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BILATERAL TRADE AS A DEVELOPMENT INSTRUMENT UNDER GLOBAL TRADE RESTRICTIONS

by
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In their striving toward development a number of less developed countries have espoused bilateral trade as yet another policy instrument allowing them to increase their acquisition of foreign resources. Indeed, bilateral trade agreements became a salient feature of trade flows throughout the 1960s and recent developments point to an increase in bilateral trade's share of world trade.

This has been particularly true of the trade of India, Pakistan, and Egypt, on which some useful empirical studies have been conducted (6,7,10). On the whole, however, the economic literature seems to have allocated very little theoretical attention to the problem even though this type of trade was widespread in the 1930s. (1). Holzman and Wiles (5,11) view bilateralism in the context of centrally planned economies and attribute its raison d'etre to the rigidities inherent in them (e.g., inconvertibility, carry-over from internal balance methods, and so forth). No attempt, however, is made to analyze bilateral trade systematically in the context of specific targets and rigidities which characterize all trading alternatives.

The target we are interested in is not trade efficiency as an end in itself, but growth. And for a number of countries the ability to grow depends very much on the ability to import. Hence, it is in terms of this target that we propose to evaluate the efficiency of bilateral trade as a policy instrument and to examine a number of related issues, such as the terms of trade, trade diversion, and its effect on resource allocation.

A brief description of bilateral trade agreements starts our discussion, followed by a three-country model as a theoretical formulation of the problem. Finally, several implications will be derived in relation to the issues mentioned above.

What distinguishes bilateral trade from multilateral trade or state trading is the built-in mechanism which promotes exports in payment for imports. Imports and exports need not balance in any given year but the agreement moves the two countries toward balance over a period of time (usually, three to five years). In case one of the partners shows a deficit, a "swing credit" is provided by the surplus country to finance it. If the deficit country exceeds its credit ceiling a settlement of the balance is provided within a certain period of time (usually six months). Such settlements usually consist of an additional flow of exports, although the deficit could be settled with convertible foreign exchange. Since the two modes of settlement are not qualitatively different as will be shown below - we start by assuming that the trade is to be commodity-balanced.

The model

It is pointless to discuss bilateral trade in comparison to multilateral trade without posing specific restrictions since in a standard theory of trade approach bilateral trade would appear both primitive and inefficient. Sufficient to say that under multilateral trade and perfect market conditions a country would sell its commodities to the highest bidder and buy from the cheapest source over the largest set of buyers and sellers. Hence it would reap the highest terms of trade. Multilateral trade is also compatible with all kinds of restrictive practices such as price discrimination, state trading and export taxes which tend to maximise a country's benefits from trade whenever it ceases to be a price taker (2). In this sense a unilateral monopoly is superior to bilateral

monopoly.[1/] In case a chronic deficit in the balance of payments develops, an adjustment in its exchange rate together with the manipulation of its monetary and fiscal instruments should restore equilibrium.

In order to pose the problem it is necessary to specify a set of conditions which, when they arise, reduce the effectiveness of multilateral trade and invalidate some of its advantages. In the 1930s these conditions were the acute shortage of international liquidity which resulted from the collapse of the gold standard and the need to push employment through exports in the wake of the depression and reparation payments (3). Today, while under-developed countries do not face the problem of a depressed aggregate demand they nevertheless want to stimulate their growth: on the one hand they have high import requirements necessary to realize investments which would help them break away from the low-growth traditional structure of production; on the other hand this traditional structure is incapable of supplying the kind and amount of exports necessary to pay for the required imports (with the exception of oil producers). If sufficient means of payment were vailable by international organizations such development could be financed, provided credit is extended over a period long enough to lead to the emergence of a new vintage of exports which would be sufficient to pay for the present and future imports. However, such means of payment fall far short of fulfilling sound investment possibilities and most underdeveloped countries are forced to finance their imports through their exports. This usually means to restrict their imports to the level of exports the country can sell competitively abroad at the going exchange rate. Such export basket is mostly composed of primary commodities (raw materials and food) and simple manufactures in which these countries developed a comparative advantage. The first group of commodities has frequently encountered sluggish

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1/ Wiles, (8) p.271.

growth and downward sloping demand curves while the second has been strongly resisted by buyer countries in protection of their own inefficient industries (textiles, leather goods).

Hence, less developed countries engaged in bilateral agreements view this trade as an opportunity of acquiring additional imports necessary to their developmental process without aggravating their balance of payment problems, thanks to an increase in their exports, particularly the "nontraditional" commodities.

To derive the properties of bilateral trade under a policy target, which attempts to satisfy a certain import bill and the trading restrictions which prevail in world markets, we shall set up the following model:

Let us call our less developed country, country III and let us assume it has only two trading partners: country II with which it trades on a bilateral basis - we shall refer to it as a "tied market" or "II" - and country I with which it trades only for convertible currency (free market). II and I have many trade partners other than III and any amount of a commodity exported by them to III only forms a small proportion of their total exports of that commodity. Hence, we consider III as a price taker on the import side. The prices quoted by the free market serve as "world prices" for country III. Clearly, there is no a priori reason why prices quoted from II should be higher or lower than those quoted by I. These would vary for each commodity according to its export availabilities and cost conditions as well as its assessment of III's relative need of the commodity, its ability to purchase from the free market and so forth. Hence, while the free market quotes a single world price for each commodity, the tied market can practice price discrimination vis-à-vis its trading partners.

However, even if export prices under bilateral agreements do not exceed the cheapest alternative source of supply the purchasing power of the proceeds

from the exports is limited by the choice set of exports offered by country II to III. This choice might differ substantially from the commodities which rank high among III's import priorities. Hence, the "real" price received for III's exports is lower than its nominal value. In this case a simple comparison of prices quoted from the free market, and from tied markets is not sufficient, since the means of payment differ. We shall attempt in this model to bring out with some degree of precision the real returns that our less developed country reaps when it trades its exports against a set of specific imports rather than for convertible exchange. We would want to compare a hypothetical situation where all the exports are paid for in convertible currency to the real situation where only part of the export's proceeds are in convertible currency while the rest are to be chosen from a set of potential imports.

Suppose III's totoal export availabilities can be denoted by a supply vector $S_3(s_{31}...s_{3j}...s_{3n})$ where each variety or grade of a product is treated as a distinct commodity (j = i....n). From it country I will draw a set of exports denoted by vector E_1 and II will draw a set of exports E_2. To E_1 and E_2 will be attached price vectors R_1 and R_2 respectively. Hence the total proceeds from exports will be:

(1) $V_3 = R_1E_1 + R_2E_2$

Vectors R_1 and R_2 are denominated in a convertible currency, say dollars. However, while the amount R_1E_1 would be actually transferred to III and can be disposed of at will, R_2E_2 represents simply a credit to the account of III, which can only be used for an equivalent purchase of exports from II. It should be stressed at this point that a less developed country cannot sell as much as it would want to country I out of its export basket. Indeed, the free market will distribute its purchases among the numerous sources of supply which can quote roughly the same world price on a c.i.f. basis and among those with

whom it entered into some preferential agreement. Hence, unlike the perfect market model where a large demand for a product is translated into horizontal demand curves for a multitude of sellers, differences in c.i.f. import costs, in product varieties and the prevailance of quantitative restrictions will result in a demand curve which will rapidly slope downward past a certain quantity sold. Thus, country III will take R_1E_1 as given and attempt to expand its exports towards country II.

Furthermore, II will have a vector $\bar{M}$ denoting its import requirements for the forthcoming planning period. These could be derived from various investment appropriations and various disaggregated import functions. To this vector is associated a weight vector W which will indicate III's preference for each of its import requirements. These weights could be akin to dual variables derived from a global programming model a la Frisch and reflecting the net increase in the value of a welfare function resulting from an addition of a unit of expenditure on a particular import. Or more simply, they can roughly indicate a ranking of import priorities among various investment goods, raw material and consumer goods.[1/]

Country III will choose its imports from two supply vectors (or export availabilities) S_1 and S_2, offered by countries I and II. To these are attached price vectors P_1 and P_2. From these supply vectors, country III will have to pick two import vectors M_1 and M_2 in such a way as to get as close as possible to its import requirements $\bar{M}$ under the constraint of its foreigh exchange resources V_3. In addition, any quantity imported of a particular commodity from a given source cannot exceed the availability of that commodity for export by the same source (e.g. $m_{ij} \leq s_{ij}$).

1/ We do not assign weights to exports. In general their prices would reflect their opportunity costs as investment or consumption goods. To be sure some of the export prices would be in line with "world" prices. Hence profitability among export goods (in terms of domestic resources used per unit of foreign exchange earned could vary. A system of weight on exports would then be appropriate. This would make the solution of the problem more general without, however, altering the

Summarising we have:

III's import requirements	I's export availabilities to III	II's export availabilities to III	III's possible imports from I	III's possible imports from II
$\bar{M} = \begin{matrix} \bar{m}_1 \\ \vdots \\ \bar{m}_j \\ \vdots \\ \bar{m}_n \end{matrix}$	$S_1 = \begin{matrix} s_{11} \\ \vdots \\ s_{1j} \\ \vdots \\ s_{1n} \end{matrix}$	$S_2 = \begin{matrix} s_{21} \\ \vdots \\ s_{2j} \\ \vdots \\ s_{2n} \end{matrix}$	$M_1 = \begin{matrix} m_{11} \\ \vdots \\ m_{1j} \\ \vdots \\ m_{1n} \end{matrix}$	$M_2 = \begin{matrix} m_{21} \\ \vdots \\ m_{2j} \\ \vdots \\ m_{2n} \end{matrix}$

weights on III's import requirements: $W = (w_1 \ldots w_j \ldots w_n)$

prices attached to S_1: $P_1 = (p_{11} \ldots p_{ij} \ldots p_{1n})$

prices attached to S_2: $P_2 = (p_{21} \ldots p_{2j} \ldots p_{2n})$

We shall now define a function on the set of possible import vectors. This will be a subset of $R^n x R^n$ (cartesian product of two real vector spaces of dimension n) and will be bound by country III's import requirements, its export possibilities (resources available for imports) and by I and II's export availabilities to country III $(S_{1,2})$ The function defined on this set will rank couples of import vectors according to III's preferences W.

$$(2) \qquad f(M_1,M_2) = \sum_{i=1}^{2} \sum_{j=1}^{n} w_j m_{ij}$$

where i = 1,2 and j = 1,.....,n.

The restriction on the set of possible import vectors will be:

(2a) Supply restrictions: $m_{ij} \quad s_{ij}$

(2b) Import requirement restriction: $m_{ij} \quad \bar{m}_j$

(2c) Resource restriction: $\sum_{i=1}^{2} \sum_{j=1}^{n} p_{ij} m_{ij}$

Given the restriction posed, the set of import possibilities will be a closed and bounded set (call it H) in the space $R^n \times R^n$. Therefore it is compact.[1/] This assures the existence of a possible combination of import vectors from the two sources which maximizes the function f over H and thereby offers country III a best coice of imports. Denote one such combination by $(M_1, M_2)^*$ for which $f(M_1, M_2)^* = \max.^*$

Now suppose we restrict the import vector from the free market to our availability of convertible currency namely to $R_1 E_1$. Then our set will be further restricted to a new set H_1 by the condition:

(2d) $P_1 M_1 \leq R_1 E_1$

In the case, where the value of our optimum import vector from the free market exceeds our availability of foreign exchange ($P_1 M_1^* \geq R_1 E_1$) then $f(M_1 M_2)$ will reach over H_1 a maximum $f(M_1 M_2)^+$ where

$$f(M_1 M_2)^+ < f(M_1 M_2)^*$$

This result hinges, however, on the uniticity of the maximum reached over each of the two sets. To start with, it is easy to show that each of the two sets

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1/ Hykakane Nihaido: (8), p.9.

is convex.[1/] This means that if we have a maximum, we could have either one or infinitely many. The second outcome (which is a case of degeneracy) can be avoided; for, there exists a vector of weights W' which, when appropriately chosen, would yield a unique solution.[2/]

Let us now measure the difference between the two maximums attained under the two sets of restrictions by λ. We will refer to it as the bilateral trade factor (BTF).

(3) $$\lambda = f(M_1M_2)^* - f(M_1,M_2)^\dagger$$

λ will measure the degree to which country III is diverted from its optimal import combination by the stipulation that it should receive a share

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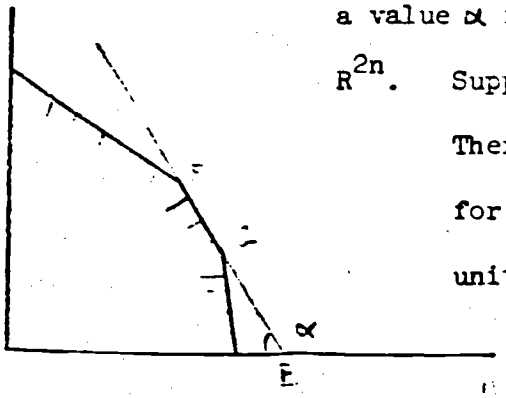
1/ By definition our set of possible import vectors is convex if for any two points of the set $(M_1,M_2)^1$, $(M_1,M_2)^2$, a linear combination of these two points will fall within the set. That is $(\theta\,(M_1',M_2'),=(1-\theta)\,(M_1',M_2'))$ where $0 \leq \theta \leq 1$ will be an import combination within the new set. Clearly for any value of θ the restrictions which define the set are satisfied.

2/ In this diagram AB is a line of all points for which the function assumes a value α in the space R^{2n} and a maximum over our subset H_1 of R^{2n}. Suppose this line coincides with a segment FG of the set. There is an infinite number of points on the segment FG, for which the function assumes a maximum. In order to assure uniticity we can find a W' as close to W as we want such that the angle α of the line AB rotates by .



of its import $\sum_{j=1}^{n} p_{2j} \; m_{2j}$ form a particular source namely the tied market. Therefore the real return which country III receives for its exports from the tied market is the nominal revenue R_2E_2 deflated by a factor $\overline{\lambda}$ (normalized). To normalize λ we set the following equation.

$$\overline{\lambda} = \frac{f(M_1M_2)^* - f(M_1M_2)^+}{f(M_1M_2)^* - \overline{f(M_1M_2)^+}}$$

The numerator reflects the difference between max* and the solution obtained under constraint 2d. If the bilateral partner offers a choice of export which is both appropriate to III's requirements (as determined by W) and competitive (as determined by P_2) to the point where the vector M_2^* in the initial solution exhausts III's proceeds from country II for its exports the constraint 2d is not binding and $\bar{\lambda} = 0$.

The denominator reflects the difference between max* and the unlikely situation where there is nothing the bilateral partner can sell to country III, not even for transhipment to country II or stockpiling, and where the real value of III's proceeds from exports to II is zero. In this case M_2^+ weighted by W is a zero vector and $f(M_1M_2)^+$ acquires a value of $\overline{f(M_1M_2)^+}$. If that situation were to occur $\bar{\lambda}$ will acquire an upper bound of 1. A more likely outcome would arise when, while M_2^* may be zero, the proceeds from exports to country II (R_2E_2) are used to obtain M_2^o as a substitute for what could have been obtained from I under sufficient foreign exchange availability. Of course M_2^* will bear lower weights and/or higher prices than the equivalent imports which would have been obtained from I and therefore:

$$M_2^oW \angle (M_1^* - M_1^+)W.$$

In this case (as in cases where $M_2^+ \quad M_2^* \quad 0$,) we will have $1 \angle \bar{\lambda} \angle 0$.

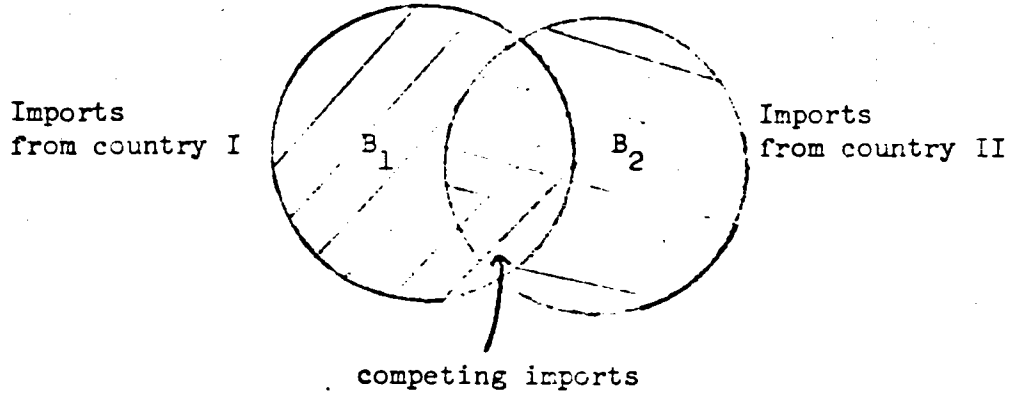
Since $\tilde{\lambda}$ is a loss factor with respect to the tied market, the actual returns on III's total exports will be:

$$(5) \qquad V' = R_1E_1 + (1 - \tilde{\lambda})\, R_2E_2 \qquad \text{where } 0 \angle \tilde{\lambda} \angle 1$$

Now, the smaller the value of $\tilde{\lambda}$ the more efficient would the bilateral trade be with country III, and hence the more desirable the division of total trade between bilateral and multilateral flows. But even where $\tilde{\lambda}$ is relatively large to the extent that it increases III's level of exports above what it would have been under purely multilateral flows, it may still be beneficial. In what follows we shall draw the implications stemming from the model and discuss the various factors which determine the value of .

Bilateral markets as preferential markets

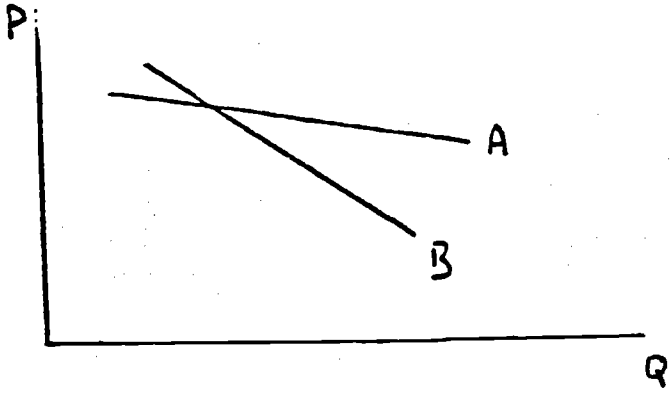
A small illustration reveals here the preferential market nature of bilateral trade. Since the two trading partners may offer competing sets of exports, a possible import combination for country III can be represented by two intersecting sets B_1 and B_2.



The intersection of the two sets ($B_1 \cap B_2$) encompasses those commodities which are competitive from the two countries (on a c.i.f. import basis) and bear the same weight. Hence, a priori, the function would be indifferent as to whether they are imported from country I or country II. However, in the process of finding a maximum and as restrictions (2d) become binding, the functions will shift competing imports to the import vector from the bilateral trade partner. Hence, country II is a preferred market of country I by virtue of the fact that any increment of imports from II can be matched by exports from III, while the level of imports from I does not bear such a relation. Notice that this can occur over a certain range without efficiency loss as the shift of all competing imports to II does not affect max.*

However, as other imports begin to move to II under the convertible exchange constraint, max.* starts to fall along the path of max$^+$. It simply means that the cost of transforming domestic resources into foreign resources has risen. Nevertheless, this cost might still be lower than the alternative offered by multilateral markets. The relatively higher terms of trade which can be fetched in the bilateral market would result from a higher demand elasticity facing the products marketed. And this for two reasons:

i) on account of the preferential treatment the demand curve facing country III's product in the protected bilateral market will be more elastic than in the free market where all competitors have equal access. This can be demonstrated within the framework of Sweezy's diagram (9):



We have two demand curves: A is drawn on the assumption that only country III can reduce the price of a given commodity, while its competitors hold their own; B is drawn on the assumption that all competing countries to III reduce their price of that commodity. Clearly a preferential treatment allows country III to move along curve A while multilateral trade would move it along the far less advantageous curve B.

ii) It is presumed that the elasticities of substitution among consumption goods for the countries engaged in bilateral trade would be higher than for developed countries engaged in multilateral trade. This results from the foreign exchange constraint under which tied markets operate and hence the lower order of preferences they would have for quality refinements, model changes and pure consumer choice.[1/]

Complementarity

The advantages which III can reap from bilateral trade depends very much on the export basket II has to offer. One would want vector M_2^* (the optimum import vector to be drawn from the tied market) to have as many positive elements in it as possible and be weighted as heavily as possible. This would occur when II is both able to offer the commodities which meet III's import requirements and to do it at competitive prices (world prices or better).

In a sense, a high degree of complementarity of II's export basket to III's import requirements would reduce the possibility of R_1E_1 being binding and would tend to make $\bar{\lambda}$ small in case R_1E_1 does hold as a constraint. When one of the bilateral partners is industrially advanced and large, implying varied export and import baskets, such a complementarity might naturally occur.

1/ Tourism is a case in point. Whereas residents of Western Europe can choose any country where to spend their vacations, tourists of Eastern European countries often have their choices restricted to those countries with whom they have bilateral agreements.

On the other hand, small countries may experience larger values of $\bar{\lambda}$, resulting from the disparity between their demands and their partner's supply availabilities. This can be remedied if the export availabilities to each partner are increased and if the new export availabilities are competitive. Whereas this is difficult to do for any single country within a short period of time, it can be easily done within a group of countries which opt for the convertibility of their currency (within the group). Thus each country will now face the export availabilities of all the other members of the group which will both increase complementarity and the competitiveness of the bill of imports offered. This "multilaterally balanced trade" is now being applied within Eastern Europe through ruble convertibility within the Comecon and would approach Frisch's ideal (4).

Trade Diversion and Long-Term Equilibrium

Since, as we have seen above, export returns are in general lower under bilateral than under multilateral trade, it would be in the interest of country III to sell everything it can in free markets at the going price and then allocate the remainder of its export availabilities to tied markets. This would maximize the term R_1E_1 in equation (1) hence reducing the size of the constraint (2d) and help minimize $\bar{\lambda}$. It is likewise in the interest of the partner country (country II) to have a set of imports facing it which would be as close to its import priorities as possible. For instance, country II would want to buy on a bilateral basis certain primary commodities or food items such as rice, rubber or tea to which it attaches a high priority and which it would otherwise buy for convertible exchange. Hence the magni-

tude of the variable $\bar{\lambda}$ for each of the trading partners becomes a matter of bargaining and subject to economic and political influence. Under this bargaining some trade could be diverted from free markets into tied markets so as to reducethe divergence between import needs and export availabilities which might arise more acutely for one of the partners. For instance, Egypt is a price taker in Arab markets for rice. Nevertheless, it might be forced to divert part of these potential sales for convertible exchange to Eastern European countries in order to diversify its limited list of exports. Starting from (1) our new export equation will be:

$$(6) \qquad V'' = R_1 (1-\zeta) E_1 + (1-\lambda') R_2 E_2'$$

where $(1-\zeta)$ is a diagonal matrix denoting for each ζ_{ii} the proportion of e_{1i} which has been diverted into e_{2i} (where $E_2 + \zeta E_1 = E_2'$). Clearly a lower $R_1 E_1$ will restrict M_1 even further and hence would increase λ to λ'. Hence, trade diversion in this case reduces the amount of convertible exchange available for imports from free markets which in turn worsens the term of exchange with tied markets. Conversely, it imporves the relative terms of trade of the bilateral partner. Therefore, it is equivalent to the settlement of a deficit sustained by one of the parties to a trade in convertible foreign exchange.

Aside from this deliberate trade diversion arising out of the bargaining process between the two partners some trade diversions may occur as a result of a general slackening of efforts in preserving market shares obtained in convertible currency areas, let alone gaining additional markets.

This process might be further encouraged by the price illusion fostered by the nominal export price vector R_2. Hence the total revenue from trade when the country only trades on a multilateral basis might substantially exceed what is actually sold on free markets when it also engaged in bilateral trade. If the country fetches a hypothetical g in foreign exchange when it trades solely on a multilateral basis its net gains in export returns from bilateral trade will be:

(7) $\quad b = V'' - g$

Both trade diversion and the value of $\bar{\lambda}$ can be reduced by simply lowering the overall volume of export and import which enter under the bilateral agreement. This can stem from a lower level of optimum $(M_1M_2)^*$ or conversely by restricting import requirements $\bar{M}$ or adapting them to the availabilities of the bilateral partner through a different W. In any case, it becomes a question of trading off a higher fulfillment of one's import requirements against a higher domestic resource cost of one's exports, implied by a higher equilibrium would be reached at a point $\bar{\lambda}^*$ where the marginal efficiency of an additional unit of foreign resources acquired through trade equals the marginal domestic resource cost of paying for it.

Over some time horizon a process of adjustment will take place both to eliminate trade diversion and to maximize profits from experts. For trade diversion need only occur in an initial period when the country is not adjusted to the bilateral/multilateral allocation. In the longer run, provided the supply of exports is elastic, such trade diversion can be eliminated.

Likewise with respect to $\bar{\lambda}$. If trade is to be fair between the two partners, we would have $\bar{\lambda}_1^* = \bar{\lambda}_2^*$, provided they are derived from the same system of weights. However, it would be purely coincidental if $\bar{\lambda}_1^* = \bar{\lambda}_2^*$.

Hence, the movement towards such an equality can only be achieved through time as the appropriate adjustments are made in the export and import vectors of the two trading partners.

Allocative effects of bilateral trade

Some of the literature concerned with trade among East European contries often brings out the possibility of trading in the "wrong" commodity, i.e., where a commodity which should have been imported is exported at a loss.[1/] However, it would be misleading to associate this possibility to the practice of trading on a bilateral basis. For it would always be to the country's interest to offer those commodities in which it has a comparative advantage.[2/] Those commodities which are priced above the world price will either be rejected by the trading partner of if accepted would tend to increase his λ making this bilateral trade less attractive to him and forcing eventually a reallocation of imports and exports. However, if a country will not produce a "wrong" commodity as a result of bilateral trade it might increase the production of those commodities which are highly desired by the bilateral trading partners or adapt them to his specifications.

On the import side, the reallocation of resource might still be more pronounced. Investment allocations among industries as well as the choice of techniques involved might be decided by the bill of goods offered as imports by the trading partner. This investment reallocation would increase the weights in favor of the bilateral partner and hence reduce the value of λ . However,

1/ (5), p. 245.

2/ We can define a state of comparative advantage for any commodity j destined to market i when : $\frac{(r_{ij} + t_{ij})}{1 + v'} \leq z^*_{ij}$

where r is the export price, t the transport cost, v the rate of exchange, v' the of currency overvaluation and z^*_{ij} the "world" price of commodity j in market i.

a part from the complex question pertaining to the overall cost of such a reallocation (from an efficiency point of view) it brings out the problem of economic dependence which may become severe for a small country adapting its import and export bills to a large bilateral partner.

Aid through trade

It is commonly agreed that aid through trade consists in granting credit to an underdeveloped country for the purchase of imports to be repaid at a later date with exports. This is a form of bilateral trade where one party fulfills the agreement at a later date against the payment of interest. In this framework, however, the element of time (deferred payment) need not be a necessary characteristic of aid. Let us define, at any point in time, a purely commercial transaction as one where the two partners have equivalent $\bar{\lambda}$'s.[1/] Then, country II would be providing aid through trade to country III if $\lambda_2 \geq \bar{\lambda}_3$. This is a form of aid which is frequently overlooked for it is not tied to specific projects but applies to regular yearly flows of imports and exports.

With respect to aid which is project tied there is some confusion in each case as to the exact amount of aid provided. A full measure of such aid should take into account the following three factors.

1. Difference in interest rate between that which is charged by the donor country and the equivalent going market rate.
2. Difference in prices charged by the donor country on the equipment specified in the aid agreement and the going world prices for equivalent equipment.
3. Difference in the weighted value of the goods sent as repayment to the donor country and the goods which the donor country would have bought had it received convertible exchange.

1/ We assume the weighting systems used for the two sets of import requirements to be the same.

Factors 1 and 2 can be measured in isolation of the annual bilateral trade flows with the donor country. For instance, the difference in prices in factor 2 can be expressed as a percentage of the total value of equipment and added to the nominal interest rate. Factor 3, however, is a function of the absolute level of bilateral trade flows between the two countries. Indeed, bilateral trade flows would have already encompassed for the donor country its preferred imports from the aid receiving country. Hence, any additional imports would have relatively lower weights attached to them. The proper method for the donor country to measure λ would be first to compute λ would reflect the relative deterioration in the weighted value of the goods used as repayments by the aid receiving country. This deterioration in the terms of trade plus the interest foregone on the financing of the imports will represent to the donor country the cost of providing the aid. The same procedure could be applied to the aid receiving countries, and as it often happens in aid programming, the value of the aid to the receiving country may diverge substantially from the cost of aid to the donor country.

We can now summarize the conclusions shown from our model:

1. Bialteral trade is essentially a preferential trade agreement, where commodities of the two trading partners receive a preferential treatment, in their respective markets. From a two-country point of view and under market restrictions governing multilateral flows it is trade creating and need not involve any loss factors as long as it is limited to the exchange of competitive commodities. From a world point of view it has the limitations of any tariff club.[1/] When pushed beyond the exchange of competitive commodities, bilateral trade involves a loss factor since returns from exports to the trading partners become restricted

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1/ The limitations are brought out by the Theory of Common Markets, see (3).

to a set of imports which gradually exceed world prices, (the acceptance of products which depart from certain specification requirements is another dimension of price). This in effect reduces the real value of export returns received from the bilateral partner. However, since world prices are often exogenously given and may include excess profits to the exporter, the loss factor can simply be viewed as a discount factor which takes advantage of elastic demand curves for the commodity traded in their privileged markets. Hence, on one hand the terms of trade under bilateral agreement tend to improve on account of the preferential factor but on the other hand they tend to worsen under the restriction which bilateralism imposes on the import set of each partner.

2. The more complementary the two partners in their import-export bundles the greater the efficiency of bilateral trade. Hence, the inclusion of additional partners will broaden the variety of goods to be traded and a common currency area with an overall balance between imports and exports for each trade partner will be more efficient than bilateral trade flows.

3. Trade diversion from multilateral markets to bilateral markets is not an inherent feature of bilateral trade by a temporary measure intended to provide adequate payment to a high level of the bilateral partner. Basically, it amounts to the settlement of a deficit in the trade flows with convertible foreign exchange. However, as the country adjusts in its allocation of resources to an optimum level of the bilateral trade, such diversion need not occur.

4. Aid through trade is viewed in this framework as a sequential balancing of bilateral trade where the aid component of the donor country consists of net interest foregone on the transaction and the loss factor involved in a repayment which consists in commodities rather than convertible exchange.

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