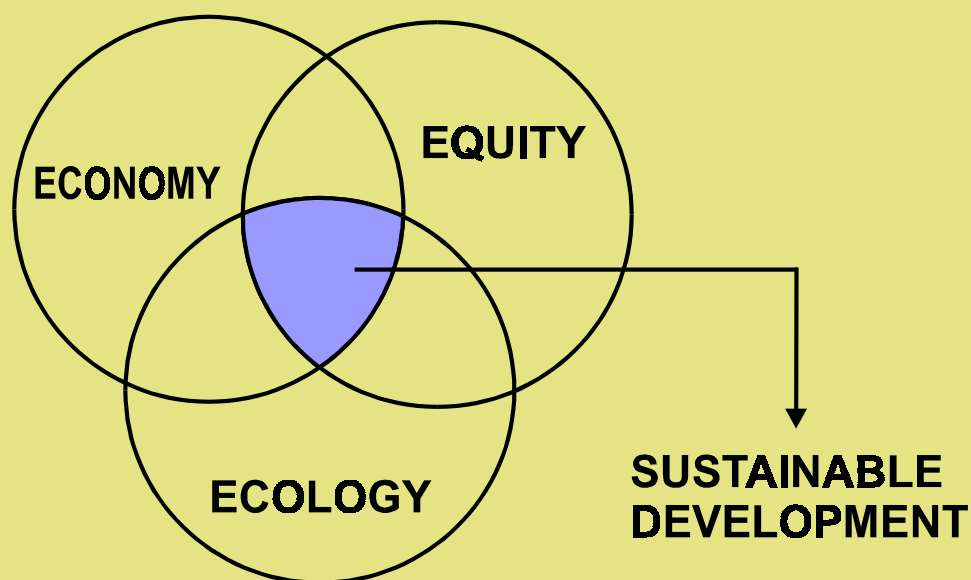


# Tariff Escalation— A Tax on Sustainability



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This study has been researched and written by Dr Basudeb Guha-Khasnobis of Indira Gandhi Institute of Development Research, Bombay, India. Comments and suggestions by Prof. Jasper Okelo, Ms Caroline LeQuesne, Ms Nadine Keim, Mr Andrew Crosby, Mr Raghav Narsalay and others on an earlier draft of the study are gratefully acknowledged and incorporated. The opinions expressed in the paper, and any errors of fact or interpretation or omission are the responsibility of the author, and do not reflect the agreed policy positions of the publishers or the commentators or the organisations with which they are associated.

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# Prologue

## What is Sustainable Development?

The central concept of sustainable development was introduced to the world by the Brundtland Commission's famous report: "Our Common Future", which reads thus:

*Sustainable development seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future. It recognises that the problems of poverty and underdevelopment cannot be solved unless we have a new era of growth*

"Sustainable development seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future. *Far from requiring the cessation of economic growth, it recognises that the problems of poverty and underdevelopment cannot be solved unless we have a new era of growth in which developing countries play a larger role and reap large benefits*" (emphasis added).

The Rio Declaration of 1992 recognised this fact, when it observed:

"An open multilateral trading system makes possible a more efficient allocation and use of resources and thereby contributes to an increase in production and income, and to lessen demands on the environment".

The Preamble of the Agreement establishing the World Trade Organisation, which spells out its core values, also accepts this vital concern:

"Recognising that their relations in the field of trade and economic endeavour should be conducted with a view to raising standards of living, ensuring full employment and a large and steadily growing volume of real income and effective demand, and expanding the production of and trade in goods and services, while allowing for the optimal use the world's resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment and enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development."

*The major difference is between environmentalists and developmentalists. The former believe that for development to be sustainable, environment occupies the top place*

From the aforesaid, it is abundantly clear that unless trade and economies grow, and needs met *everywhere*, development cannot be sustainable.

## Why Sustainable Development?<sup>1</sup>

Sustainable development means different things to different persons. The major difference is between environmentalists and developmentalists. The former believe that for development to be sustainable, environment occupies the top place. That is to say resources are finite and unless there are better environmental protection measures, development will be unsustainable. Manifest in this is the arrogant advice to developing countries:

"Look what we have done to our environment by developing a consumer culture, so don't commit the same mistake."

Developmentalists believe that in the face of underdevelopment, environment protection measures have a lesser priority than development *per se*. That is to say, hungry people do not care what their actions do to the environment. Thus it is also said that poverty is the biggest polluter. Many surveys, including ones carried out by us in India and Nepal, have shown that both politicians and people prioritise jobs over environment.

***Developmentalists believe that in the face of underdevelopment, environment protection measures have a lesser priority than development per se***

Therefore, sustainable development is not only about environmental protection. It is also about human beings. Manifest in this is the imperative need of economic equity in the world to ensure—at the least—that people are not hungry in one part of the world, while overfed in another part.

The problem of unsustainable development is exacerbated by the iniquitous tariff escalation which is a tax on environment and development.

In short, unless developing countries get the opportunities for increasing their income, they cannot develop sustainably or protect their environment.

### **The Question**

The moot point is whether or not the prevailing escalated tariff structure in most of the developed countries is in fact a hindrance to sustainable development. The answer is yes, because it prevents:

***The problem of unsustainable development is exacerbated by the iniquitous tariff escalation which is a tax on environment and development***

- the possibility of achieving a new era of growth in which developing countries play a large role and reap large benefits;
- the formation of an open multilateral trading system which makes possible more efficient allocation and use of resources and to lessen demands on environment; and
- the optimal use the world's resources seeking both to protect and preserve the environment and enhance the means for doing so.

Unless these inequities are addressed through coherent global policies, the poor will remain poor.

### **Some Thoughts**

A recent note prepared by the WTO Secretariat<sup>2</sup> in the context of Committee on Trade and Environment (CTE) arrives at the conclusion that in most countries studied (particularly the Quad Group—the US, the EU, Japan and Canada) bound post Uruguay Round tariffs imply a nominal tariff escalation in such sectors as metals, leather products and to some extent also wood products and furniture.

***In most countries studied (particularly the Quad Group—the US, the EU, Japan and Canada) bound post Uruguay Round tariffs imply a nominal tariff escalation***

The study further maintains that in view of the large market base of these countries, a decline in tariffs (in later stages of production chain) would imply a significant increase in market access for other countries supplying them with exports.

Furthermore, a recent FAO study<sup>3</sup> argued that tariff escalation may present an important problem for diversifying exports of developing countries. The study continues—though food processing is a major export industry of developing countries, their exports are largely concentrated in the first stage of processing.

*As standards of living outside the OECD are far too low (poverty is a key result of environmental degradation), future policy must build in greater equity considerations*

More advanced food industry products make up only five percent of the agricultural exports of least developed countries and 16.6 percent of those of developing countries as a whole, against 32.5 percent for developed countries. The study concludes that for some commodities tariff escalation constitutes probably one of the major constraints to vertical diversification of their agricultural exports.

### **What Next!**

In view of the above mentioned hindrances (due to tariff escalation) towards achieving sustainable development what should be the policy response in making trade, environment as well as development mutually compatible and equitable.

In this context, the International Institute for Sustainable Development (IISD, Winnipeg, Canada) has developed a set of trade and sustainable development objectives under the principles of making trade and the environment mutually compatible.<sup>4</sup>

Following are the brief descriptions of the relevant principles:

- **Efficiency/cost externalisation:** Efficiency and cost internalisation entail the progressive and predictable reflection of unpaid environmental costs in the price of products so as to minimise inputs per unit of output and promote progressive trade liberalisation;
- **Equity:** Further trade liberalisation and the sharing of capital, knowledge and technology is needed to promote greater equity today and tomorrow (within and between countries, as well as groups of countries) given past, present and expected use of the environment. As standards of living outside the OECD are far too low (poverty is a key result of environmental degradation), future policy must build in greater equity considerations;
- **International co-operation:** More aggressive efforts should be made to develop common understanding and approaches as to how our multilateral system should evolve and how questions relating to a variety of issues (such as tariff escalation) could be addressed, including more open, equitable, effective and alternative dispute settlement processes; and
- **Openness:** Timely, easy and full access to information by all affected or interested parties, and public participation and accountability in the decision-making process informed by considerations of feasibility.

*Efforts should be made to develop common understanding and approaches as to how our multilateral system should evolve and how questions relating to a variety of issues (such as tariff escalation) could be addressed*

Jaipur  
December 1997

**Pradeep S Mehta**  
**Secretary General**

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1 *Economiquity*, CUTS-CITEE Newsletter, No. 4, Sept-Dec. 1997.  
2 *Tariff Escalation*, WT/CTE/W/25, Geneva, March 1996.  
3 Lindland, Jostein, *The Impact of the Uruguay Round on Tariff Escalation in Agricultural Products*, FAO, ESCP No. 3, April, 1997.  
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## Executive Summary

***The existence of escalated tariff structure results in a “third-best” allocation of global resources***

From the first principle of basic theory of international trade it can be stated that the existence of escalated tariff structure results in a “third-best” allocation of global resources. Tariff escalation creates pressure on developing countries to export products that go through the minimum amount of processing at home.

***Tariff escalation has the potential of hindering the growth of the exporting countries***

Furthermore, it prevents specialisation according to the natural comparative advantage. The main effect (when countries defy the natural forces of comparative advantage) is that of reduction of welfare in both sets of countries—developing as well as developed, and a tax on sustainability, i.e. sustainable development.

Broadly speaking, tariff escalation is defined as a phenomenon when relatively higher rates of tariffs are applied to imports of processed commodities compared to those on unprocessed commodities or raw materials.

***In the long run the removal of tariff escalation will bring about a relative increase in processing activities and thus bring a larger share of economic activities under the purview of environmental legislation of the country***

Tariff escalation has the potential of hindering the growth of manufacturing industries, and thus the rate of growth of the economy (since manufacturing sector provided higher value added in national income) in the exporting countries. The reason is that an exporter might find it easier to export unprocessed goods in the presence of escalated tariff structure.

In the light of the above mentioned effect of the existence of tariff escalation, the relevant issue is whether tariff escalation causes harm to the environment. The study shows that there are several ways through which tariff escalation can actually harm the environment of the countries depending heavily on exports of raw materials or unprocessed goods.

The underlying notion is that in the long run the removal of tariff escalation will surely bring about, among others, a relative increase in processing activities and thus bring a larger share of economic activities under the purview of environmental legislation of the country. At the same time, the short run effect of removal of escalated tariff structure is unequivocally positive for global environment.

***The novel part of the study is that it establishes the relationship (and thus the effect) between tariff escalation and the balance of trade of developing as well as developed countries***

The study brings forth direct as well as indirect evidence of escalated tariffs that exist in developed countries, and for a number of product categories that are of crucial importance in the growth process of developing countries. However, the novel part of the study is that it establishes the relationship (and thus the effect) between tariff escalation and the balance of trade of developing as well as developed countries.

At the outset mention is to be made that reductions in tariff rates during the successive rounds of trade negotiations under the General



***The issue is not that of average tariff rates, but that of escalation in the existing structure of tariffs***

Agreement of Tariffs and Trade (GATT) created a false notion among the trade practitioners, especially from the developed countries. The *false* notion had turned into complacency after the Uruguay Round of trade negotiations—rates of reductions of tariffs were highest in that Round.

The point which was completely missed was that the issue is *not* that of average tariff rates, but that of *escalation* in the existing structure of tariffs. The fact is that even when the average rate of tariff is only four percent (in the post Uruguay Round), it does not guarantee that tariff escalation is no longer a problem.

Within the chosen commodity group, the average tariff rates in the post Uruguay Round are remarkably higher for higher levels of processing for every commodity except tobacco and paper. For example, in case of leather, there is no tariff on the import of raw leather in developed countries, but a 4.1 percent tariff on the import of finished goods.

Furthermore, there is a clear bias against imports from developing countries as the average tariff rates in developed countries (for corresponding stages of production—raw, semi-processed and final) are distinctly lower than the (average) rates imposed on imports from the developing countries.

***The evidence shows that the bias against finished industrial products from developing countries has deepened in the developed country markets after the Uruguay Round of trade negotiations***

Even further, the evidence shows that the bias against finished industrial products from developing countries has deepened in the developed country markets after the Uruguay Round of trade negotiations. For instance, the change in tariff escalation (after the Uruguay Round) between the raw materials and semi-processed stages is -38 percent compared to only -23 percent change between the semi-processed and finished product stages.

However, tariff escalation is only *one* of several methods that can be employed by a country to restrict access to its final goods market for foreign producers. The other methods can broadly be classified into 'non-tariff barriers'. The position of developing countries is weak (vis-à-vis the non-tariff barriers) due to their inadequate infrastructure and capacity (i.e. low bargaining power of developing countries) to approach the issue politically.

But the basic premise is countries that *impose* escalated trade barriers will tend to import less of finished goods. Also, countries that face escalated trade barriers will tend to export more of unfinished products or raw materials. The premise is proved by taking into account the pattern of imports in the 'food and beverages' category (with two sub-categories—primary and processed) in selected developed and developing countries.

***Many developing countries have been forced to export raw materials in the past decade. The difficulties with this pattern of international trade indicates that increasing raw materials export, in the face of tariff escalation, is not sustainable in the long run***

On the basis of the above mentioned evidence and arguments, it is shown that many developing countries have been forced to export raw materials in the past decade. However, the difficulties with this pattern of international trade indicates that increasing raw materials export, in the face of tariff escalation, is *not* sustainable in the long run.

The indicator of unsustainable development is further corroborated by arguments based on an analytical model on the relationship between tariff escalation and the balance of trade. The broad result of the model

**Both developed as well as developing countries actually have incentives to remove escalated tariffs since this will improve their trade balance.**

indicates that both developed as well as developing countries actually have incentives to remove escalated tariffs since this will improve their trade balance, in the short as well as in the long run.

The necessary and sufficient conditions for this to happen are that the non-traded goods sector be relatively more capital intensive than the exportable sector as well as the processed importable sector. Moreover, the removal of tariff escalation will lead to efficient allocation of resources (towards “first-best” or at least “second-best”) which in turn will raise income and welfare in any country.

Then the moot question is why an escalated tariff structure exists in developed countries. The answer to this can be found in the existing geo-politics of international trade which is influenced by domestic political considerations, i.e. the existence of coalition of interests between developed countries producers (of processed import substitutes) and their governments.

Furthermore, the issue of political economy indicates a tricky (no win) situation (the devil and the deep sea) for developing countries. The *devil* is: export raw materials and fall into the trap of unsustainable development. While the *deep sea* is: retaliate with escalated tariffs and invite a balance of trade crisis. Direct evidence of tariff escalation suggest that a number of countries are indeed pursuing the first option at least partially.

**The issue of political economy indicates a tricky (no win) situation (the devil and the deep sea) for developing countries. A pro-active way out is formation and strengthening of the coalition of interests between developed countries consumers’ and developing countries producers’ (of processed goods)**

At the same time the *choices* are in fact a politically reactive way of approaching the issue. A pro-active way out is formation and strengthening of the coalition of interests between developed countries consumers and developing countries producers (of processed goods).

The fact is that some of the poorest developing countries in the Asia-Pacific region depict an unhealthy trend of exporting too much of raw materials and other natural resource intensive products.

The broad inference is that these countries are only trying to make up for the loss of access to markets for manufactured goods due to tariff and non-tariff barriers in developed countries, especially the tariff escalation. The basis of that inference is that they are politically weak to approach the issue of tariff escalation.

However, the evils of tariff escalation are not just restricted to lower imports of processed goods in developed countries. In the long run, tariff escalation can trigger off economic, environmental as well as social (from equity viewpoint) crises of much more serious nature.

**Otherwise, in the long run, tariff escalation can trigger off economic, environmental as well as social (from equity viewpoint) crises of much more serious nature**

This is especially true when developing countries are politically weak, and their policy makers are confronted with choices between the devil and the deep sea.

# Introduction

## What is Tariff Escalation?

***A country may choose to impose no tariff on the import of raw leather, but positive tariffs on the import of leather manufactures***

Tariff escalation is said to occur when relatively higher rates of tariffs are applied to imports of processed goods compared to those on unprocessed goods or raw materials. For instance, a country may choose to impose no tariff on the import of raw leather, but positive tariffs on the import of leather manufactures such as shoes, garments or accessories. When an exporter faces an escalated tariff structure, it will find it easier to export unprocessed goods or raw materials only.

Thus, tariff escalation has the potential of hindering the growth of manufacturing (processed) industries in the exporting countries. Since manufacturing industries allow for higher value added, escalated tariff structures in developed countries can reduce the rate of growth of income in developing countries.

## Can Tariff Escalation Harm the Environment?

***Not only does tariff escalation results in inequities in world trade, but also undermine the novelty of the notion—growth with equity***

There are many possible ways in which tariff escalation may hurt the environment. First, if a country is forced to export primary goods alone, it is likely to cause over-depletion of natural resources and disturb the ecological balance of the region. Second, the slower rate of growth of income will leave less resource available for efficient environmental management in developing countries. Third, not only does it results in inequities in world trade, but also undermine the novelty of the notion—growth *with* equity. Fourth, if processing is only done in developed countries, it may be carried out with relatively capital intensive techniques (and hence, mis-allocation of resources), compared to developing countries where the level of mechanisation is generally lower.

On the other hand, the reverse is true if processing is allowed to be done in developing countries. It may be carried out with relatively labour intensive techniques, compared to developed countries (i.e. proper allocation of resources). And, labour intensive techniques are likely to be more environment friendly. There is another important reason for why the removal of tariff escalation can benefit the environment.

***The removal of tariff escalation can potentially bring about a relative increase in processing activities and thus a larger share of economic activities under the purview of environmental legislation***

In developing countries, environmental controls are more effective on processing industries which are mostly in the formal sector, compared to the non-processing industries which constitutes the bulk of the informal sector. Therefore, the removal of tariff escalation can potentially bring about a relative increase in processing activities (structural change towards formal sector) and thus bring a larger share of economic activities under the purview of environmental legislation in the country.

## Removal of Escalated Tariff Structure

*If the removal of tariff escalation results in improvement in balance of trade positions of both developed as well as developing countries then it is optimal for them to adopt (at least theoretically) such a trade policy*

The main issue is how to derive the condition(s) under which both developed as well as developing countries will find advantageous to remove escalated tariff structure. One way of deriving the condition(s) is to analyse the relationship between tariff escalation and the balance of trade. If the removal of tariff escalation results in improvement in balance of trade positions of both sets of countries then it is optimal for them to adopt (at least theoretically) such a trade policy.

However, the main hindrance is the existence of a political coalition between producers (of processed importable in developed countries) and governments of developed countries. But for the achievement of the goal of the removal of tariff escalation (and thus, sustainable global development) the counter-coalition between consumers of developed countries and producers (of processed goods) of developing countries has to be highlighted.

### About the Study

*The main hindrance is the existence of a political coalition between producers (of processed importable in developed countries) and governments of developed countries, and thus the counter-coalition between consumers of developed countries and producers (of processed goods) of developing countries has to be highlighted*

This study is prepared with the objective of analysing different aspects of tariff escalation.

Part I analyses the basic notion of the study—a tax on sustainability.

Part II deals with some direct evidence on escalated tariffs that continue to exist in developed countries for a number of product categories that are of crucial importance in the growth processes of many developing countries.

Part III will analyse some indirect evidence of escalated trade barriers as reflected in the pattern of import and export of raw materials vis-à-vis processed goods for a select set of developed as well as developing countries.

Part IV brings out the relationship between tariff escalation and the balance of trade.

Part V will describe the political economy issue of the debate.

Part VI will draw up conclusions by bringing together different arguments of the study.

Furthermore, detail theoretical analysis of the relationship between tariff escalation and trade balance is provided in the appendix to the study.

*Detail theoretical analysis of the relationship between tariff escalation and trade balance is provided in the appendix to the study*

## Part I

### A Tax on Sustainability

***From the first principle of basic trade theory, tariff itself is distortionary. A distorted (escalated, for instance) tariff structure is even worse, for it results in a “third-best” allocation of resources***

In spite of reductions in tariff rates, as envisaged in the Uruguay Round of multilateral trade negotiations, the existing tariff structure reveals escalation and is biased against the interests of developing as well as developed countries. From the first principle of basic trade theory, tariff itself is distortionary, and by definition, reduces total income by pushing the global economic system into the “second-best” world. A distorted (escalated, for instance) tariff structure is even worse, for it results in a “third-best” allocation of resources.

The first and foremost effect of a distorted tariff structure is thus to reduce income in all countries (through mis-allocation of resources). The reduction in income automatically makes less resources available for the protection of environment. It is widely recognised among environmentalists in developing as well as developed countries that resource crunch is the single most important obstacle in the launching of programmes to protect the environment. Tariff escalation makes the matter worse.

***Tariff escalation creates pressure on developing countries to export products that go through the minimum amount of processing at home***

Tariff escalation creates pressure on developing countries to export products that go through the minimum amount of processing at home. These are inevitably raw materials or some primitive manufactures that command low prices in the world market. Developing countries often try to make up for the low prices that their exports command by increasing the volume of exports. Among others, this involves the cultivation of low quality or marginal lands as well as deforestation.

Both of these practices have disastrous consequences for the environment. The forced cultivation of low quality lands implies that the productivity of the farmer is reduced. That in turn reduces income, aggravate poverty and renders environmental protection a distant dream. The effects of deforestation are too well documented to be repeated here.

Furthermore, tariff escalation prevents specialisation according to natural comparative advantage. The basic postulate of international trade theory is that world income is maximised when countries produce what they are best at, i.e. where they have a comparative advantage. There is no gainsaying of the fact that developing countries have natural comparative advantage in labour intensive processing activities.

***When countries defy the natural forces of comparative advantage, income and hence welfare (both consumers’ as well as producers’) is reduced, for developing as well as developed countries***

This, however, do not deny the truth that they also have comparative advantage in exports of unprocessed raw materials. However, the main result from the basic postulate remains the same—when countries defy the natural forces of comparative advantage, income and hence welfare (both consumers’ as well as producers’—dead weight loss) is reduced, for developing as well as developed countries.

***The strongest argument against is that the imposition of escalated tariffs results in mis-allocation of resources (and consequently reduction in welfare) in developed world as well***

The theoretical findings of the study (derived in detail in the appendix) clearly indicate that both sets of countries have no incentive to impose escalated tariff structure in their imports. There is a fictitious notion in some quarters (the believers of *begger-thy-neighbour* trade policy) that developed countries do have an incentive to do the same. The strongest argument against such notion is that the imposition of escalated tariffs results in mis-allocation of resources (and consequently reduction in welfare) in developed world as well.

In the short run, their producers may find it 'optimal' (from producers point of view, and not from that of environment) to allocate resources in those activities where they do not have natural comparative advantage. However, this does not prevent the conclusion that in the long run, sub-optimal allocation of resources would result in global environmental loss. Among other things, this prevents the adoption of better technologies (and hence optimal allocation of resources) which could be environment friendly.

***For sustainable development it is necessary that all the factors of sustainability (economy, ecology and equity) should have equal proportion in the domain of sustainable development***

In sum, for sustainable development (in this case through the removal of escalated tariff structure) it is necessary that all the factors of sustainability (economy, ecology and equity) should have equal proportion in the domain of sustainable development. In the long run, the removal of tariff escalation achieves that goal by:

- improving the trade balance so that the position of the economy is improved;
- sustaining the existing ecology through a stop to deforestation and other environmentally unsustainable production practices (i.e. through proper allocation of resources); and
- reducing inequity (poverty) through enforcement of above mentioned objectives.

## Part II

### Direct Evidence on Tariff Escalation

***The issue is not that of average tariff rates, but that of escalation in the existing structure of tariffs***

The reductions in overall tariff rates during the successive rounds of the General Agreement on Tariffs and Trade (GATT), including the Uruguay Round, seem to have created a sense of complacency amongst trade activists, especially from the developed countries. The basic tone of response, if queried about the importance of tariff escalation in world trade at present, is the following:

We know that the post Uruguay Round average tariff rates are only between 3.5 to 4.0 percent. So why bother about tariff escalation?

In a response like the above, the point is missed entirely. The issue is *not* that of average tariff rates, but that of *escalation* in the existing structure of tariffs. That calls for an investigation—not merely of tariff rates on a *final commodity* but that of tariff rates at different *stages of production* of the commodity. A simple arithmetic reality is as follows:

If the tariff rate on a final product is even as low as, say, .001 percent, but that on an earlier (unprocessed or semi-processed) stage is 0 percent, the rate of escalation between the two stages is still *infinite*!

***The rate of tariff escalation is defined as the ratio of the difference between tariff rates in successive stages of production over that of the earlier stage***

In simple words, the rate of tariff escalation is defined as the ratio of the difference between tariff rates in successive stages of production over that of the earlier stage.

Thus, the fact that post Uruguay Round average tariff rate is as low as 4.0 percent, in itself, does *not* guarantee that tariff escalation is no longer a problem.

Detailed evidence of escalation is provided in Table 1. Here, the weighted average tariff rates on 12 commodity chains in developed country markets are reported.

Although the absolute rates have gone down after the Uruguay Round, the average tariff rates are remarkably high for higher levels of processing for every commodity except tobacco and paper. In the case of paper, the absence of tariff escalation does not really mean much, since processing in this industry is highly capital-intensive.

***In leather, for instance, there is no tariff on the import of raw leather in developed countries, but a 4.1 percent tariff on the import of finished products***

In all other groups, the tariff rates continue to be higher for finished products even after the Uruguay Round adjustments. In leather, for instance, there is no tariff on the import of raw leather in developed countries, but a 4.1 percent tariff on the import of finished products. In rubber, wood, jute and tin the same pattern prevails, viz., no tariff at the raw material stage but positive tariffs at the final stages. As mentioned above, in arithmetic terms, these sectors exhibit infinite tariff escalation. The rates of escalation are very high, although not infinite, in copper, nickel, lead, aluminium and zinc.<sup>1</sup>

## Bias Against Developing Countries

**Not only there is escalation of tariffs,  
but they are also biased against  
developing countries on the whole**

In Table 2, columns 2, 3 and 4 report average tariff rates at different stages of production on total imports in three developed country markets, the U.S., the European Common Market and Japan. Column 5 reports the average tariff rate at semi and processed stages of imports from developing countries alone. This table reveals that not only there is escalation of tariffs (the rates in columns 2, 3 and 4 are progressively higher), they are also biased against developing countries on the whole (the figures in column 5 are higher than any other figure in the corresponding row).

<b>Table 1: Tariff Averages in the Developed Countries</b>		
<b>Product by stage of processing</b>	<b>Pre-UR</b>	<b>Post-UR</b>
Hides, skin and leather		
Raw	0.1	0.1
Semi-processed	4.6	3.6
Finished products	5.2	4.1
Rubber		
Raw	0.1	0.0
Semi-processed	5.5	3.3
Finished products	5.1	3.6
Wood		
Rough wood	0.0	0.0
Wood-based panels	9.4	6.5
Semi-processed	0.9	0.4
Wood articles	4.7	1.6
Paper		
Pulp and waste	0.0	0.0
Paper and paper board	5.3	0.0
Printed matter	1.7	0.3
Paper articles	7.3	0.0
Jute		
Fibres	0.0	0.0
yarns	5.4	0.1
Fabrics	5.7	3.2
Copper		
Un-wrought	0.9	0.7
Semi-manufactures	4.3	3.1
Nickel		
Un-wrought	0.5	0.3
Semi-manufactures	4.3	3.1
Aluminium		
Un-wrought	0.5	0.3
Semi-manufactures	2.6	1.0
Lead		
Un-wrought	2.1	1.8
Semi-manufactures	4.5	2.8
Zinc		
Un-wrought	2.1	1.8
Semi-manufactures	4.7	2.9
Tin		
Un-wrought	0.1	0.0
Semi-manufactures	3.9	1.8
Tobacco		
Un-manufactured	14.7	11.5
Manufactured	22.1	9.2
<i>Source: GATT Secretariat, 1994</i>		



Country	Raw	Semi	Final	From the Third World
US	0.2	3.0	5.7	8.7
EC	0.2	4.2	6.9	6.7
Japan	0.5	4.6	6.0	6.8

*Source: As in Table 1*

### **Bias Re-visited**

***After the Uruguay Round, the bias against finished industrial products from developing countries has deepened in the developed country markets***

Even further, Table 3 bears additional direct testimony to the tariff escalation problem. It shows the pattern of tariff rates on imports to developed countries from developing countries alone. The commodity group includes all industrial products. First of all, tariff rates continue to be progressively higher at higher stages of processing even after the Uruguay Round.

The change in tariff escalation (after the Uruguay Round) between the raw materials and semi-processed stages is -38% compared to only a -23% change between the semi-manufactures and finished product stages. Thus, the bias against finished industrial products from developing countries has *deepened* in the developed country markets. The absolute rate of tariff is disturbingly high, 6.2%, on finished products, compared to 2.8% on the earlier stage.

Stage of Production	Share of Each Stage	Tariff (Pre-UR)	Tariff (Post-UR)	% Reduction	Change in Escalation
Raw	22	2.1	0.8	62	—
Semi	21	5.3	2.8	47	-38
Finished	57	9.1	6.2	32	-23
Total	100	6.8	4.3	37	—

*Note: — means not calculated*  
*Source: As in Table 1*

## Indirect Evidence of Tariff Escalation

It is to be noted that the escalation of tariff rates is only one of several methods that can be employed by a country to restrict access to its final goods market by foreign producers. Some of the other methods are not as visible as tariff rates that are recorded and published in systematic ways.

Some of the other methods are not as visible as tariff rates that are recorded and published in systematic ways

These other methods can be broadly classified as "non-tariff barriers." The issue of non-tariff barriers is essentially a political economy one. The fact is developing countries do not have the infrastructure and capacity (low bargaining position) to approach the issue of non-tariff barriers, especially the purification and (purification) and (purification) of those barriers. Non-tariff barriers can, and do, reveal escalation as well. That is, these barriers are deployed more heavily in manufacturing (processed) industries than against raw materials. Thus, the effect on the growth process of a developing country will be the same as those outlined in Part 1.

### The Premise

It is almost impossible to provide a direct account of every possible non-tariff barrier in every industry. Like tariff rates, non-tariff barriers do not necessarily lend themselves to easy numerical representation. However, since in the final analysis, the effect of such barriers will be reflected in the pattern of exports and imports of the countries involved, it makes sense to examine those in light of this possibility.

The analysis of trade flows brings out the "indirect" evidence of escalation of both tariff as well as non-tariff barriers

The analysis of trade flows reported below brings out this "indirect" evidence of escalation of both tariff as well as non-tariff barriers. In other words, the relative magnitudes of trade flows in processed and primary goods act as a proxy for indicator of tariff escalation. The basic premise is simple:

Countries that impose escalated trade barriers will tend to import less of finished goods, relative to unfinished goods, in a particular commodity group. Also, countries that face escalated trade barriers from their trading partners, will tend to export more unfinished products or raw materials in order to make up for their loss of export earnings in the final goods category.

### The Proof

In order to prove the first part of the above mentioned premise, one can look at the pattern of imports in the "food and beverages" category of a set of developed as well as developing countries. The import of food and beverages is subdivided into two sub-categories, primary and processed. On the basis of the relative magnitude of primary versus processed imports in this category (depicted in Diagrams 1 and 2), it may be concluded that the access of developing countries to the processed market in developed countries is severely restricted.

On the basis of the relative magnitude of primary versus processed imports in "food and beverages" category, it may be concluded that the access of developing countries to the processed market in developed countries is severely restricted

**What will be the optimal response of the developing country--retaliate or to boost exports of raw materials?**

This assertion rests on the fact that there is a clear bias against the import of processed food and beverages in most of the developed countries including the US, Spain, France, Germany, Italy, Finland, Korea, Japan and even Mexico. Primary imports of food and beverages in these countries were consistently higher than processed imports over the period 1988-94.

On the other hand, countries such as India, Bangladesh, China, Pakistan, Tonga, New Zealand, Australia as well as Brazil had shares of processed imports of food and beverages that far exceeded the corresponding shares of the primary category. This may be taken as a reasonable indirect evidence of escalated trade barriers (both tariffs as well as non-tariff) and thus, *limiting market access* in the former set of developed countries. And, the opposite holds true for the latter set of developing countries.

In Diagram 1, the ratios of primary and processed imports in the food and beverage category are plotted for the developed countries. In Diagram 2, the same ratios are plotted for the developing countries. The period of investigation is 1988-1994 and the source of these diagrams is UNCTAD Handbook.

### **Export of Raw Materials—Optimal Response!**

Next, consider the following situation. Suppose, a developing country exports two vertically integrated products, i.e. it exports a raw material (say, hides and skins) and a finished product (say, leather bags) that uses this raw material. The trading partner of this developing country imposes a tariff on the finished product, but not on the raw material. In other words, it imposes escalated tariffs.

**The Asia-Pacific region countries have registered a phenomenal increase in the value of raw material and other natural resource intensive exports throughout the eighties and early nineties**

What will be the optimal response of the developing country? Some scholars have argued, based on theoretical models, that the optimal response of the developing country is not to retaliate but simply to boost its exports of raw materials in order to make up for the loss of access in the finished product market.

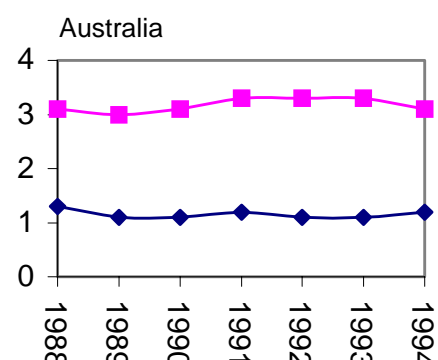
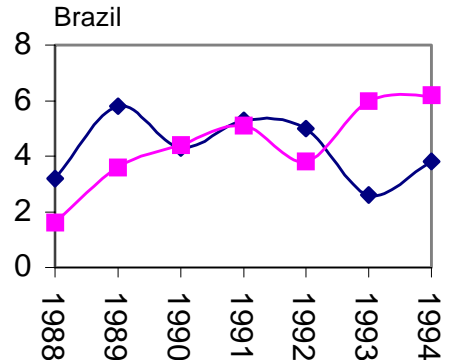
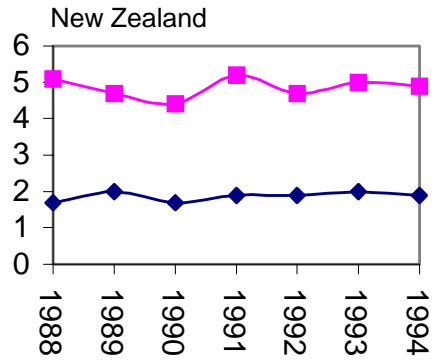
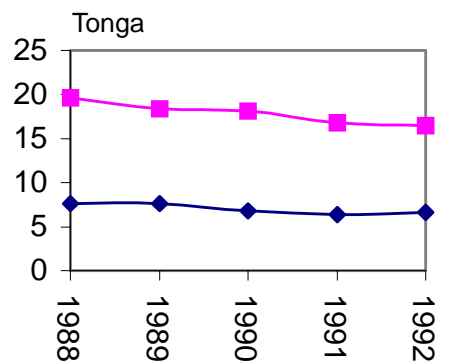
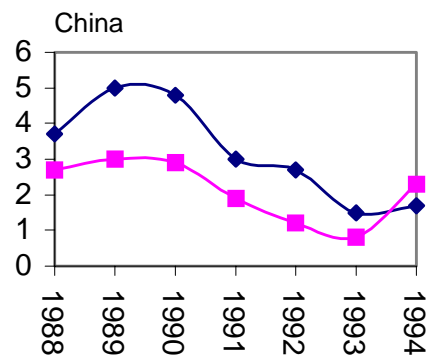
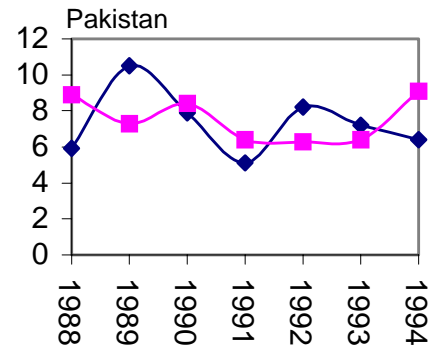
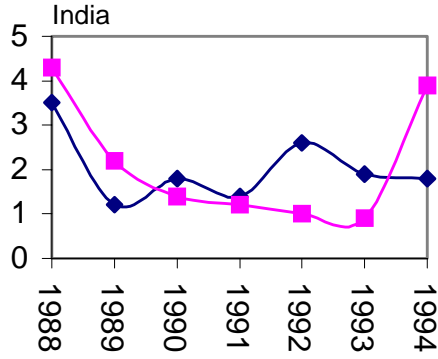
From Table 4, it is seen that the Asia-Pacific region countries such as India, Bangladesh, China, Malaysia, Thailand, Papua New Guinea, Tonga and Vanuatu have registered a phenomenal increase in the value of raw material and other natural resource intensive exports throughout the eighties and early nineties. The increase in *value* indicates that the *volume* of these exports had risen even more, since the terms of trade (on the basis of which the 'value' figures are calculated) have by and large moved against raw materials and natural resource intensive exports.

The growth rate of manufacturing exports from developing countries fell from around 22 percent in mid 1970s to just 11 percent in early 1990s. During the period 1960-90, the terms of trade deteriorated by 13 percent for all developing countries taken together.

**It is not obvious why the exports (of raw materials only) should grow so heavily within a set of poor developing countries.**

It is understandable why the domestic production and consumption of raw materials can only go up over time (due to population growth, say). However, it is not obvious why the *exports* of the same should grow so heavily within a set of poor developing countries. One plausible explanation could come from the possibility that these countries are indeed facing barriers to their processed exports and hence, are forced to boost the exports of raw materials.

Diagram 1: Ratios of Primary and Processed Imports of Food and Beverages in Developing Countries, 1988-94.



Note:   
◆ Primary   
■ Processed

Diagram 2: Ratios of Primary and Processed Imports of Food and Beverages in Developed Countries, 1988-94.

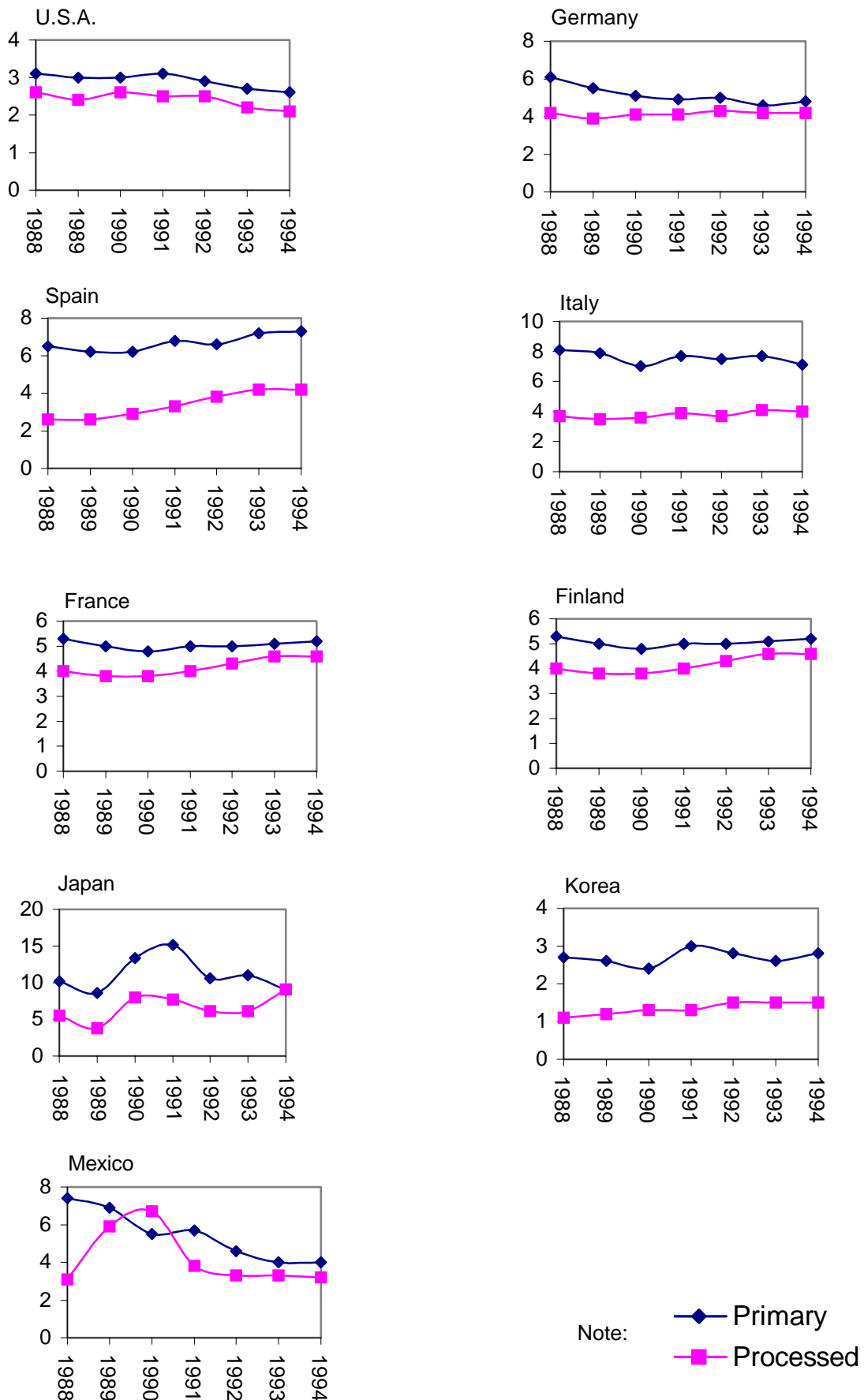


Table 4: Value of Natural Resource Intensive Exports, 1980 & 1993			
<i>Unit: \$mn</i>			
Area/Country	1980	1993	Absolute Change
<b>ASEAN</b>			
Brunei	4456.5	2313.1	-2143.4
Indonesia	21361.2	10414.8	-10946.4
Malaysia	10459.3	13928.4	3469.1
Philippines	3640.3	2646.1	-994.3
Singapore	9629.6	14849.2	5219.6
Thailand	4579.5	10197.1	5617.6
<b>Other NIEs</b>			
Hong Kong	1477.8	6356.7	4878.9
South Korea	1762.6	5572.0	3809.4
Taiwan	2400.4	5775.0	3374.6
<b>Other Asian Countries</b>			
Bangladesh	231.0	361.3	130.3
China	9518.7	17431.4	7912.7
India	3086.9	5485.0	2398.1
Pakistan	1332.8	1033.1	-299.7
<i>Source: UNCTAD Handbook, Geneva, Switzerland</i>			

### Is It Optimal to Export Raw Materials?

Table 4 clearly indicates that many developing countries have been forced to increase their exports of raw materials in the past decade. Also, as pointed out earlier (see above section), it has been argued in the literature that increasing the export of raw materials is optimal when a country faces escalated tariffs. But is it really so? It may be a stop gap arrangement to make up for the loss of foreign currency earnings, but such a policy cannot be sustained in the long run. The difficulties with it are as follows:

- the sources of most raw materials are bound to be exhausted sooner or later. If a country fails to develop a strong manufacturing base, what does it do at that point?;
- over depletion of natural resources have serious environmental consequences;
- dependence on the export of raw materials often puts a country at the mercy of unpredictable climatic conditions. Foreign exchange earnings are thus subject to a lot of uncertainty;
- even favourable climate in a particular year, leading to a great harvest, can *harm* a country by drastically reducing the world price of the particular crop; and
- *value added* is lowest in raw materials. Therefore, if most of the economic activity of a country is centred around that sector, the rate of growth of its income is bound to slow down.

On the basis of the points mentioned above, it may be concluded that increasing raw materials export, in the face of tariff escalation, is *not* sustainable in the long run. At best, it is a stop gap arrangement, which must be quickly reversed if a country is to carry on along the paths of sustainable development.

*Increasing the exports of raw materials may be a stop gap arrangement to make up for the loss of foreign currency earnings, but such a policy cannot be sustained in the long run*

## Part IV

### Tariff Escalation and the Balance of Trade

As on today, none of the few existing studies on tariff escalation have made an explicit reference to its relationship with the trade balance. That is surprising, since any manipulation of tariffs rates is bound to affect the trade balance by changing the relative price between traded and non-traded goods. In fact, in principle, the practice of tariff escalation goes back to the days of colonial imperialism.

***One major motivation behind imposing the colonial pattern of trade was to boost the trade surplus of the centre, and thus trade deficit in the peripheries***

Colonial imperialism created a scenario where, in stage one, the *centre* used to import raw materials from the *peripheries*. In stage two, these raw materials were processed into industrial products at the centre. In the final stage, the industrial products got exported to the peripheries themselves.<sup>2</sup>

Since the price of the raw materials that the peripheries exported was not commensurate with the price of the manufactured goods that they were forced to import, enormous amounts of gold and other precious metals found their way out of the peripheries and into the coffers of the centre. In modern day lingo, this reflects nothing but a severe balance of trade deficit for the peripheries. Thus, one major motivation behind imposing the colonial pattern of trade was to boost the trade surplus of the centre.

#### A Natural Question and Its Answer

A natural question to ask, therefore, is:

***A natural question--whether the removal of tariff escalation can boost the trade balance of developed as well as developing countries?***

Whether the removal of tariff escalation (which is nothing but a legacy of the colonial pattern of trade) can boost the trade balance of developed as well as developing countries?

The theoretical findings in this respect are reported below, and are based on an analytical model that has been fully explained in the appendix:

- if the main exports of a country are labour intensive, it should choose (optimally) uniform or no tariffs on its imports;
- if the main exports of a country are less capital intensive compared to its non-traded goods, it can improve its own trade balance by removing escalated tariffs; and
- for optimal allocation of a country's resources (both developing as well as developed), it is necessary as well as sufficient for the country to remove tariff escalation.

***For optimal allocation of a country's resources it is necessary as well as sufficient for the country to remove tariff escalation***

The above mentioned theoretical findings imply that both developed as well as developing countries have incentives to remove escalated tariffs. Among others, it will help them to improve their trade balance. And, this calls for approaching the issue politically.

## Part V

### The Political Economy

***The all-important question is if it is true that tariff escalation is bad for sustainable development then what prevents its removal***

Part I of the study clearly states that the existence of escalated tariff structure would result in the so-called “third-best” allocation of resources in developing as well as developed countries. Furthermore, it has been stated that the removal of tariff escalation is good from the viewpoints of economy, ecology as well as equity. The analyses in subsequent parts corroborate these statements, and clearly call for the removal of escalated tariff structure.

Then *the* all-important question is if it is true that tariff escalation is bad for sustainable development then what prevents its removal. This brings us to the political economy question on tariff escalation. The answer to the question lies at the existing geo-politics of international trade which is influenced by domestic political considerations.

***Tariff escalation certainly does not mean liberalisation of tariffs, and it also constitutes a policy of discrimination among trading partners***

The geo-politics is further convoluted after GATT 1994 Agreement. The world trading system and hence, its associated geo-politics under the aegis of the GATT (now the World Trade Organisation) is based on two basic pillars:

- non-discrimination between trading nations; and
- liberalisation of tariffs.

The very existence of escalated tariff structure undermined both these pillars. The reasons are that tariff escalation certainly does *not* mean liberalisation of tariffs, and it also constitutes a policy of discrimination among trading partners.

***The only rational answer is that there is a coalition of interests between the producers of processed goods of developed countries and their governments***

The novelty of the GATT/WTO system is that it is distinct from both the interventionist approach, as prevailed during and just after the 2nd World War, and protectionist policy during the inter-war years. The existence of tariff escalation questions this very *novelty* of the system.

***In short, the difference between costs and benefits for different groups in society does explain the political economy behind the existence of tariff escalation***

However, mere questioning of the system does not answer the political economy behind tariff escalation. This answer lies at the existence and functioning of different coalitions within the domain of global political economy. The only rational answer is that clearly there is a coalition between the producers of processed (import substitutable) goods of developed countries and their governments. This coalition is further strengthened by powerful transnational corporations' lobby. And, also there is a coalition between organised trade union movement in developed countries and their producers.

In short, the difference between costs and benefits for different groups in society, along with the differences in sizes of the various groups, does explain the political economy behind the existence of tariff escalation.

In such a situation, what are the choices of developing countries?



## Choose Between the Devil and the Deep Sea?

*The choice between the devil and the deep sea is clearly a no-win situation for developing countries that face escalated tariffs*

The theoretical findings point towards a very tricky situation. Suppose that a developed country imposes escalated tariffs on its imports from a developing country. We know that from the standpoint of political economy (because of low bargaining power), the developing country should not retaliate but continue to increase its exports of raw materials. Therefore,

*Choice 1 (the Devil): Export raw materials and fall into the trap of unsustainable development?*

However, the government of a developing country will find it hard, if not impossible, not to retaliate with escalated tariffs on its own imports. The main reason behind it will be political and lobbying pressures from various vested interest groups (political economy *within* the country). Therefore,

*Choice 2 (the Deep Sea): Retaliate with escalated tariffs and invite a balance of trade crisis?*

### No-win!

This is clearly a no-win situation for developing countries that face escalated tariffs. The evidence produced earlier in this study suggests that a number of countries are indeed pursuing the first option at least partially. The present economic condition of India seems to indicate that the second evil is also becoming a reality. India opted for economic liberalisation in 1991. The currency was devalued in order to bring it closer to its market rate and tariff rates were greatly reduced.

As a result, India witnessed a healthy improvement in its trade balance. Its foreign exchange reserves rose to an all time high. Then came the slowdown, which was caused partly by the increase in new trade barriers that Indian manufactures were forced to encounter in the developed world. As a result, trade deficit has raised its ugly head again.

However, the second plausible reason is that of overt insist of Indian businessmen to convince the polity about quantitative restriction on consumers goods imports, coupled with wrong kind of regulations on the part of the government. The currency has taken a beating and there is a call for a further devaluation. Thus, by retaliating ever so slightly, a poor country can trigger a new set of crises all together.

### Win-win

*However, there is a politically pro-active way out--in the form of strengthening of coalition between developing countries producers (of processed goods which are labour intensive) and developed countries consumers*

Above mentioned sections apparently reveal that developing countries are left with no choice. However that is a politically reactive way to approach the issue. Why it is reactive? The first choice suggests defeat even without playing a ball, while the second one is overtly reactive.

At the same time, there is a politically pro-active way out. The way out is the formation and strengthening of coalition between developing countries producers (of processed goods which are labour intensive) and developed countries consumers. The thread of formation of such a coalition is civil society at large, particularly the consumer and developmental (environmental) organisations of developed as well as developing countries. In that case only, it will be politically feasible for the developed countries governments to remove tariff escalation and thus, create the base for win-win situation.

## Part VI

### Conclusions

***This study establishes the postulate that the removal of tariff escalation will result in improvement of global welfare—from economy, ecology as well as equity viewpoints***

The existence of tariff escalation further distorts the already distorted allocation of resources in developed as well as developing countries. The basic postulate of international trade theory describes that tariff escalation will result in welfare loss in both sets of countries. This study not only establishes that postulate but further proves that the removal of tariff escalation will result in improvement of global welfare—from economy, ecology as well as equity viewpoints—sustainable development.

There is considerable amount of statistical evidence to contradict the prevailing perception that tariff rates today are low everywhere and therefore tariff escalation is not an issue. The important distinction to be kept in mind is that, technically, there may still be an infinite degree of escalation if the tariff rate on raw materials is zero but that on processed goods is ever so small but positive.

***There is considerable amount of statistical evidence to contradict the prevailing perception that tariff rates today are low everywhere and therefore tariff escalation is not an issue***

This is indeed the case for a number of product categories that constitute the export baskets of several developing countries. There is also a clear bias against imports from developing countries in the three important markets of the US, the EC and Japan.

Some of the poorest developing countries in the Asia-Pacific region depict an unhealthy trend of exporting too much of raw materials and other natural resource intensive products. One can infer from such an export pattern that these economies are only trying to make up for the loss of access into the markets for processed goods due to tariff and non-tariff barriers in developed countries.

The import pattern in food and beverages category reiterates this notion. It is found that most developed countries import much more of the unprocessed variety of food and beverages compared to processed ones. The converse is true for developing countries. The excuse of technical standards seems very far fetched. For example, it is absurd to imagine that a country such as India, which has the scientific expertise to launch satellites in space, does not have the basic technique of processing food to meet international standards.

***At the same time, there are political hindrance in developed country markets that thwart the efforts of developing countries to expand their processing industries***

The problem clearly lies elsewhere—political economy of the issue. There are political hindrance in developed country markets that thwart the efforts of developing countries to expand their processing industries.

From a theoretical angle it is argued that developed countries, whose exports are largely capital intensive (but non-traded goods are relatively more capital intensive), have an incentive to remove escalated tariff structure in order to improve their trade balances. At the same time, it is not optimal (given their low bargaining position in the domain of

***A double dilemma  
for developing countries--to retaliate  
or not***

global political economy) for developing countries also, whose exports are mainly labour or natural resource intensive, to retaliate with escalated tariffs. This creates a double dilemma for developing countries.

If they do not retaliate, they fall into the trap of unsustainable development. If they do retaliate by slowing down tariff reforms, they stand the risk of deteriorating their trade balances. The present scenario in India is a case in point.

However, that is a reactive way to approach the issue. The pro-active way out can be found if there is a strong coalition of interests between developed countries consumers and developing countries producers (of processed goods).

***If they do not retaliate, they fall into  
the trap of unsustainable  
development. If they do retaliate they  
stand the risk of deterioration of their  
trade balances***

Finally, it is to assert that the evils of tariff escalation are not just restricted to lower imports of processed goods, and thus deterioration of trade balances in both sets of countries. Even further, tariff escalation can trigger off economic, environmental as well as social crises of much more serious nature, and in both sets of countries. And, thus the veritable—a tax on sustainability!

## Appendix

### Tariff Escalation and the Trade Balance

The relative price of traded to non-traded goods guides the allocation of both consumption as well as productive resources between the traded and the non-traded sectors in a country. When this relative price rises, consumers tend to consume more of the non-traded good than before. Also, producers find it profitable to produce more traded goods than before. Thus, the domestic production of traded goods rises and the domestic consumption of the same falls, leading either to a surplus in the trade balance, or, a reduction in an existing trade deficit.

#### The Hypothesis

The hypothesis of the model may be summed up as:

Can tariff escalation be used to manipulate the trade balance? If so, what are the likely results for different set of countries?

#### The Model

The model described below analyses the effect of tariff escalation on the crucial relative price.

The model represents an economy that produces four types of goods, primary importable, processed importable, exportable and non-traded goods. There are also four factors of production in the economy, skilled labour, unskilled labour, raw materials and capital. The input requirements are as follows:

- Primary importable: these are usually pure raw materials, or, primary goods that have gone through the minimum processing activity. Thus, it makes sense to assume that primary importable of any country are produced from unskilled labour and raw materials;
- Processed importable: processed importable, by definition, go through a higher level of processing, usually with the help of capital-intensive techniques, compared to primary importable. It is assumed here that processed importable are produced from raw materials and capital;
- Non-traded good: with increasing openness in every country, very few goods are purely non-traded anymore. The only pure non-traded items are physical infrastructure, such as roads, railways and bridges, and, various kinds of services such as telecommunications and banking. Physical infrastructure is capital intensive while service infrastructure is skilled-labour intensive. In order to accommodate both of these, it is assumed that non-traded goods are produced from skilled labour and capital; and

- Exportable: exportable items of any country span a wide range. In principle, it is desirable to subdivide exportable in a similar fashion as importable. However, to keep the dimension of the model within manageable proportion, and, since the focus of the model is on tariffs imposed in the various *importable* sectors, it is assumed that there is only one composite exportable commodity that is produced from skilled labour, unskilled labour as well as capital.

### The Assumptions

At the outset, one can assume that the country in question is ‘small’, so that the domestic price of traded goods is the world price (in dollars, say) multiplied by the nominal exchange rate. At this stage, a legitimate question to ask is how can one apply this assumption when one approaches the issue from developed as well as developing countries viewpoints. Without any loss of generality (i.e. by assuming that the nominal exchange rate is equal to unity), the following are the reasons for why the analysis will hold true for both sets of countries:

- the first reason is that the postulation—domestic price of traded goods equal to the world price—is based on the fact that different countries have natural comparative advantage on different goods. Therefore, ideally speaking (without any trade distortion like tariff escalation) since the developing countries have that advantage in the production of labour intensive processed goods, their domestic price should dictate the world price. The opposite is true for developed countries;
- the second reason stems from the fear of anti-dumping measures, especially in the ‘new’ regime of world trade under the aegis of the World Trade Organisation. The reason is that if any country exports a good with lower price in world market than that prevailing in its home market it will face the anti-dumping measure; and
- the third reason is that if there is any anomaly between the domestic and world price of traded goods the producers in exporting country will face protests from consumers. This is true for both set of countries given the relative ease with which information are flowing in these days.

The above mentioned factors clearly imply that ‘small’ can be dropped, and *rationally* dropped.

Other assumptions are in the spirit of the classical paradigm in trade theory, *viz.*, technology exhibits constant returns to scale, factors of production are immobile across borders and perfect competition prevails in all markets. These assumptions are standard and do not necessarily restrict the relevance of subsequent results.

Here also, one can make further assumptions on environmental and social costs associated with the issue of tariff escalation. However, these assumptions will not make any change in the basic results of the model. The only change that will occur is that there will be an additional argument (variable) in the competitive profit conditions of different sectors (as mentioned below—equations 1 to 4). Even further, that change is only due to the assumption of cost externalisation. Here, if one makes another strong assumption (i.e. costs internalisation) then that change in equations will not take place.

The model takes into account an institutional aspect of labour markets that is almost universal, *viz.*, short-run rigidity of unskilled wages. For instance, “minimum wages”, which is one variant of unskilled wages, are revised only periodically and as such, have little to do with day to day movements in the price index. Skilled wages, on the other hand, are normally tied to the price index. A case in point is the provision of “dearness allowance” to formal sector (i.e. skilled) workers in India.

Therefore, the issue of the effect of tariff escalation on the trade balance is addressed in the context where unskilled wages are fixed in the short run. Since the problem of tariff escalation deals directly with different stages of production, and since the more primitive stages of production almost necessarily involve the participation of unskilled labour, it is imperative that an analytical treatment of the issue incorporate an essential feature of unskilled labour markets described above.

### The Notations

The following notations are used in the model:

- $M_1, M_2, E$  and  $N$ : the amounts of the primary importable, processed importable, exportable and non-traded goods, respectively, produced in the economy;
- $L_1, L_2, R$  and  $K$ : the endowments of the four factors of production, unskilled labour, skilled labour, raw materials and capital, respectively;
- $P_i$ 's: domestic currency prices of the final goods, where  $i = M_1, M_2, E$  and  $N$ ;
- $w_1, w_2, r$  and  $k$ : factor prices (for  $L_1, L_2, R$  and  $K$ , respectively);
- $t_1, t_2$ : initial tariffs on  $M_1$  and  $M_2$ , respectively;
- $a_{ij}$ : amount of the  $i$ th input needed to produce a unit of the  $j$ th output; and
- $A_{ij}$ : share of the  $i$ th factor in the  $j$ th industry; For instance,  $A_{L_1 M_1}$  represents the wage share of unskilled labour ( $L_1$ ) in the revenue obtained in the primary importable ( $M_1$ ) industry.

### The Relative Price

Since world prices of traded goods (i.e., exports and imports) are treated as fixed, they can be represented by a composite price index  $P_T$ . The implication is that at this stage the model takes into account the short run phenomenon only. The relative price of traded to non-traded goods will be denoted by:

$$e = (P_T/P_N),$$

where  $P_T$  and  $P_N$  denote the prices of the traded and non-traded goods, respectively. The analysis to follow will trace the effect of changes in tariff rates on ‘e’ via changes in factor prices, such as skilled and unskilled labour, capital and raw materials. Moreover, since  $P_T$  is fixed, the focus will be solely on  $P_N$ , at least in the short run. Because of the assumption of unitary nominal exchange rate, the domestic prices of

the traded goods are equal to world prices plus the *ad valorem* (on the 'value' of the goods) tariff rates.

### The Analysis

Equations (1)-(4) represent the competitive profit conditions of the four sectors of production.

$$a_{L1M1} \cdot w_1 + a_{RM1} \cdot r = (1 + t_1) \dots\dots\dots (1)$$

$$a_{RM2} \cdot r + a_{KM2} \cdot k = P_{M2} \cdot (1 + t_2) \dots\dots\dots (2)$$

$$a_{L1E} \cdot w_1 + a_{L2E} \cdot w_2 + a_{KE} \cdot k = P_E \dots\dots\dots (3)$$

$$a_{L2N} \cdot w_2 + a_{KN} \cdot k = P_N \dots\dots\dots (4)$$

The country has an escalated tariff structure ( $t_2 > t_1$ ) at present and wishes to correct it by *reducing* the tariff rates such that they are brought closer to each other in the two importable sectors. In order to trace the effect of tariff reduction on factor prices, and hence the price of the non-traded good, (1)-(4) may be fully differentiated to obtain:

$$A_{L1M1} \cdot w_1^* + A_{RM1} \cdot r^* = -t_1^* \dots\dots\dots (5)$$

$$A_{RM2} \cdot r^* + A_{KM2} \cdot k^* = -t_2^* \dots\dots\dots (6)$$

$$A_{L1E} \cdot w_1^* + A_{L2E} \cdot w_2^* + A_{KE} \cdot k^* = 0 \dots\dots\dots (7)$$

$$A_{L2N} \cdot w_2^* + A_{KN} \cdot k^* = P_N^* \dots\dots\dots (8),$$

where the notations with \* denote the first-order differentiated values of respective variables.

### The Results

What will happen to the trade balance if the government is to correct the escalated structure of tariffs ( $t_2^* > t_1^*$ ) by reducing tariff rates in the processed importable sector ( $M_2$ ) at a faster rate than that in ( $M_1$ )?

From (5), noting that  $w_1^*$  is zero (the amount of unskilled labour is assumed as constant), the change in the reward to  $R$  is given as

$$r^* = (-t_1^*/A_{RM1}),$$

i.e., as tariff rates are reduced in the primary importable sector, the price of raw materials falls in the country. Substituting  $r^*$  in (6), we get the change in the reward to capital as

$$k^* = (1/A_{KM2}) \cdot [\{t_1^* \cdot (A_{RM2}/A_{RM1})\} - t_2^*]$$

Substituting the value of  $k^*$  in (7) we get the change in the wage rate of skilled labour as

$$w_2^* = [A_{KE}/(A_{L2E} \cdot A_{KM2})] \cdot [t_2^* - \{t_1^* \cdot (A_{RM2}/A_{RM1})\}]$$

We now have the ingredients to solve for the change in the price of the non-traded good in (8). Substituting the values of  $k^*$  and  $w_2^*$  in (8), we get

$$P_N^* = (1/A_{KN}) \cdot [t_2^* - \{t_1^* \cdot (A_{RM2}/A_{RM1})\}] \cdot [\{(A_{L2N} \cdot A_{KE})/A_{L2E}\} - A_{KN}]$$

In this model, the attempt at correcting an escalated tariff structure implies that  $t_2^* > t_1^*$ . Therefore, since the primary importable sector will naturally be resource intensive compared to the processed importable sector, i.e.  $A_{RM1} > A_{RM2}$ , the first parenthetical expression is positive. Then, the sign of  $P_N^*$  will depend on that of the second parenthetical expression.

Here, the point to note is that the relative price of traded to non-traded goods is (as defined earlier) the ratio of the composite price index of traded goods to the price of non-traded goods. Due to the reduction of tariff rates (in either or both of the importable sectors), the domestic price of traded goods will fall. This is nothing but an implication of removing tariff protection.

Hence,  $P_N$  must necessarily go down if the relative price of traded to non-traded goods is to go up (which is necessary for the trade balance to improve) due to the correction of tariff escalation. A necessary condition for  $P_N$  to go down is given by:

$$\{(A_{L2N} \cdot A_{KE})/A_{L2E}\} < A_{KN}$$

or,

$$(A_{KE}/A_{L2E}) < (A_{KN}/A_{L2N})$$

Therefore, the *necessary* condition states that if exportable are less capital intensive than the non-traded good, the removal of tariff escalation has the potential to improve the trade balance.

Whether exports are actually less capital intensive or not depends on the composition of exports basket, and are fully explained while deriving the sufficient condition below.

However, the *condition* for necessary condition to hold true is stated above—for trade balance to improve the relative price of traded to non-traded goods to go up. One way of doing that is through a fall in the price of non-traded goods.

Another way of improving the relative price is if the price of traded goods go up. This is certainly a *not so* short run situation (thorough slight relaxation of earlier assumption). This condition can be proved intuitively. This will happen if there is increased demand for traded goods, given the fixed supply. Or, even if the supply is not fixed then under a strong assumption that the rate of growth of demand outstripped that of supply.

Now, if developed countries remove the escalated tariff structure the demand for traded goods (of developing countries) will certainly go up. On the other, the demand for traded goods from developed countries (to developing countries, and consequently improvement in trade balance of developed countries) will go up if there is an improvement in the trade balance of developing countries (there is an one-to-one correspondence between the demand for traded goods and improvement in trade balance though the value of this demand elasticity will differ from country to country). Thus, we arrive at Result 1:

Developed as well as developing countries have incentives to remove the escalated tariff structure if their non-traded goods sector is relatively more capital intensive than the exportable sector.



The *sufficient* condition of the model proves that the removal of tariff escalation will raise the relative price of traded to non-traded goods (and hence, may improve the trade balance). In order to derive the sufficient condition, an additional assumption is to be made. The assumption is that the initial tariff on primary imports is zero—a perfectly legitimate assumption— $t_1 = 0$ .

On the other hand, an earlier assumption is relaxed. The assumption was that the price of traded goods ( $P_T$ ) is fixed. Here, it is assumed that  $P_T$  will change (to trace the effect of relative price). This is purely a long run phenomenon.

Now, from the relative price equation, the rate of change in relative price is as follows:

$$e^* = P_T^* - P_N^* = -t_2^* - (t_2^*/A_{RM2}) \cdot \left[ \left\{ \frac{(A_{L2N} \cdot A_{KE})}{A_{L2E}} \right\} - A_{KN} \right]$$

Therefore, for  $e^*$  to be positive, a sufficient condition is:

$$(A_{KN} - A_{KM2}) > \left\{ \frac{(A_{L2N} \cdot A_{KE})}{A_{L2E}} \right\}$$

The above inequality shows that for trade balance to improve (after the removal of trade distortion like tariff escalation) the sufficient condition is if the non-traded good is relatively more capital intensive than the processed importable, i.e. if the right hand side of the inequality is greater than zero (which is true since all the variables have positive values).

Then the question is whether it is indeed true that the non-traded good is relatively more capital intensive than the processed importable (even if the would be importable is in fact produced in the country itself due to the existence of tariff escalation). Answering this question requires thorough analysis of the composition of capital employed in non-traded as well as import substituted sectors. However, a simple analysis of the composition of traded goods (in present time, and for both sets of countries) suffices the purpose.

Even until a few years ago, physical infrastructure and services were the two most important categories of non-traded items. However, especially after the GATT 1994 Agreement and with growing cross-border movements of multinationals specialised in services of various kinds, non-traded goods are getting increasingly restricted to the physical infrastructure variety.

Since, physical infrastructure is by definition capital intensive, the sufficient condition is more and more likely to hold for *any* open economy, including those which export capital intensive goods (developed countries).

Another way is to revisit the inequality. The difference between the share of capital in non-traded goods sector and that in processed importable depends on the value of the right hand side (RHS) of the inequality. Furthermore, the higher the difference the higher will be the improvement in trade balance.

The RHS of the inequality composed of three values. First is the share of skilled workers in non-traded goods sector. The second one is that of capital in exportable sector. The third one is the share of skilled

workers in exportable sector. In all these cases the developed countries have a relatively greater value than the developing countries.

Now, if escalated tariff structure is removed then there will be reallocation of resources between different sectors. In developed countries, the reallocation of resources will take place from the present sub-optimal allocation in processed importable sector to optimal allocation in non-traded goods and exportable sectors. Among other things, this will result in greater improvement in balance of trade of developed countries. This is also true for developing countries if they are *allowed* to export processed goods. Therefore, Result 2:

Any country, with the perceived aim of liberalisation of international trade, meets the sufficient condition of having an incentive to remove tariff escalation.

### Afterthought

Setting aside complex mathematics, let us recall the necessary and sufficient conditions once again.

In simple terms, the necessary condition states that the capital intensity of non-traded goods sector is more than that of exportable sector. On the other, the sufficient condition states that the capital intensity of non-traded goods is relatively more than that of the processed importable sector, i.e. currently the import substitute sector in developed countries. In notational terms it means:

$$A_{KN} > A_{KE}$$

and

$$A_{KN} > A_{KM2}$$

If both these conditions hold true then both sets of countries have incentives to remove escalated tariff structure as it will help them to improve their trade balance. The model proves that this is indeed the case. Here is an alternative and simple (intuitive) way proving them again.

If it is true that exportable sector is relatively more capital intensive than processed importable sector then the necessary as well as sufficient conditions will hold good. In notational terms and with the help of transitive relations it means if:

$$A_{KE} > A_{KM2},$$

then

$$A_{KN} > A_{KM2},$$

since

$$A_{KN} > A_{KE} > A_{KM2}$$

This condition will hold good through reallocation of productive resources after the removal of escalated tariff structures. And, this is indeed the case for *any* country if they believe in the single undertaking notion of the world trade under the aegis of the WTO, i.e. to approach the issue of trade policy holistically and pro-actively, and not through reactive piecemeal approach.

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## Endnotes:

- 1 It should also be noted that several scholars have found that the demand elasticity of processed goods exceeds that of primary goods. Any difference between the nominal tariff rates applied at the primary and processed stages gets magnified by the difference between demand elasticity of these two stages of the product. In other words, even a small nominal tariff rate can imply a high rate of effective protection if the demand elasticity of the product concerned is high. In view of this well organised fact, the tariff reductions in the post Uruguay Round loses much of any true significance. The fact is, even a *uniform* tariff on all stages of production is not sufficient to guarantee that there is no escalation in the protection structure. And the Uruguay Round falls short of even achieving a uniform rate across all stages of production.
- 2 An important example of this colonial pattern of trade having a devastating impact on processing industries in the victim country is Indian textiles. It is well documented in the literature on economic history how the British rulers coerced Indians into exporting raw cotton to Britain. In Britain, raw cotton was processed into garments and exported back to India. Among other things, it destroyed the existing *muslin* sector of India which was known world-wide for its quality and fineness for centuries. At the same time, it provided additional momentum to the process of Industrial Revolution in Britain.