

RECITING TRADE CONFLICTS
USING ANALYTIC HIERARCHY PROCESS

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Abstract: This paper extends the analysis of trade conflicts between developed and developing countries elaborated by the author in his earlier work. The discussed conflicts are sparked by issues seemingly unrelated to trading matters; such as environment and human-labor rights, and therefore potentially more difficult to resolve. Here, the case of uncertainty and information asymmetry is dealt with, before a more concrete resolution to the conflict situation is presented. While a cooperative solution is shown possible, a practical overture is spelled out in terms of alternative arrangement. Such an arrangement, possibly denoted by 'club,' should reflect an integration that is deeper than that under the GATT-WTO system. The proposed integration is arrived at by employing the forward and backward processes.

Introduction

The nature and intensity of potential conflicts between developed and developing countries were elaborated by the author in his "*New Conflicts Between Developed and Developing Countries*" by making use of Analytic Hierarchy Process (see Azis, 1996a; Azis 1996c). It was shown that the present situation of global economic and trading matters is likely featured by the two parties' constant back and forth struggle to cope with tensions sparked by value conflicts (environment, human and labor rights issues) whose link with international trade is rather nebulous. Put in a dynamic context, in particular when policy makers are of the non-myopic type, a cooperative solution turns out to be plausible. But it is the translation of those conditions into a practical overture that needs to be spelled out. On this point the analysis stop short of concrete recommendations as to what arrangement might be useful to explore in order to cope with this type of conflicts.

The main task of this paper is to deal precisely with such recommendations. However, before describing them, the case of uncertainty and information-asymmetry will be also dealt with. Such analysis was neglected in Azis (1996a).

Nature and Intensity of Conflicts

At the starting point, Azis (1996a) assumed that developing countries, hereafter LDCs, collectively, foresee the need and merit of economic and trade reform, suggesting that *Economic Reform and Trade Liberalization (TRA)* is taken as one of the LDCs' strategies. This strategy is important to the achievement of the three targets: (1) *Market Access in DCs (MARKET)*; (2) *Strong Economic Growth (GROWTH)* and (3) *Improved Efficiency (EFFICIEN)*. It is also conjectured that for many LDCs, the *Political Stability (STABLE)*, which is their fourth target, could be enhanced by healthy economic conditions and vice-versa.

However, the opening-up of the economy also means that domestic policies are becoming more exposed to international scrutiny, no longer independent of outside influence. A case in point is with regard to the issue of labor practice. Many developed countries, hereafter DCs, consider that lower costs of employing labor in LDCs unfairly gives firms in those countries a competitive edge. It is against this outcome that producers in DCs would like to be protected, because it interferes with their target to achieve *Fair Treatment in Production and Trade (FAIR)*. In terms of strategy, DCs are expected to *Support the GATT-*

WTO (GATT) for two purposes: (1) to ensure their *Market Access to LDCs (MARKET)* that will eventually insure their *Strong Economic Growth (ECONOMIC)* objective; and (2) to register their complaints to GATT/WTO about environmental issues, and to a limited extent also about labor practice in LDCs. The author also remarked that efforts to link environmental issues with trade policy has been increasingly favored by a number of DCs, especially those concerned with the maintenance of a *Stable Supply and Price of Environmental Resources (RESOURCE)*, which is the most important target to achieve for the objective of an Environmentally Sustainable *Development/Global Commons (ENVIRONM)* to hold. The so-called 'eco-dumping,' they assert, ought to be retaliated against with either trade sanction or other forms of protection, because environmental damage could take place at a global scale (e.g., ozone depletion, climate change), and increased growth and trade could exacerbate the damage.

With respect to human rights issue, Azis (1996a) noticed that there is a debate about the principle of 'universality.' One reflection of such a debate centers around two opposing views: one that sees the right to development as a prerequisite for realizing civil and political rights, and the other who believes the reverse. The latter tends to be adopted by DCs, who regard *Universal Value Compliance (VALUE)* as an important target to achieve, congruent with their *Overall Influence (POLITICA)* objective. There are two other strategies available for DCs to deal with such value conflicts: (1) take a tough stand through *Unilateral Trade Sanction and Other Protection Measures (PROT)*, and (2) take a pliant mannered reaction by engaging in a *Quiet Diplomacy (DIPL)* through a bilateral positive interaction, possibly embodying financial aids, technical assistance, and the like. This approach is in contrast with 'outspoken diplomacy' that has the alleged risk of meddling in the LDCs' domestic affairs.

It is clear that when DCs and LDCs' motives collide, a serious tension can emerge. What strategy can LDCs take to avoid such a tension? A combination of *Economic Reform, Trade Liberalization and Improvement of Human-Labor Rights and Environmental Standards (ETR)* would be the ideal strategy. But such may not be the LDCs' selection if DCs persist with their tough stand (trade sanctions) instead of engaging in quiet diplomacy. On the other hand, DCs' choice will be determined by the extent to which they believe that an erosion of confidence in the fairness of the trading system is ultimately more costly to the world economy than sanctions imposed on the offending countries (see Diagram 1).

Since there are two and three strategies for LDCs and DCs respectively, six joint strategies are acquired, as shown at the bottom level of the relevant hierarchy (reported in the Diagram A1 in the appendix, which is reproduced from Azis, 1996a). It turns out that LDCs will likely assign highest priority to political stability (*STABLE*), the relevant quasi payoff being .558. In light of the 'psychological externalities,' it is not surprising that they tend to prefer a joint-strategy in which they will make some improvements in the social and environmental standards, with the hope that DCs will engage in quiet diplomacy. Such a scenario, denoted by *DIPL-ETR*, is depicted in the lowest level of the hierarchy for LDCs.

But this is not necessarily the DCs' preferred choice. Having identified a set of strategies under the economic, political and environmental categories, the overall process suggests that DCs would pick a joint-strategy of countering LDCs' unfair practices with trade sanctions or other protection measures, with the expectation that LDCs will revise their strategy to improve significantly the human-labor rights and environmental standards along with their economic and trade liberalization; this is labeled as *PROT-ETR* in the DC's overall distributive mode with payoff value of .350. It is further shown in Azis (1996a) that by combining the two sets of priorities in a non-zero sum matrix, reproduced in Diagram A2 in the appendix, no equilibrium point in the Nash sense can be found. In such a situation, global economic and trading system will be likely featured by the two parties' constant back and forth struggle to cope with tensions.

A cooperative solution, i.e., a combination of DCs' quiet diplomacy and LDCs' improvement of standard along with trade liberalization, that is, *DIPL-ETR*, is shown to be plausible and within reach if both

parties are of the non-myopic type. In a perfect information case, in which at each move the party with the move knows the full history of the play,¹ there also will be incentives for both parties to cooperate.

Diagram 1. Elements of the Hierarchy

Less Developed Countries (LDCs):

Targets:

1. MARKET: Market Access in DCs
2. GROWTH: Strong Economic Growth
3. EFFICIEN: Improved Efficiency
4. STABLE: Political Stability, Nationally and Regionally

Strategies:

1. TRA: Economic Reform and Trade Liberalization
2. ETR: Economic Reform, Trade Liberalization and Improve Human-Labor Rights and Environmental Standards

Developed Countries (DCs):

Objectives:

1. ECONOMIC: Strong Economic Growth
2. POLITICA: Overall Influence
3. ENVIRONM: Environmentally Sustainable Development/Global Common

Targets:

1. MARKET: Market Access in LDCs
2. FAIR: Fair Treatment in Production and Trade
3. VALUE: Universal Value Compliance
4. RESOURCE: Stable Supply and Price of Environmental Resources

Strategies:

1. DIPL: Quiet Diplomacy for Improved Environment & Social Standards in LDCs.
2. GATT: Support GATT-WTO Rules
3. PROT: Unilateral Trade Sanction and Other Protection Measures

The author then explored another scenario whereby both, DCs and LDCs, are taking a tougher stand.² Diagram A3 in the appendix shows the results of such a scenario, where LDCs favor *TRA* over *ETR*, and DCs prefer *PROT* over *DIPL*. As a consequence, the stable joint-action is *PROT-TRA*. No one would gain the highest payoffs from such a situation, but DCs will be in a relatively more disadvantage position (.080 is their third largest payoff, whereas .147 is the LDCs' second largest). At any rate, the resulting *PROT-TRA* joint-action gives a much less desirable outcome for each party than the *DIPL-ETR* joint-action in Diagram A2 which reflects the more desirable long-run perspective.

Uncertainty and the Role of Information: A Signaling Game

In a real situation, the role of information accessibility can not be neglected. Such an accessibility in each group of countries is often critical to the equilibrium solution; yet, it has been left out from the analysis so far. Generally, a greater amount and more reliable information on sensitive domestic issues like human and labor rights are more accessible in DCs than in LDCs. In effect, LDCs are actually in a better position to process more information about their own situation as well that of the DCs, while DCs have more limited information about LDCs' sensitive issues, hence, there is information asymmetry³. Another

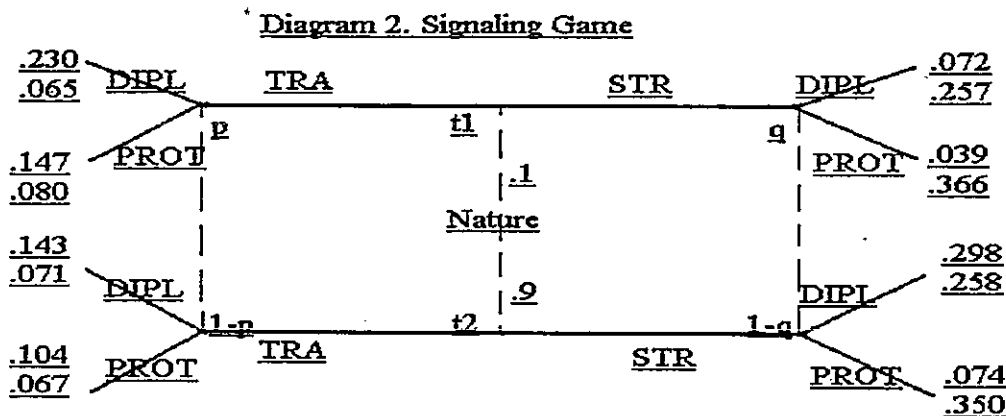
¹ The sequence of the game follows closely the Stackelberg duopoly model: (1) A party (the leader) chooses a strategy from its feasible set of strategies; (2) The other party (the follower) observes the leader's action and then chooses a strategy from its own feasible set of strategies; (3) Each party maximizes its payoff which depends on the two chosen actions.

² *PROT-TRA* is now preferred to *PROT-ETR*; in other words, LDCs are now more interested to focus on economic and trade even if DCs take a tougher stand (protection or trade sanction).

³ Some analysts relate such a presumption with the degree of a society's openness (media censorship, rumors, etc).

element that realistically needs to be considered is uncertainty; especially that with respect to the 'belief' one player has towards the quality or type of the other player, before and during the game.

Incorporating these elements would require a procedure typically taken in a *signaling game*. To the extent that there is indeed an asymmetry in the information accessibility, LDCs are more likely to act as the 'sender' in such a game. One of the most critical factors upon which the outcome will be determined is the type of 'nature,' reflected through "prior" probability of the type of the sender that the receiver must face. Three scenarios of such priors are explored: 0.5, 0.1, and 0.9, that is, the second and the third values denote cases where nature has selected the probability of LDCs being a "good" type is lowest and highest, respectively.⁴ For illustrative reasons, the matrix payoffs from Diagrams A1 and A2, shown in the appendix are combined to form an extensive game, whereby in the upper side of Diagram 2 (below) both LDCs and DCs are assumed to take a tougher position.



For this form of signaling game, multiplicity of equilibria is quite typical (Cho and Kreps, 1987). We will first explore the first two cases in which prior probabilities of LDCs having "good" type (or t_2) equal to .5 and .1. It turns out that in both cases a combination of *PROT-TRA* is the acquired Bayesian equilibrium: LDCs get .147 and DCs acquire .080. This is the same with the equilibrium outcome obtained from Diagram A2, i.e., LDCs insist to focus on economic and trade reform, even if DCs take a tougher stand (protection or trade sanctions). Considering the possible North-South dimension involved, such an outcome could be followed by retaliatory and counter-retaliatory action that may lead to the undermining of an open global trading system⁵. But actually this outcome should have been expected, and therefore not too fascinating, since using prior probabilities equal .5 and .1 are basically not indifferent with playing the game of Diagram A2 (notice again that the payoff values attached to the upper side of Diagram 2 is precisely those recorded in Diagram A2).

What would be more interesting is the case whereby nature select a high probability, i.e., .9, that LDCs have a "good" type, because that particular prior could revise DCs' assessment towards LDCs' quality, hence affect DCs' "posterior distribution" and, in turn, alter DCs' selection of strategy. Interestingly enough, under such circumstances the equilibrium outcome is *not DIPL-ETR*, but rather *DIPL-TRA*, i.e., DCs' payoff from engaging in quiet diplomacy is greater than that received from imposing trade sanctions (.071 > .067) even if LDCs take a tough position⁶. How could this unexpected outcome be explained? Such an outcome is plausible given the fact that DCs, in the event of receiving a message that LDCs are persistent with focusing only on economic reform and trade liberalization, hold a "posterior" belief that

⁴ By "good" type we mean a quality of "sincerely striving for better economic, social and environmental quality."

⁵ Notice that the "Economic and Trade Liberalization" scenario (*ETR*) does not preclude discriminative policy against other parties. Think in terms of a narrow definition of 'open regionalism' adopted by the members of a regional arrangement.

⁶ Using backward induction (a-la Brams' Theory of Moves), this solution is also obtained under the condition that the LDCs begin the move first.

they face a "good quality" LDCs.⁷ It is equilibrium because even when DCs are willing to engage in quiet diplomacy, LDCs prefer to stay with their trade focus for they suspect that, having observed LDCs' move to improvement, DCs might change their strategy to protection, i.e., the presence of distrust, in which case DCs will improve their payoff, but LDCs would get .074 instead of .143.

But there is a more cogent argument for DCs not to impose protection. As most studies have demonstrated, exercising trade protection would have been self-damaging, and many policy makers in DCs have realized this.⁸ It is precisely for this reason that the DCs' payoff of imposing protection would be lower (.067) than the payoff acquired from engaging in quiet diplomacy (.071). Nevertheless, it is clear that the influence of 'posterior belief' is vital in this case.⁹

In Search of Alternative Setting

While the analysis so far indicates that the possibility of a cooperative solution is not remote, a more concrete recommendation remains to be searched for. Clearly, a series of pro-active actions are imperative in order to have the cooperative scenario to take place. What are those required actions? In this area, 'forward process' (to determine the future scenario) and 'backward process' (to determine the preferred actions) provide a very useful approach for exploring a number of actions and recommended settings.

In the forward process, a number of possibilities may arise; they range from the most ideal situation, i.e., a *Borderless World (NOBORDER)* to the least desired scenario of a *Fragmented World (FRAGMENT)*. A more realistic middle ground, i.e., an integration that is deeper than that under the GATT-WTO system (*DEEP INT*), is also plausible, but, again, it ought to be sought for with pro-active efforts. Otherwise, at best one could only expect the renewal of an *Imperial Harmonization (IMPERIAL)* scenario in which a few super powers dominate the global economic and trading system.

A decision is to be made as to which of these scenarios will have the highest degree of likeliness before strategies can be prescribed. As it turns out, after ranking the likelihood of each event in all levels, the outcome suggests that a *Deeper Integration (DEEP INT)* is most preferred (the hierarchy for the forward process is shown in Diagram 3):

OVERALL INCONSISTENCY INDEX = 0.03

DEEP INT 0.315

IMPERIAL 0.294

FRAGMENT 0.255

NOBORDER 0.136

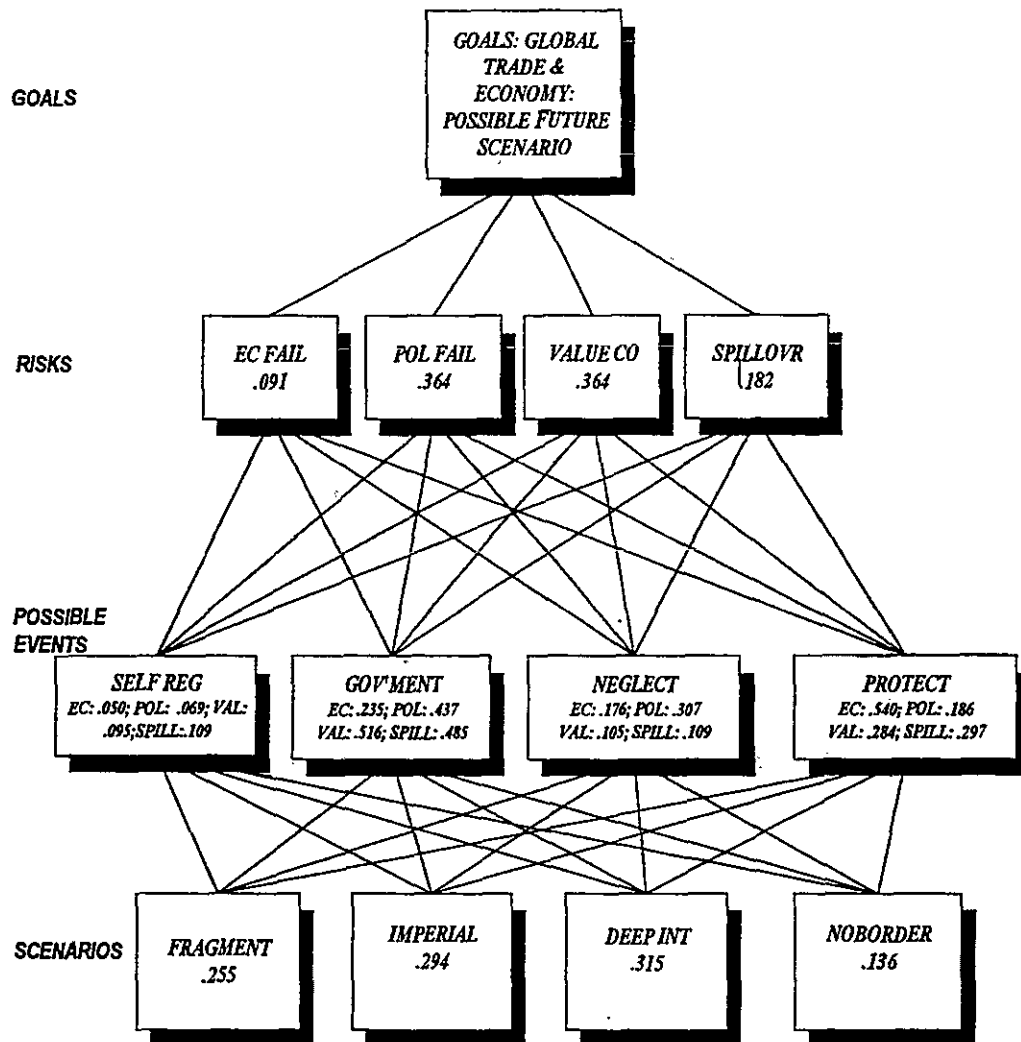
⁷ DCs would have realized that improving human-labor rights and environmental standards is to the LDCs' own benefit. Indeed, many LDCs have made progress in this area although a lot more still need to be done. In this connection, it is interesting to observe a recent sharp change of mood in the European Parliament with respect to the inclusion of Turkey in the customs union. After a long postponement, primarily due to concerns about Turkey's commitment to democracy and human rights, the European Parliament in December 13, 1995 finally approved a customs union between the EU and Turkey.

⁸ The most notable example would be the US position on China's handling of human-labor rights. Despite the increasing domestic pressures, the official US stand has been consistently leaning towards the decoupling of trade and these social issues. The incidence of the sentencing of Chinese democracy activist Wei Jingsheng to 14 years in prison, and the Beijing decision to select rival Panchen Lama in Tibet to that picked by the Dalai Lama, that have created a storm of anti-China resolutions in Capitol Hill, did not alter the official US position on the issue. In the words of Deputy US Trade Representative, Charlene Barshefsky, such a position "remains fixed and unchanged."

⁹ In general, the incorporation of uncertainty ("prior" leads to "posterior") and information asymmetry (the assumption of LDCs being the 'sender') have indeed a significant impact on the outcome of the game.

Two of the four selected scenarios with the highest weights are then selected for the next backward (planning) process, through which we will search for desirable strategies and policy actions.

Diagram 3: Forward Process



The elements used in the backward process are:

Level 2: Scenario

1. *IMPERIAL: Imperial Harmonization*
2. *DEEP INT: Deeper Integration*

Level 3: Possible Strategies

1. *INT MARKET: Improve the Operation of International Market*
2. *CONSENSU: Increase the Consensus on Commonly Held Values*
3. *GOVNANCE: Enhance International Oversight & Governance*
4. *MACROEC: Improve the Operation and Coordination of Macroeconomic Policies*

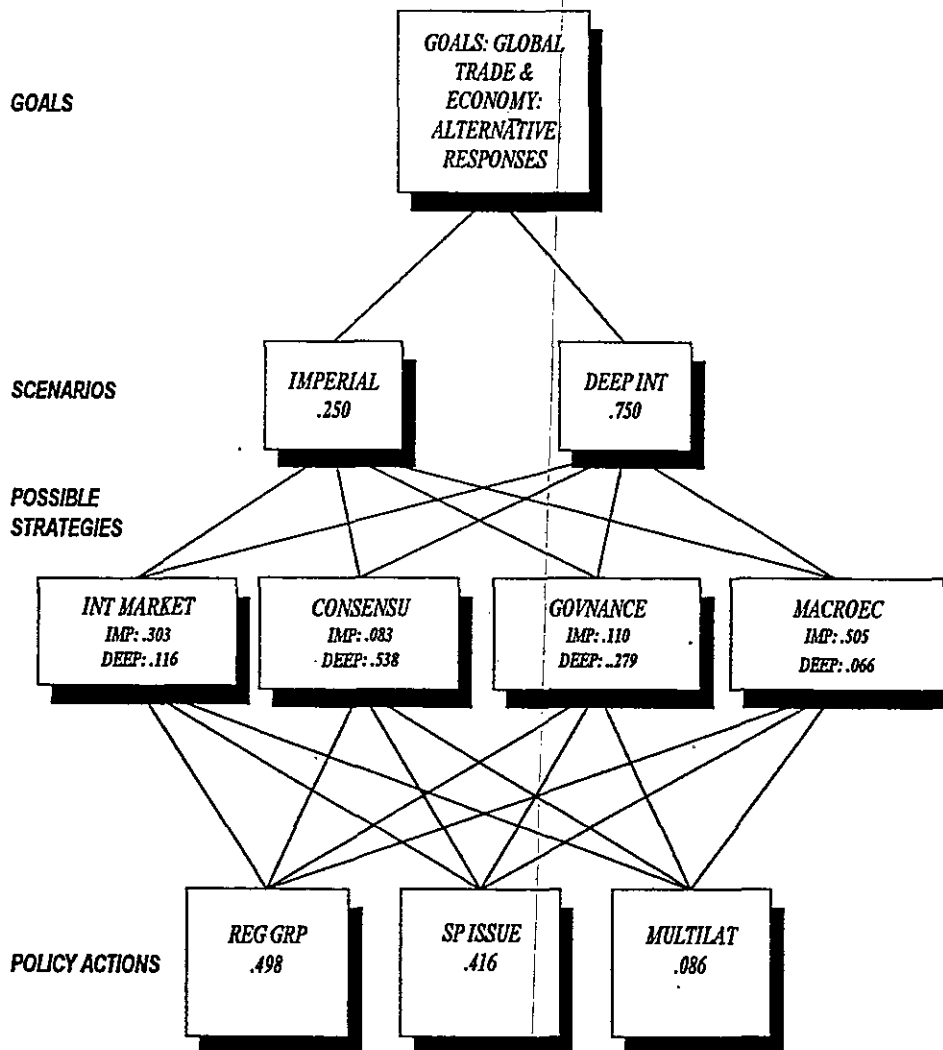
Level 4: Policy Actions

1. *MULTILAT: Join an Overarching Multilateral Group Dealing With All Issues*

2. *REG GRP*: Join Deeper Integration of Regional Grouping
3. *SP ISSUE*: Join Deeper Integration of Grouping With Common Interest & Special Issue

As the following diagram shows, the most appropriate forum for a deep integration is the one that deals with regional specific issues (*REG GRP*):

Diagram 4. Backward Process



Having determined these scenarios, preferred strategies are searched for through a backward process. These strategies ought to take into account the element of diversity and mutual recognition. Such is absolutely necessary in order to achieve the trust and secure governance of an international community.¹⁰ As the following distributive mode shows, the most appropriate forum for a deep integration is the one that deals with regional specific issues (*REG GRP*):

¹⁰ There are already a number of attempts trying to provide alternative proposals. One such attempt suggests forming a new forum (which can be called a 'club') to deal not only with trade problems but also with other issues beyond them (see R.Z. Lawrence, A. Bressand & T. Ito, *Integrating National Economies, A Vision for the World Economy: Openness, Diversity, and Cohesion*, The Brookings Institution, Washington, D.C, 1995).

REG GRP 0.498

SP ISSUE 0.416

MULTILAT 0.086

The proposed strategies, other than just simply capable of improving global economic environment, should allow consensus on commonly held values that would enhance international oversight and governance.¹¹ In the light of recognizing diversity, one should not prescribe strategies considered ideal but which do not enable some of the members to gain effectively from such strategies.

How feasible is the alternative proposal? How will nations, particularly developing countries, view such an approach? It is imperative that most developing and newly developed economies tend to support the multilateral system under GATT-WTO. It is widely recognized that the system will continue to provide a favorable setting for their continued integration into the world economy. Hence, any new proposal different from GATT rules will, at first, likely be viewed with suspicion. Yet, it is not totally unrealistic to design an alternative proposal that is in line with the multilateral system and, even going beyond it, to cover other important issues untouched by the GATT-WTO rules ("social dumping," "eco-dumping," and other forms of "psychological externalities"). The case is more well-founded considering the other options available, e.g., the undermining of an open global trading system on which the dynamism of developing economies will continue to depend. It must also be realized that a complete decoupling of social issues from trade policy seems unlikely in the foreseeable future.¹²

When several countries find common problems and interest, they may, after all, be willing to consider forming a forum that will deal exclusively with those problems ('functional clubs?'). On the other hand, given the fact that circumstances in the emerging regional arrangements can be radically different, a more spatially oriented grouping may be the preferred option, as the backward process above has pointed out ('regional club?'). To secure a multilateral oversight that will glue the global economic integration, one scenario may have gone even further by proposing a multilateral institution to provide guidance to participating members ('club of clubs?'). The latter can also function to ensure that the earlier two will conform to some agreed basic norms and disciplines.

It is clear that the general principle of the proposed forum should be voluntary, having common goals, shared values and rules. These arrangements will have the characteristic of "diverse but open", implying that "being different does not mean being closed". The recognition of "diverse" is of particular importance since it is a consistent argument long sought by LDCs when they are under DCs' pressures to impose same standards and value system. Another important feature is the adherence to only minimum standards and the premise of giving longer transitional periods to some countries to meet any new proposed obligation. This point reflects the recognition of different stages of development--hence of readiness--in different countries.

The proposed arrangement may be too ambitious, but worth considering. There is a continuum of other possibilities, including simply a dialogue between the two groups of countries through which some of the concerns over environmental and human-labor rights standards may well be diffused.

¹¹ The role of judgments--required for the AHP inputs--in the consensus making, has been long known. The Delphi technique is among the earliest tools used.

¹² It would also be in the interest of many developing countries if the proposed forum could extend the issues beyond just money and capital. Especially for very low income countries and 'severely indebted low income countries' (SILIC), supports for improvement in human resources, skills and technological capabilities could act as effective vehicles for their development. In this context, it is worth mentioning that there have been recent efforts to develop a "North-South axis" among the developing countries themselves to help the poor members of the group. This is a new form of "South-South" cooperation, which, although to many observers is considered passé, may help strengthen the national capacity building of these countries.

Final Notes

Within or outside GATT-WTO system, efforts by some countries to link environmental and social issues with trading matters will continue. In effect, the nature and size of global trade will also be determined by the extent to which disputes, tensions and conflicts in this area can be resolved. While finding the resolution of such conflicts is potentially difficult, the analysis indicates that it is not impossible to reach when policy makers in the two groups of countries are of a non-myopic type. Even when the element of uncertainty and information asymmetry is taken into account, a cooperative solution is still within reach. A more concrete recommendation has been proposed by way of constructing forward and backward processes within the context of Analytic Hierarchy Process. The proposed arrangement, similar to that of Brookings Institution, is feasible from the developing countries' perspective, as long as some general principles are met.

APPENDIX

Notes on Signaling Game

Assuming two types of LDCs' quality, $t1, t2$, and the terms 'message' $M=\{m1,m2\}$ refer to strategy, the signaling game can be formulated as follows: (1) Nature draws a type t for LDCs from the set of feasible types $T=\{t1,t2\}$ according to a probability distribution ("prior," to be set exogenously); (2) LDCs observe t and then choose a message m from the feasible set of messages $M=\{m1,m2\}$; (3) DCs observes m (but not t) and then chooses a strategy a from the set of feasible strategies $A=\{a1,a2\}$; (4) Payoffs are given by $ULDC(t,m,a)$ and $UDC(t,m,a)$. The following conjectures are related to the equilibrium notion: (1) given high "prior" probability $p(t1)$, DCs' belief $b(t1 \text{ given } m1)$, i.e., "posterior," will be high, (2) one of the perfect Bayesian equilibria will be [LDCs: $t1-m1$ & $t2-m1$, DCs: $m1-a1$ & $m2-a1$], and (3) cooperative solution can be achieved.

The Hierarchy and Non-Zero Sum Matrix Reproduced from Azis (1996a)

Diagram A1

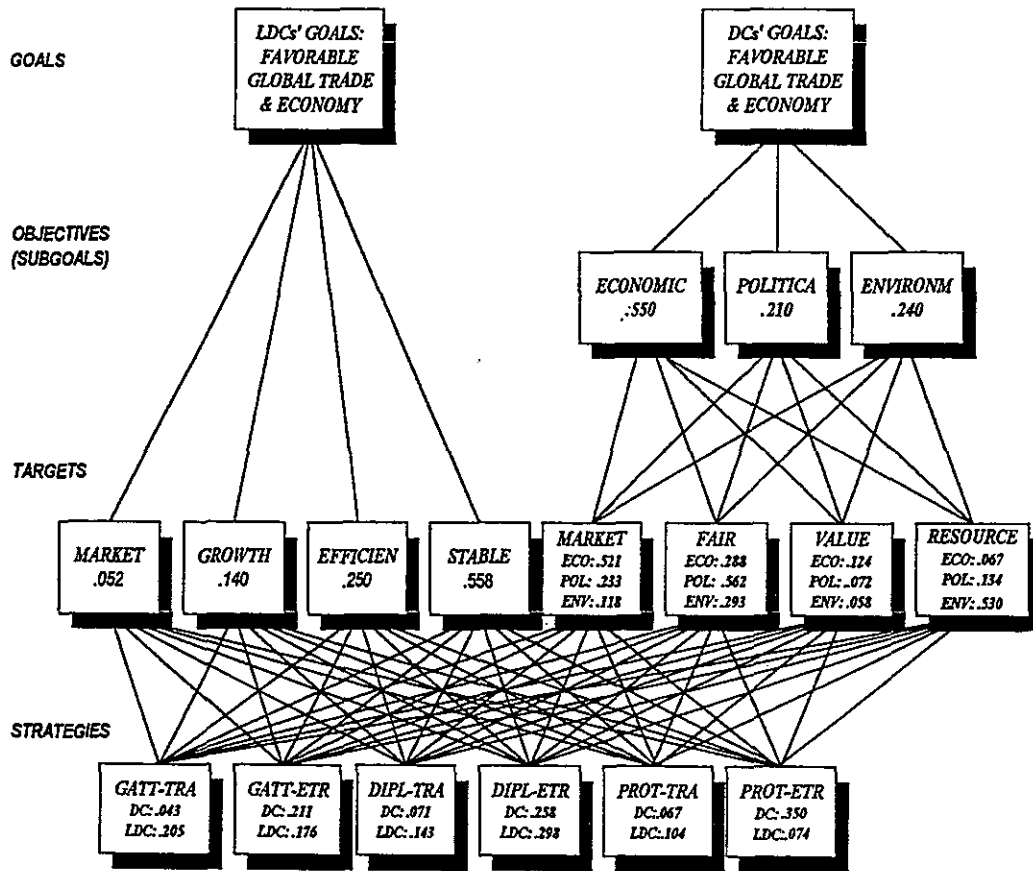


Diagram A2. Non-equilibrium Case

		<i>Developed Countries (DCs)</i>		
		<i>Quiet Diplomacy (DIPL)</i>	<i>Support GATT/WTO (GATT)</i>	<i>Trade Sanction (PROT)</i>
<i>Focus on Econ & Trade Liberalization (TRA)</i>	<i>Ec & Trade Lib, Human c Lab Rights & Env (ETR)</i>	(.298; .258)	(.176; .211)	(.074; .350)
	<i>Liberalization (TRA)</i>	(.143; .071)	(.205; .043)	(.104; .067)

Diagram A3. Alternative Case:
Tougher DCs and LDCs

		<i>Developed Countries (DCs)</i>		
		<i>Quiet Diplomacy (DIPL)</i>	<i>Support GATT/WTO (GATT)</i>	<i>Trade Sanction (PROT)</i>
<i>Developing Countries (LDCs)</i>	<i>Ec & Trade Lib, Human c Lab Rights & Env (ETR)</i>	(.072; .257)	(.106; .191)	(.039; .366)
	<i>Liberalization (TRA)</i>	(.230; .065)	(.405; .040)	(.147; .080)

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