable.[6] The arguments given above about optimal decision making and optimal policy are only about economic

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which is therefore unlikely to be done optimally.

efficiency – about maximizing the size of the pie that members of the economy share. They do not say anything about how big each person's slice of the pie should be. And yet this is something about which most members of society usually have strong views.

A second, legitimate objective of government is therefore the distribution of income and wealth. Depending on who controls the government, this could be an unseemly preoccupation with enriching the members of government themselves. Or it may reflect a more laudable concern with the well being of the poor, especially those who are poor through no fault of their own. In either case, the concern may also arise either directly because of the preferences of those in government for the welfare of themselves and others, or it may arise indirectly from the exigencies of staying in power and the desire to be re-elected or avoid a coup. Whatever the case, many government policies are inevitably directed at shifting incomes away from some people and toward others, without necessarily – or at least intentionally – changing the total resources available.

Redistributing income would seem to be a simple task, if you are a government: just take away from some and give to others. And indeed, if it could be done once-and-for-all and without warning, I suppose it would be that simple. But reality is not so accommodating. Changes in policy occur in real time, and they are usually anticipated by those whom they affect. As a result these people change their behavior, either to avoid the adverse consequences of the policies, or to position themselves for greater benefits. This means that a policy that was only intended to redistribute income will have other effects as well. For example, an effort to redistribute from high-income individuals to

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[6] Even those aspects of ownership that are explainable from economic theory, such as the response of savings and wealth accumulation to individual rates of time preference, do not necessarily carry normative implications.

low-income individuals will lead those with high incomes to change their behavior to conceal or even reduce their taxable incomes, substituting untaxed leisure for work. Economists therefore describe the theoretically optimal policy for redistribution as the "non-distorting lump-sum tax." But this term is usually also accompanied by the caveat that such policies do not in fact exist.

In practice, then, governments redistribute by using policies that do distort behavior, the progressive income tax being the most familiar example in democracies. Many other policies, from unemployment compensation to food stamps to social security, embody distributional objectives among other things. But these policies fall far short of achieving the distributional objectives that many governments probably have in mind. Therefore income distribution also plays a role in the background when policies are being considered for other purposes. A policy to correct a distortion will be more likely to be used, for example, if it also favors a group whose income is viewed as inappropriately low.

C. Non-economic Objectives

Governments also pursue a variety of objectives that are often called non-economic, in that they do not appear at first glance to be related to the above economic considerations of efficiency and economic well-being. In fact, however, such non-economic objectives can be understood on the same terms as economic ones, by simply including them in the social welfare function that is to be maximized. The same cost-benefit calculation that was described earlier will then take these objectives into account. Nonetheless, it is useful to consider such non-economic objectives separately, because of their prominence in policy discussions.

The prototypical non-economic objective is national security. In order to survive as countries, all nations need to arrange for their defense from military attack, and this cannot be left up to the private sector because national security is a public good. That is, the benefits accrue to the entire society, and not only to the individuals who do the work. The social marginal benefit from defense is therefore much larger than the private marginal benefit, and there is scope for government to intervene, just as in the case of other distortions. Applying the earlier principles to this case, a government might therefore decide to subsidize defense, which in effect it usually does by operating the defense establishment itself. Direct provision of public goods by government is not necessarily the most efficient choice, since it bypasses the market in deciding on the most efficient producers. However, with government as the only demander of a public good on the market, the advantages of perfect competition – which requires a large number of buyers as well as sellers to prevent them from exerting market power – might be unattainable anyway.

Other non-economic objectives do not require government to be so directly involved in the economy, and even national security has aspects that are more amenable to market solutions. A desire to promote a cultural identity, for example, only requires some subsidies and/or taxes for those behaviors where private individuals fail to internalize the cultural objective. Likewise, the need to sustain productive capacity in an industry, so that it will be available in time of war, can be achieved by subsidizing production (or perhaps just the maintenance of a non-operating plant) in that industry. In such cases and others, government intervention may be justified. Economists would argue, in each case, that intervention should be focused as directly as possible on the objective being addressed, in

order to avoid creating additional and unnecessary distortions, and that interventions should leave as much to the market as possible, in order to achieve the objectives most efficiently.

D. Intervention-Induced Intervention

Not all government interventions can be understood in the framework just described, for I have considered only interventions that are done optimally. Naturally, many of the things that governments do in fact are far from optimal, and this leads to further problems. If a government implements an economic policy that has no justification at all in economic terms, or if it chooses a less-than-optimal policy for a legitimate objective, then it will introduce a new distortion into the economy by its own policy. There are therefore cases of policy intervention that are motivated not by any underlying objective or distortion that would be present in the absence of government, but only by the distortions that have been introduced by other government policies.

For example, suppose that a concern for income distribution has induced the government itself to provide health care for the poor, rather than redistributing income to them in a less distorting fashion. The negative effects of unhealthy behavior (smoking, for example) are now borne not just by the individuals who engage in that behavior, but also by the society that pays for their health care. Therefore a case can be made for taxing such unhealthy behavior in order to re-internalize these costs.

III. The International Dimension and Its Implications

The principles I have described above assume that countries act in isolation. Once we allow for international interactions of various sorts, however, the picture becomes

more complex. Costs and benefits are no longer exclusively national, and the policies to correct distortions and achieve other objectives also may have international repercussions. Once these considerations are taken into account, it is not clear that governments acting independently, even if they do follow the principles laid out above, will succeed in achieving their objectives.

One way to address this issue is to ask, first, under what circumstances countries and their governments, acting optimally by their own criteria, can be left to their own devices. That is, under what conditions will independent national governments, setting policies in their own separate interests, achieve a world-wide configuration of policies that will be optimal for the world as a whole, in the sense that it cannot be unambiguously improved upon by another policy configuration. As in the First Theorem of Welfare Economics, which provided such conditions for private-sector decision making, this question provides a benchmark against which actual conditions in the world can be compared. It tells us under what conditions policy choice can be left up to national governments, and also when they should not. In the latter case, these conditions also are suggestive not only of the sorts of problems that need to be addressed in the international context, but also of the nature of the international coordination and cooperation that is required.

Preliminary analysis (see Deardorff (1997)) suggests that independent national policies will be optimal *only if* at least the following two conditions are met:

1. The market failures, distortions, or non-economic objectives that are addressed by government policies are local, in the sense that both their costs and their benefits, as well as the behaviors that cause them, are confined to the same national economy.

2. The countries that set policies to deal with these problems are small in world markets, in the sense that the policies of the individual countries do not have perceptible effects on world prices.

Under these circumstances, it appears to be the case that if every country sets its own policies, taking the policies of other countries as given, then the collective outcome for the world will be internationally Pareto Optimal in terms of national objectives. That is, no other configuration of national policies could raise the aggregate welfare of any one country without lowering that of another.

I do not know in fact that this proposition is generally valid, for I have looked at it formally in only a few special cases. Therefore I cannot be certain that leaving countries to their own devices in these circumstances is necessarily the right thing to do, and I can easily imagine that others will find additional and perhaps more restrictive assumptions that are needed in order to justify such policy independence. However, until such assumptions are identified, it seems reasonable to leave countries alone when they and the policy issues they are addressing satisfy these two assumptions. In any case, without knowing why intervention is needed, it would be hard to prescribe the nature of the intervention.

Perhaps more important, however, is what this proposition implies about the need for international intervention when these assumptions are *not* satisfied – when distortions are not local and/or the national policies to address them affect world prices. For then we know that a collection of independent national policies will be flawed and we know why. It follows that some mechanism of international coordination or cooperation may be called for. I shall touch briefly on the kinds of problems that arise if each of these assumptions, in turn, is violated.

Cross-border Distortions

Suppose first that the market failures or other objectives of policy are not local. Then local governments will have an interest in correcting distortions that originate abroad, yet are beyond the influence of their own policies. At the same time, they will have little or no interest in correcting distortions that originate from within their own countries to the extent that the good or ill effects of these distortions are felt only abroad.

A simple example is a negative international externality that arises from production, such as global warming. The adverse effects of each country's own production are felt primarily by the rest of the world, and it is therefore not in an individual country's interest to limit its own production significantly through a tax or other regulation. This is the classic free-rider problem, and it is also the standard case of the Prisoners' Dilemma in game theory: All countries would be better off if they could collectively limit production, but it is in the individual interest of each country to cheat on any agreement to do so, by itself producing more.

In such cases, regardless of whether the distortion is positive or negative, as long as all countries share qualitatively the same interest in the outcome (all wanting reduced emissions, for example), an international mechanism is needed that will induce all countries to do more or less the same thing, but to a degree that they would not individually choose. The problem, then, is to find an international mechanism that will provide the right incentives for governments to act, just as the closed economy problem in the previous section was to find a policy that would correct the incentives of private sector firms and consumers. An international agreement to reduce production in the offending industry, for

example, together with international sanctions for violating that agreement, might be manageable, since it will treat all participants qualitatively the same.

Terms of Trade Effects

If countries are not small in world markets, then any policies that they undertake to influence the behavior of their own firms and consumers will also have some effects on world prices. Since almost all countries will normally be net exporters or net importers of individual goods, these price effects will matter, along with any correction of distortions, for their aggregate national welfare. However, in this case the interests of different countries are necessarily opposed, since world markets must by definition include both net exporters and net importers.

Suppose, for example, that distortions require of all countries a policy that will limit output in an industry. Since a reduction in supply leads to a rise in price, countries that are net exporters of the good will want to limit output more than would have been justified by the distortion alone, while countries that are net importers will want to limit output less. Independent policy choices will therefore lead to over-correction of such distortions in net exporting countries and under-correction in net importing countries.

Once again, there is a case for somehow coordinating national policies, although here the problem is not one of free riding or the prisoners' dilemma. Rather, what is needed is to induce countries to ignore these terms-of-trade effects in setting their policies, something that will be very difficult for any international arrangement to assure.

Distributional Objectives

The two assumptions above do *not* include (as I once thought they should) that countries attempt to maximize only the total of national welfare without concern for distributional objectives. For it turns out, in the cases that I have examined, that even if countries attach different weights to different individuals or groups within their economies for any of the reasons discussed in section II, it is still true under the above two assumptions that independently optimal policies will be Pareto Optimal from an international perspective. Suppose for example that one country is willing to sacrifice some national income to help those in a particular industry, while another country is not. Then attempts to help that industry will matter for the first country's trade. However, as long as the country is too small individually to affect world prices with its assistance to the industry, then that assistance is not internationally inefficient.

Likewise, if such a country has a local distortion that it seeks to correct by using policies that will help or hurt the favored industry, it will choose levels of those policies that are different from what it would choose without that preference. Once again, however, the fact that it is basing its own policy intervention in part on considerations of income distribution does not render its policy choice internationally inefficient. That is, no other configuration of policies internationally could permit the country to achieve what it views as a better outcome without lowering national welfare in another country.

To be more concrete, consider an example. Suppose that an industry – call it coal mining – generates a type of pollution that is unpleasant only for the local population. Suppose also that in one small country – call it South – the workers in that industry happen to be exceptionally poor, perhaps because they lack the skill or natural ability to do anything else. And suppose that in another small country, North, coal mining generates

the same kind of local pollution, but the poverty of the workers is less of a concern – perhaps because of a difference in social attitudes towards poverty or perhaps because the country can afford a different technique of production that makes these workers more productive and thus higher paid. The issue then is whether the two countries can be left alone to determine their own policies for limiting pollution in this industry.

If all countries are left to make these policy choices themselves, then South will choose a less restrictive pollution policy than North, even if it cares just as much about the cost of pollution, simply because of its concern for the income of workers in the industry. South's tax on coal output, if that is the policy it uses, will therefore be smaller than North's. Producers (and workers) in North may well complain that they are competing with producers in South who are taxed at a lower rate, even though they are polluting their own environment at least as much as the producers in North. And that is true. But it is also appropriate that this should be the case, since South has different interests than North. And it is efficient, so long as both countries are individually too small to affect the world price of coal with their choice of policies. Given South's legitimate need to balance the costs of pollution against the costs of greater poverty for these workers, neither a higher tax on coal in South nor any policy to interfere with trade in North can increase the well-being of North without lowering that of South. Of course, the "well-being of South" is here defined to include both the benefits from reduced pollution and the weight given by South to the income of the coal workers, as well as national income more generally.

IV. Conclusion

The lesson here is that there is a possible case for international coordination of government intervention in their domestic markets in either of two situations: 1) when the distortions they are correcting are international in scope; and 2) when the markets in which they are intervening are international and their intervention has implications for prices of internationally traded goods. Whether such coordination should in fact be attempted is another question that I will address below. For the moment, however, I would stress the converse implication: that coordination is unnecessary when neither the distortions themselves nor the price effects of intervention extend across borders.

That is, suppose for example that the government of a small open economy wishes to abate local pollution in one of its cities. Because the economy is small, its efforts to tax, regulate, or otherwise alter the behavior of its producers in that city will not affect world prices, which it therefore takes as given in deciding the benefits of exporting and the costs of competing with imports. As long as the pollution itself does not spill across national borders, then the local government can be left to its own devices in setting policy for this purpose, whatever may be its objective. If it is, say, reluctant to tax producers by the full cost that they impose on local society because of their favored political position, that is its choice. It should not be second-guessed by foreign governments, even though their own producers may compete in the same world markets.

By similar reasoning, almost any local distortion can be left to local policy in any small economy, since by definition such an economy is too small to use its influence over world prices to its own advantage. Since the latter is the only way that it might be induced to set policy for a local distortion suboptimally, it should be left alone.

In contrast, the policy decisions of large countries do affect world prices, which means that they create an externality that is just as real as if the distortions themselves extend across borders. In both cases, the policy choices of individual countries will not be optimal from the standpoint of the world as a whole, because they do not internalize their full effects. We are accustomed to recognizing that the incentive for countries to use tariffs for their own (perceived) advantage at the expense of others provides a rationale for international cooperation under the GATT and WTO.[7] We should perhaps also recognize that such international coordination efforts may be needed for domestic policies when they too impose international externalities due to the international nature of the distortions they address and/or the price effects of the policies themselves.

To recognize the potential need for such coordination, however, is not to say that it should necessarily be attempted. Unlike the case of trade restrictions, the optimal level of which is understood to be zero, the optimal levels of domestic policies are usually very hard to know. Considering the great difficulty that we have had in steering a course toward the known objective of free trade, it may well be impossible to construct international mechanisms for cooperation in domestic policies that will move us even in the right direction. In some cases we do not even know what direction that is.

Therefore, the message of this paper is just to be careful. Domestic policy choices *can* matter for the well being of other countries, and we should not presume that domestic policy makers will behave contrary to their national interest in selecting these policies optimally for the world. Only when both the countries themselves and the problems they address are too small to matter for others should we believe that their choices, like those

[7] See Bagwell and Staiger (1999).

of price-taking consumers and producers, will be internationally efficient. However, to recognize the problem is not the same as knowing its solution. In many such cases the suboptimality of independent policy choice may be the best that we can do.

References

Bagwell, Kyle and Robert W. Staiger 1999 "An Economic Theory of GATT," *American Economic Review* 89, (March), pp. 215-248.

Deardorff, Alan V. 1997 "International Conflict and Coordination in Environmental Policies," in Jagdeep S. Bhandari and Alan O. Sykes, eds., *Economic Dimensions in International Law: Comparative and Empirical Perspectives*, New York: Cambridge University Press, pp. 248-274.

Deardorff, Alan V. and John H. Jackson 1993 "Problems of Regulating Economic Activity in a World of Increasing Interdependence," unpublished manuscript, October 17.