Trade when the environment matters

Thomas Andersson

Introduction

By paving the way for economic specialisation and by speeding up the development and diffusion of new technologies, trade stimulates an efficient use of resources. However, commercial activities also exert a growing pressure on the world's environment. Trade brings production, extraction of natural resources, polluting transports, and a specialisation of natural systems which reduces heterogeneity and increases vulnerability. With many environmental effects increasingly "borderless" in nature, "pro-trade" literature advocates trade as a means to improve the environment, while "pro-environment" literature emphasises the harmful effects of trade and calls for protectionist measures.

The basic problem with trade in the present context is that commercial goods and services are managed by markets, while environmental values often are not. Protectionist measures against those products whose consumption or production give rise to environmental degradation may then appear a viable instrument to correct the situation. In practice, however, barriers to commercial interactions are generally inefficient, and their acceptance involves risks for the global economy as well as for the environment.

The present study raises a double warning. On the one hand, calls for protectionist measures will not help to curb the environmental problems. On the other hand, liberalisation of commercial trade will not in itself be sufficient either. Rather, there is a need to coordinate actions within as well as between national societies, in order to ensure that human behaviour takes environmental values into account. Due to the practical problems in internalising environmental effects, it is particularly important to establish institutions which can connect solutions on different levels. Otherwise, trade may fail to take environmental values into account, while concerns about the ensuing degradation will threaten the underpinnings of trade. This way, we risk losing both these "common goods" which are crucial to the welfare of humanity—the global environment and an open world trade system.

Trade and externalities

While traditionally thought of in terms of international flows, trade actually takes many forms. For example, trade occurs between domestic actors, and savings and investment decisions represent intertemporal "trade", determining the level of consumption today as well as opportunities for the future.

Broadly speaking, trade can be defined as voluntary transactions between individuals or organisations that involve a transfer of goods or services in one direction, and compensating payments in the other. The nature of trade changes over time, however, as does our view of it. Traditional theories viewed international trade as motivated by differences between countries in factor endowments or technologies. Trade within industries, or within individual firms, requires other explanations. Understanding the motivations of present day international trade requires that imperfections in information, economies to scale and product differentiation are taken into account.

Partly connected to the "proper" kinds of trade, there are resource transfers which are "unmanaged" by functioning markets. This is characteristic not least of many environmental values. From an economic perspective, problems arise due to the accessibility of nature. Many environmental assets, like the oceans and the atmosphere, are lacking well-specified property rights and may be enjoyed and consumed free of charge, and thus without sufficient guiding mechanisms. The result is externalities—costs and benefits which fall outside the realm of functioning markets—whose existence was first clarified by Pigou (1932). When externalities are present, spontaneous market forces fail to discipline the behaviour of private actors.

From society s point of view, the ideal state is one in which all effects are *internalised*—meaning that actors resume full responsibility for the true consequences that pertain to their actions. As individual incidents may multiply and lead to the breakdown of entire ecosystems, however, the presence and magnitude of environmental externalities are characterised not only by substantial risks, but also by genuine uncertainty. Keeping track of all possible side-effects and interlinkages would involve insurmountable problems. In principle, externalities can still be addressed by an appropriate mixture of policies, which take risks into consideration and reduce uncertainties to an acceptable level. Governments have the power to stimulate the creation of markets for some environmental assets which can be supplemented by taxes, regulations, subsidies, and other actions which compensate for the lack of such markets in other respects.

International complications

In addition to the difficulties in controlling all unrecorded effects within the realm of national jurisdictions, many environmental effects have international dimensions. Actions undertaken in one country have repercussions on others, e.g. through pollution that crosses national borders. An effective internalisation of environmental effects on the international level would imply that the so-called "polluter-pays-principle" was applied in a literal sense. In practice, countries are seldom prepared to ensure that domestic polluters compensate victims fully, let alone victims overseas, for environmental damage. Furthermore, transfer payments are associated with concrete problems, such as *moral hazard*—meaning that potential recipients may alter their behaviour in order to become eligible for payments.

The crucial question is therefore how sovereign countries can coordinate sound management of environmental resources to provide shared benefits. A common suggestion is to establish *harmonisation* of environmental standards, or

common charges for environmental damage. Due to differences in economic, social and natural conditions, however, countries envisage very different returns from actions in this field. Calls for harmonisation typically fuel disagreements concerning *which* standards to employ, since a common requirement is possible only if at least one part is willing to give in. In addition, varying priorities mean that identical standards by definition lead to inefficient outcomes.

Another suggestion concerns the adoption of barriers to trade in commercial goods whose production or consumption give rise to environmental damage. Of course, a country generally has the freedom to determine standards with respect to pollution from consumption, whether it arises from domestically produced or imported products. In this case, the appropriate policy measure takes the form of a standard which treats domestic and foreign actors the same. It should be noted, however, that adapting to varying standards is costly for firms. Joint standards facilitate entry and increase the competitive pressure, thereby rendering economic gains. Thus, there is a trade-off in the costs and benefits that follow from separate and harmonised standards, implying that the size of the area which adopts joint standards should neither be "too" small nor "too" large. In the following, we refrain from further discussion on this matter.

When countries suffer from negative externalities that arise from *production* abroad, however, the imposition of sensible trade barriers is more difficult. Production abroad may hurt the environment because of effects that spread across national borders. Alternatively, other countries may fail to require that their producers take full account of the environmental damage they impose on their own society. This in effect corresponds to the provision of an implicit, social subsidy, which may help to attract factors of production. In either case, punitive protectionist measures *may* work, at least if the acting country is a major importer. Broadly speaking, the exact level of the "optimal tariff" depends on the size of the negative external effects arising from the production or consumption, and the degree to which factors of production are mobile (Baumol 1971).

Unwanted effects

While trade barriers at first glance may appear as powerful instruments to address international environmental problems, there is a range of side-effects which may lead to unwanted results, and even counteract the intended purpose. Barriers typically distort the allocation of a range of assets, and may establish black markets with unofficial prices. Thus, even in situations when environmental externalities are actually reduced by the adoption of such barriers, the outcome is generally inferior compared to that which would prevail with compensation for well-functioning markets—i.e. instituting trade in all respects rather than restricting some trade. It is generally desirable to seek action which deals with the source of environmental degradation directly, rather than addresses it indirectly via trade measures.

Beyond these matters, the use of barriers cannot be disentangled from the international trade system as a whole, and the political power structure. As is made clear by the school of public choice, policy-makers cannot simply be assumed to maximise social welfare. To some extent they look after their own

interests, which means that the gains and losses of influential groups weigh relatively heavy in decision-making. In particular, the lack of complete information regarding environmental issues may take the form of ignorance or unawareness. What people are not aware of, they cannot protest against. Costs can be made less painful politically by targeting groups which are unlikely to protest against their losses

These circumstances are troublesome for the intersection of issues in trade and environment. The basic reason is that the benefits from both pollution abatement and free trade in ordinary goods tend to be spread thin on large parts of the population. There are consequently difficulties in organising an effective political defence of environmental values. The benefits from not enforcing consideration to environmental values, as well as from restricting commercial imports, are rather concentrated on small groups which are relatively efficient in exercising political pressure (Andersson 1991). "Traditional protectionists", i.e. those who opt for barriers to trade in order to defend vested interests, consequently tend to have an upper hand on "environmentalists" in the struggle to influence policy-makers, which speaks for barriers to trade for other reasons than to protect the environment (Hillman and Ursprung 1992). In many cases, it is simply impossible to pinpoint what barriers are imposed to take account of side-effects on the environment, and for no other reason. Because of this situation, there is a need for rules rather than discretion.

Applying barriers to trade unilaterally seldom represents a realistic option for small countries with limited bargaining power in bilateral negotiations. Under all circumstances, shutting out imports because of properties in the underlying production process typically violates GATT. As seen from the stalemate in the multilateral trade talks in the Uruguay Round, an open world trade system cannot be taken for granted. While the old set of rules becomes increasingly obsolete, the major players are pressing for advantages in trade on a bilateral basis. New trade instruments, such as countervailing duties and the threat of antidumping proceedings, nowadays effectively discriminate certain countries, and even individual firms.

The freedom to apply ecological tariffs would consequently undermine the tarnished but still widely-accepted multilateral principles in world trade. This would damage all countries, with weak economies that have limited bargaining power in bilateral negotiations faring the worst. With the door wide open to arbitrary and discriminatory trade measures, there would be worse prospects for cooperation to handle joint problems.

Incentives and first-movers

The political incentive-structures noted above counteract an internalisation of non-commercial values. Some actors are able to reap short-term profits from the squandering of much larger long-term environmental values. Those who eventually pay the bill are unaware of their losses, or simply unable to organise an effective resistance. In this situation, it will probably take a long time before policy-makers succeed in achieving any marked improvements.

Thus, we need to look for other ways to stimulate better management of the environment. Much of the progress in economics in recent decades has grown

out of the realisation that human behaviour cannot be taken as given, but that actors learn and adapt in a way which is conducive to their interests. The most constructive approach is probably to look for ways of implementing incentive-schemes which make it rewarding to internalise environmental externalities. One avenue of approach is to look for what may be termed "strategic complementarities"[1], taking both economic and political conditions into account. The purpose is to obtain a favourable interplay between actors, including governments, private firms and consumers, domestically as well as internationally.

The limits to trade are not fixed, but transfers between individuals or groups of individuals may be more or less commercial in nature. With consumers aware of negative external effects from production, for example, producers may be rewarded for improving their environmental record, as goodwill raises the demand for their goods. In fact, given complete information and that preferences were accurately expressed, markets would arise for environmentally sound products and production processes.

Imposition of a binding restriction regarding environmental standards inflicts short-term costs on those who have to pay for, e.g., the instalment of cleaning equipment. At the same time, it stimulates the upgrading of skills and technologies which may eventually reduce costs. Porter (1990), among others, has opted for strict environmental standards as means to enhance technological progress and achieve strategic advantages. It is far from clear-cut under what circumstances it is possible for an individual country to take concertive action on its own, however. Hoel (1989) shows that unilateral reductions risk leading to higher emissions overall, as other countries may well respond by raising theirs.

Whether those who proceed first will later enjoy an advantage essentially depends on if and when others will have to follow. In other words, the extent to which a country perceives it as advantageous to require internalisation of environmental costs and benefits, crucially depends on the degree to which there are expectations of a general internalisation of externalities in the future. Without such expectations, competitiveness will be damaged, with domestic industry simply induced to relocate activities abroad or be wiped out.

Summing up, the difficulties in coordinating all those effects which are associated with environmental values are too large for spontaneous market solutions across-the-board. Due to the presence of strong forces working against internalisation, feasible solutions will not always involve forced action by everyone, but that someone is induced to move first.

Responsible institutions

It has been argued above that political as well as economic factors hamper internalisation of environmental values. Calls for a complete harmonisation of standards or the imposition of barriers to trade lead to further complications.

---

[1] With strategic complementarities is understood that an increase in one player's strategy increases the optimal strategy of another player. Under such circumstances, it is well-known that coordination problems may give rise to multiple equilibra, and that these may be inefficient (Cooper & John 1988).

The difficulties make it necessary to look for alternative ways to stimulate the internalisation of environmental values.

Given that the markets are sensitive to environmental impacts, trade represents the major vehicle through which new technologies, modes of management, etc., are induced. International goods and factor flows can most effectively reward those who bear the costs and risks of invention and innovation, and punish those who delay internalisation.

In this sense, trade holds the key to improvements in international resource allocation in general, and should be viewed as an ally rather than a foe with respect to the need of improving our management of the environment. Due to the lack of functioning trade in certain respects, however, there is an urgent need to supplement trade with mechanisms which see to it that the common goods are not left out of the markets.

Trade, when the environment matters, does not consist of flows which are restricted to satisfy political gains. Likewise, it is not disconnected from the wealth of information which is necessary to evaluate the true impacts of goods and services on social welfare. This information is not made available spontaneously, however, but needs to be cherished by both national and international institutions. Realising the potential threat against world trade, as well as against the global environment, which emanates from the unresolved conflicts between these two fields, the world's nations should strive for the creation of an independent organisation set to stimulate consideration for environmental values in the international goods and factor markets.

Among the possible points to be included on the agenda of such institutions, the following can be mentioned: (1) Key conflicts in which parties are locked in mutually disadvantageous states should be identified and disclosed. (2) Adequate information should be made available and easily accessible about the record of individual actors, public as well as private, with respect to negative externalities on the environment. (3) The development and diffusion of new technologies in the environmental field should be stimulated. (4) "Minimum requirements" should be defined regarding the management of truly global environmental values, and countries be induced to respect them through the introduction of suitable "carrots" and/or "sticks" .

The challenge is not to create a large bureaucratic body, but a small, efficient and well-known network of institutions whose judgement would be given attention. The overriding objective is to pave the way for a structure that guards the provision of market signals about financial and social rates of return. Rightly designed, such an organisation would help to create first-movers in internalisation, because they would foresee greater gains, while those who act last would experience greater costs. In that situation, the impact of trade will tilt towards enforcing improved management of the environment.

Concluding remarks

The environment suffers from the lack of well-functioning markets while other resources are managed by proper trade. The rules securing a world with relatively free trade are already under severe threat, and "environmentalists" are politically weak compared to "traditional protectionists". Hence, it is crucial that environmental concerns are not used as an excuse to run down the

principles of free trade, and open the door to arbitrary and selective protectionism. That would severely damage the small countries which have weak bargaining power in bilateral trade negotiations. Both the global environment and the world trade system need appropriate coordination of actions in order to handle the environmental problems as well as the principles of free trade.

To find a constructive approach, this paper argues that we need to look for favourable strategic interactions between governments, private firms and consumers—domestically and internationally. Only through the power of international goods and factor flows, however, can those who bear the costs and risks of invention and innovation be fully rewarded, and those who delay internalisation of environmental values expect to be punished. Thus, trade is a key force in inducing change, but it needs to be supplemented by institutions which ensure that the markets can be expected to take environmental impacts into account.

Acknowledgement

Financial support from the Swedish Research Council for the Humanities and Social Sciences is gratefully acknowledged.

References

Andersson, T. 1991, "Government failure—the cause of global environmental mismanagement", *Ecological Economics*, 4:215–236.

Baumol, W. 1971, *Environmental protection, international spillovers and trade.* Stockholm: Almqvist and Wiksell.

Cooper, R. & A. John 1988, "Coordinating coordination failures in Keynesian models", *Quarterly Journal of Economics*, CIII:441–463.

Hillman, A. L. & H. W. Ursprung 1992, "The political economy of interactions between environmental and trade policies", in K. Anderson & R. Blackhurst (eds.), *The greening of world trade issues*, pp. 195–220. New York: Harvester Wheatsheaf.

Hoel, M. 1989, "Global environmental problems: the effects of unilateral actions taken by one country". Mimeo, University of Oslo.

Pigou, A. C. 1932, *The economics of welfare*, (4th ed.). London: Macmillan.

Porter, M. E. 1990, *Competitive advantage of nations.* New York: Free Press.