

# Impact of international trade on natural environment

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## Keywords

International trade, natural environment, trade liberalization, trade policy, environmental policy

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## Abstract

*In this paper we propose to show the economic impact of international trade on the natural environment. Also it is necessary to present the interaction between the international trade and natural environment. A central issue of this scientific approach is how the international trade affects the level and incidence of environmental outcomes. In this sense we have to emphasize that international trade induced environmental damages can be prevented if environmental policy responds to the challenge by tightening up emission standards; but if policy is not responsive, environmental degradation can occur. On the one hand, the international trade promotes growth, that it determines the scale of economy activity increases. On the other hand, more consumption and production will tend to generate more environmental damage. In the contemporary context of economic globalization we mention that trade affects the emission intensity of individual consumer goods and production activities. Last but not the least, we can add that the international trade flows of goods and services have direct environmental impacts. Thus, transportation activities and unwanted invasive species causes emissions have been a consequence of increased trade have been a consequence of increased trade.*

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## 1. Introduction

It is now widely accepted that trade liberalization brings economic benefits through greater efficiency, competition and choice. In this context we consider that trade liberalization effects on natural environment are more complex. Thus, trade liberalization tends to increase the scale of economic activity, and can lead to production moving to areas with lower environmental standards, both of which can add to environmental problems. But by removing price distortions, trade promotes efficient production techniques and resource use, improves access to environmental technologies, and leads to more innovation, all of which provide potential environmental benefits.

More than that, the balance of evidence suggests that, for some pollutants such as sulphur dioxide emissions, trade liberalization has resulted in overall environmental improvements. In other words we can emphasize that in terms of CO<sub>2</sub> emissions, the results are more varied, with a number of studies finding that CO<sub>2</sub> emissions increase overall. Another concern of many national environmental policies has traditionally been on the impacts of production. However, increased trade implies a growing divergence between domestic production and consumption patterns, as well as growing and more complex global supply chains. As a result, there has been a shift of focus towards the environmental impact associated with domestic consumption patterns.

## 2. The linkage between trade liberalization and natural environment

It is important to mention that in fact, trade liberalization and trade policy have positive and negative impacts on the environment. However, a number of conditions should be met to ensure that the net gains deriving from trade liberalization will support and reinforce the protection of the environment. One essential condition for making sure that trade and environment are mutually supportive is to ensure that the trade liberalization process is paralleled with the development and strengthening of effective and non-protectionist environmental legislation, at national, regional and international levels. Also we can say the environmental policies could, in turn, provide an incentive for technological innovations, promote economic efficiency and, consequently, improve productivity. As a result of increasing global economic inter-dependence and further trade

liberalization as well as growing pressure on the environment and the use of natural resources, there is an ever growing inter-face between trade and environment. It is widely recognised that trade and environment can be mutually supportive, but, differences remain on effective implementation. In this context we believe that trade policy has also a role to play in actively supporting sustainable trade flows and, in particular, environmentally friendly trade. In the meanwhile Trade policy and trade related instruments should be further encouraged to act as a sustainable driver by providing incentives for more sustainable trade flows. This is valid at the multilateral level but even more so at the regional and bilateral levels where the identification of positive synergies among trading partners as well as convergence and/or co-operation should be easier than is the case at the international level. Trade tools could, for instance, be instrumental in making tangible progress towards more sustainable consumption and production patterns. Economic instruments also need to be more actively developed, notably with a view to allow for the necessary internalization of external environmental costs. In addition, positive synergies between trade, environment and development should be further considered, particularly regarding the elimination of environmentally damaging subsidies and the promotion of environmentally friendly goods and services, with a special focus on those originating in Developing Countries (DCs).

The literature on the interaction between trade and the environment has focused on several related questions. Much of the emphasis has been on whether globalization tends to shift pollution-intensive industry to countries with relatively weak environmental policy (the pollution haven hypothesis). Since environmental outcomes are highly dependent on policy, a second key question has been how environmental policy responds to globalization.

The bottom line of this hypothesis is that competitive pressure will induce governments to weaken environmental policy to shield domestic firms from international competition. But there are also concerns that governments will manipulate (and sometimes tighten up), some types of environmental policy to restrict market access from imports. There are issues of linkages between trade agreements and environmental policy, such as whether some harmonization of environmental policies is needed, or whether weak environmental policy should be considered an unfair trade subsidy.

The pollution haven hypothesis is based on the concern that weak environmental policy attracts pollution-intensive industry. The concerns about competitiveness are based on the idea that stringent environmental policy reduces productivity and drives polluting firms away. Market access concerns are based on fears that environmental policy can be manipulated to favor domestic firms at the expense of foreigners. It is therefore not surprising that a large literature studies the relation between environmental policy and trade flows.

The effect of trade on environmental outcomes also fundamentally depends on the policy regime. Trade-induced environmental damages can be prevented if environmental policy responds to the challenge by tightening up emission standards; but if policy is not responsive, environmental degradation can occur.

The composition of economic activity also changes with trade. Exporting industries will expand; import-competing industries will contract. There are also firm-level effects: the recent international trade literature has emphasized that only the most productive firms tend to export and so trade tends to cause some firms to expand and others to contract or exit. Trade also affects the emission intensity of individual consumer goods and production activities. This *technique* effect may be caused directly by trade: imported consumption goods may have different emission intensities than locally produced goods; and imported technology, raw materials, or intermediate inputs affect producer emission intensities. In the contemporary context of production globalization we propose a schematic overview which illustrates the influence of trade liberalization on the natural environment as can be seen in the figure below.

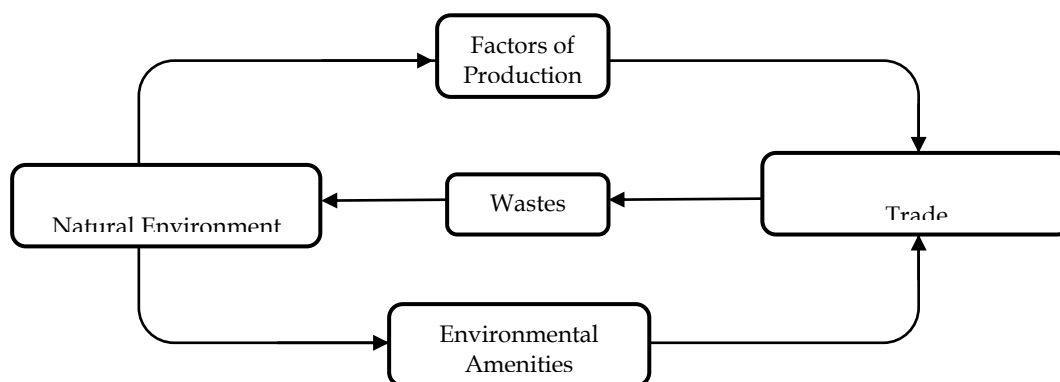


Figure 1. A schematic view of how the trade liberalization effects on the natural environment.

Emission intensities may also change with the scale of production. And trade may induce endogenous environmental policy responses that induce changes in emission intensities of both consumption and production.

In thinking about how trade affects environmental outcomes, it is useful to distinguish between pollution generated by consumers and that generated by producers. The key difference here is in how domestic and foreign firms are affected by environmental regulations. If pollution is generated by producers, then a possible response of domestic firms to environmental regulations that are more stringent than those prevailing in other countries is to either concede the market to imports, or to move production to a country with weaker environmental policy.

In contrast, when pollution is generated by consumption, all firms wanting to sell in the domestic markets are affected by domestic environmental regulations applied to consumption goods. One cannot escape these regulations by shifting production to another country.

The distinction between consumption and production as a source of pollution will turn out to be important both in determining how trade affects the environment and in influencing the types of policy responses by governments. Some environmental problems result in a deterioration of natural capital and affect economic productivity. Examples include soil erosion, the depletion of fish stocks, either, from overfishing or from habitat degradation, and serious human health deterioration from pollution. Other environmental problems reduce the quality of life, but have only small effects on economic productivity. Examples might include water pollution which reduces recreational activities or mild forms of air pollution which causes health problems that do not have significant effects on worker productivity. With these types of environmental problems, increased environmental degradation can lead to both a long-run decline in real income and a decline in environmental quality. In its simplest form, the pollution haven hypothesis is that trade liberalization will cause pollution-intensive industry to shift to countries with relatively weak environmental policy.

### 3. Environmental policy -as instrument to reduce the negative effects of trade liberalization on natural environment.

Much of the concern in policy debates about trade and environment is that governments will not choose to implement efficient environmental policy and that openness to trade and investment will amplify this. There are several reasons why policy may be inefficient, but here I will focus on two. First, a large country may wish to exert its monopoly and monopsony power in international markets and influence its terms of trade. This can be done by using trade policy; however if free trade agreements preclude the use of trade policy, governments may look for substitutes—manipulating environmental policy is one possibility. Second, environmental policy is influenced by political economy considerations. Governments face pressure to help industries become more competitive, to preserve and promote employment, and to help maintain profits of influential firms. There are many instruments available to do this, but trade agreements tend to reduce the ability of governments to use trade policy and subsidies to achieve these ends. Again, manipulation of

environmental policy may be an option. Both the terms of trade and political economy motives for intervention highlight a key challenge for trade agreements. Trade agreements are incomplete contracts. They restrict explicit barriers to trade, some domestic policy instruments (such as some subsidies), and some overtly discriminatory behavior. But they leave most domestic policy instruments to the discretion of governments. Because any domestic policy that affects either domestic demand or supply has an influence on trade, it can be used as a substitute for trade policy. For example, a government that previously favored an export industry with export subsidies still faces the same incentives to favor the industry after a trade agreement has been signed. All that has changed is the available policy instrument set. Since weak environmental policy is an implicit subsidy, the government may face pressure to weaken environmental policy. This, in essence, is what lies behind the race to the bottom argument.

How well does this argument hold up? The evidence reviewed earlier that environmental policy does affect trade liberalization suggests that manipulation of environmental is indeed an option for a government that faces pressure to favor a polluting industry. The theoretical case for such intervention is, however, less clear. The results are mixed, and depend on market structure, the type of pollution, and the government's motivation. First, it is important to distinguish between production- and consumption-generated pollution. In this case we can add that a government responding to the interests of polluting firms will weaken environmental policy in the case of production-generated pollution, but may tighten up policy if pollution is consumption-generated. Since both domestic and foreign firms are equally affected by environmental regulations targeting consumption generated pollution, political resistance by producers will be weaker than in the case of production-generated pollution where regulation affects domestic producers but not foreign producers. Second, environmental policy is only one of many instruments available for governments to protect domestic producers. Although trade agreements may increase the pressure on governments to look for alternative ways of protecting firms, governments also have to be wary of the costs of these alternative instruments. Weaker environmental policy will increase pollution, which increases social costs. These costs have to be weighed against the political costs of other instruments, such as changes in domestic taxes or subsidies, or other regulations that affect the firm. Most of the literature avoids this issue by simply assuming that environmental policy is the only available instrument. If governments are motivated by terms of trade concerns, then the optimal trade policy targeting the polluting sector is an import tax if the polluting industry is import - competing, and an export tax if the polluting industry is a net exporter. Hence a government motivated only by terms of trade motives would have incentives to tighten up polluting policy on exporters and weaken it in the import-competing sector.

Trade liberalization may lead to weak environmental policy, there are also concerns that environmental policy may be manipulated (and in some cases set too stringently) to restrict access by foreigners to domestic markets. While it is clear that protectionist governments have incentives to impose more stringent environmental regulations on foreign firms. Than on domestic firms, trade agreements for the most part prohibit overt discrimination in two ways. First, there is a distinction between process standards and product standards. Process standards refer to restrictions on how a good is produced (such as emission intensity of production), but which do not affect its final characteristics. Product standards refer to restrictions on the characteristics of a product (such as the emissions generated during consumption).

Trade agreements generally do not allow governments to impose process standards or pollution content taxes on imports. That is, the norm is that environmental policy that targets production generated pollution will vary across countries, and noncompliance with such standards is not legitimate grounds for restricting market access.

Such a norm is consistent with efficiency arguments that imply that for pollution with country-specific effects, the optimal environmental standard should vary across countries (because of differences in incomes, local climate, geography, and pressures on the local environment).

As we can see in Figure 2 the liberalization of trade in goods and services is expected to generate utility (economic well-being) for the entire society. At the same time, given that pollution is an undesirable by product of production activities, households' economic well-being would be negatively impacted due to deterioration in environmental quality.

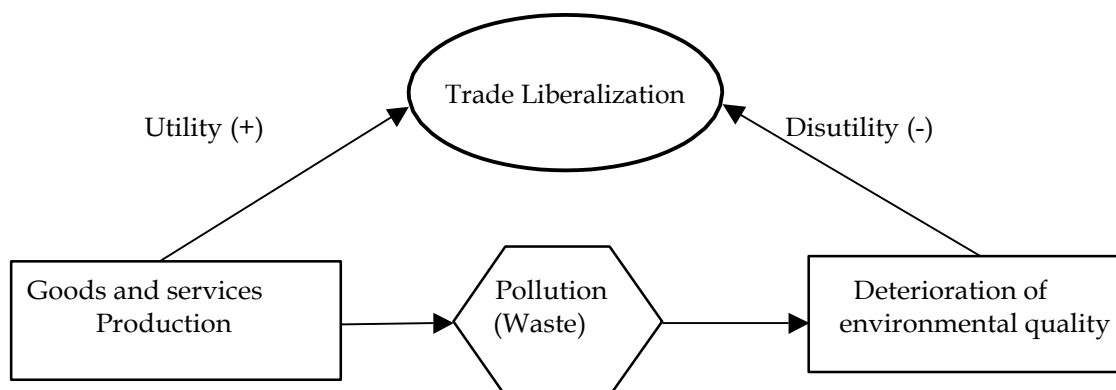


Figure 2. Correlation between trade liberalization and environmental quality.

However, because weak environmental policy is an implicit subsidy to pollution-intensive production, the regime is inconsistent with WTO rules which allow governments to impose countervailing tariffs in response to export subsidies. Nevertheless, implementation of a “green countervail” regime would almost certainly be unworkable because of the difficulty in establishing the efficient environmental policy in every relevant case. Second, while governments are free to impose product standards, and make compliance with such standards a condition of market access, trade agreements discipline the use of such standards in various ways.

The World Trade Organization (WTO) uses a national treatment rule foreign products are expected to be subject to a standard no more stringent than that applied to local products. More recently, the WTO has required that there be some scientific basis for product standards as well. Other trade agreements go farther in the European Union, for example, there is some centralization and in many cases harmonization in the regulation of product standards. The analysis of the interaction between market access and environmental policy remains an active area of research. There are two key themes in this literature. The first is that even in a national treatment regime, governments have considerable scope to manipulate standards to favor local producers (because of heterogeneity between local and foreign producers in compliance costs for different types of standards). The second issue is that nondiscrimination policies may constrain governments and make it more difficult to implement appropriate environmental regulation. This continues to be a contentious area in the policy realm, since many trade disputes (such as the shrimp-turtle case, restrictions on genetically modified organisms, and the beef hormone revolve around tensions between market access and the flexibility of governments to design their own environmental policies.

#### 4. Conclusions

The trade liberalization effects on natural environment has deepened in recent years, moving from identifying broad effects on the economy generally, to analyzing effects in specific market sectors. In general terms, the countries governments view trade liberalization as a positive agent for the environment – by improving resource allocation, promoting economic growth and increasing general welfare – provided effective environmental policies are in place. On the other hand, trade can threaten the sustainability of renewable resources when the management regime is weak, and the depletion of such resources can have long-lasting negative effects on communities. And while weak environmental policy alone is not the major determinant of trade patterns, it is a contributing factor, and so industries that are both pollution intensive and intensive



in unskilled labor will often end up in regions with relatively weak environmental policy. Another reason not to be too complacent is that a major lesson from the literature on trade and the environment is that active policy intervention matters for environmental outcomes. This is perhaps at the root of some of the tension that arises at times between those working toward liberalized trade and those working for a more sustainable environment.

Finally, we can emphasize that in trade liberalization agenda, much of the focus is on convincing governments to dismantle policy regimes that they have created to protect industrial activity. In contrast, the environmental agenda requires the creation and enforcement of policy regimes: setting up tax, quota, and other regulatory mechanisms to internalize externalities and ensure environmentally friendly outcomes. Thus, there is no reason in principle for these two agendas to be in conflict in both cases, the goal is to ensure everyone faces the true social costs of their activities. But in practice, the agendas are different, and this creates challenges in the policy arena.

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