

SPECIAL PAPERS IN INTERNATIONAL ECONOMICS

No. 8, JANUARY 1968

THE THEORY AND
PRACTICE OF
COMMERCIAL
POLICY:
DEPARTURES FROM
UNIFIED EXCHANGE
RATES

JAGDISH BHAGWATI

INTERNATIONAL FINANCE SECTION

DEPARTMENT OF ECONOMICS

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The author, Jagdish Bhagwati, is at the time of this publication Professor of Economics at the University of Delhi, but has accepted a new appointment as Professor of Economics at the Massachusetts Institute of Technology. This paper is a revised, enlarged version of the Frank D. Graham Memorial Lecture given at Princeton in the Spring of 1967, when the author was Visiting Professor at Columbia University.

Professor Bhagwati is best known for his comprehensive article on "The Pure Theory of International Trade: A Survey" in the Economic Journal (1964) and his book, The Economics of Underdeveloped Countries (1966).

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FRITZ MACHLUP, Director
International Finance Section

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PREFACE

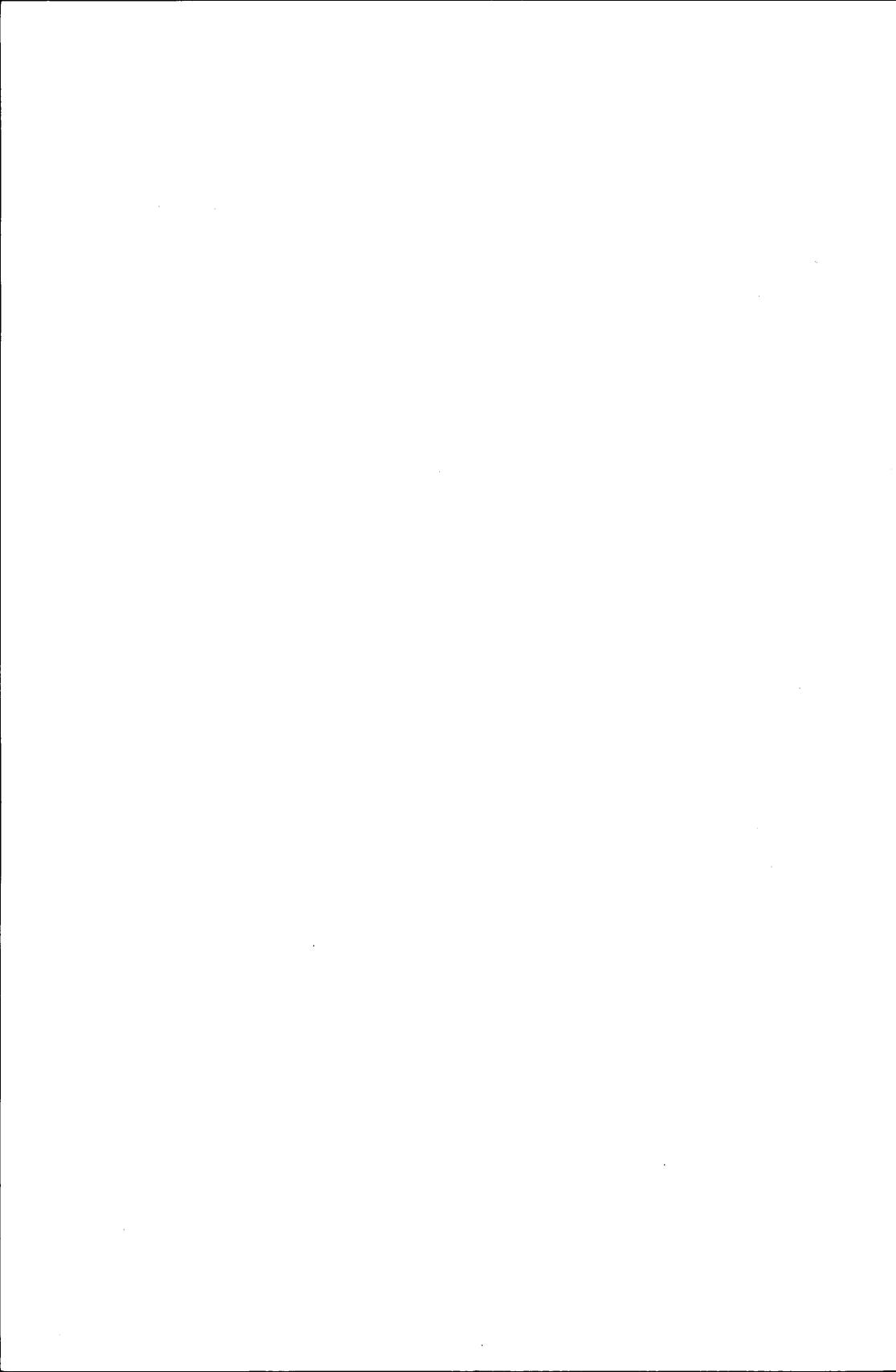
It is always an honor to be invited to lecture at Princeton. It is a yet greater honor to be asked to give the Graham Memorial Lecture. There is scarcely a major economist writing in the area of international economics today who has not come under the influence of Graham's writings. His interest spanned a wide field, from problems relating to the balance of payments to the theory of specialization in production and exchange; and he, with those whom he stimulated, managed to push the frontiers of the subject further at a number of points. But, to him, as well as to his great contemporaries, theory was no dry pursuit: it was the handmaiden to economic policy. Among the best-written works of Graham must be ranked his popular, but elegant and tightly argued work on *Protective Tariffs* (1934), in which he explored the issues relating to commercial policy with a dispassionate mastery of analysis.

Quite deliberately, therefore, I have decided to range over the issues raised by commercial policy, many of which were dealt with so well by Graham over three decades ago.

Needless to say, only parts of my study were actually read to the Seminar in Princeton. I wish to thank the International Finance Section for encouraging me to submit this complete version for publication. I gratefully acknowledge the editorial help given to me by the permanent staff of the International Finance Section and also, or perhaps especially, by Professor Stanley W. Black of Princeton University. Finally, I should like to record here my indebtedness to Paul Samuelson, Tibor Scitovsky, T. N. Srinivasan, and Harry Johnson for correspondence and conversations concerning some of the issues in this work.

Delhi, India
October 1967

J.B.



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The Theory and Practice of Commercial Policy: Departures from Unified Exchange Rates

In this study we shall consider the problems of commercial policy in its widest sense, exploring arguments that justify a departure from unified exchange rates in general. Unified exchange rates are defined to mean that (1) all exports occur at the same effective exchange rate as all imports (where the "effective rate" includes tariffs, trade subsidies and premia); and (2) the domestic incentives to produce and consume are not, in turn, distorted (by taxes and subsidies on domestic production, consumption and factor use) away from those provided by the structure of international prices. Thus the relative incentive to produce and consume tradable commodities, as provided by their domestic relative prices, is (identical or) unified with that obtaining internationally.

These questions have assumed considerable policy importance in recent years, especially in relation to the less developed countries. Although their economic performance can least afford to be guided by inefficient policies, it is increasingly becoming obvious that they have been severely impeded by a combination of trade and exchange-rate policies capable of inflicting serious losses from resulting misallocations of scarce resources. I shall thus go on to argue that, while a considerable body of argument can indeed be developed in defense of departures from unified exchange rates, the *de facto* operation of multiple effective rates by many developing countries today is incapable, in general, of rationalization on such grounds, and the likelihood of significant losses resulting from such policies can be empirically indicated. I shall also offer certain observations on the reasons for this state of affairs.

I. UNIFIED EXCHANGE RATES

At the heart of the welfare theory of trade are three basic propositions (see Bhagwati, 1967b):

Proposition (1) The trade situation (the opportunity to trade) is

superior to the no-trade situation (the absence of trade opportunity), from the viewpoint of efficient technical possibilities.

Proposition (2) Under perfect competition, free trade will enable the economy to operate with technical efficiency.

Proposition (3) Under perfect competition, free trade will enable the economy to maximize utility, subject to the given constraints, so that, from the viewpoint of utility-based rankings as well, free trade is optimal and superior to no trade.

For Proposition (1), remember that technical efficiency is defined in the usual Paretian sense. Hence Proposition (1) merely states that it is *possible* to get more of one good and no less of the other when the opportunity to trade is available than when it is not.

This is readily seen in Figure 1, similar to Samuelson's illustration, where the price line $CD = EF$ represents the international prices and OAB the production-possibility set for an individual country. If production is set at P and trade is undertaken (as it must be) at the stated international prices, OEF becomes the availability set and EF the availability frontier, the Pareto-efficient locus of available combinations of the two commodities. But if production is set instead at P^* , the availability set is the *largest* possible, at OCD , and CD represents the most efficient Pareto-optimal availability line subject to the domestic and foreign transformation constraints.¹ On the other hand, AB , the production-possibility frontier, represents the efficient availability line in the absence of trade opportunity.

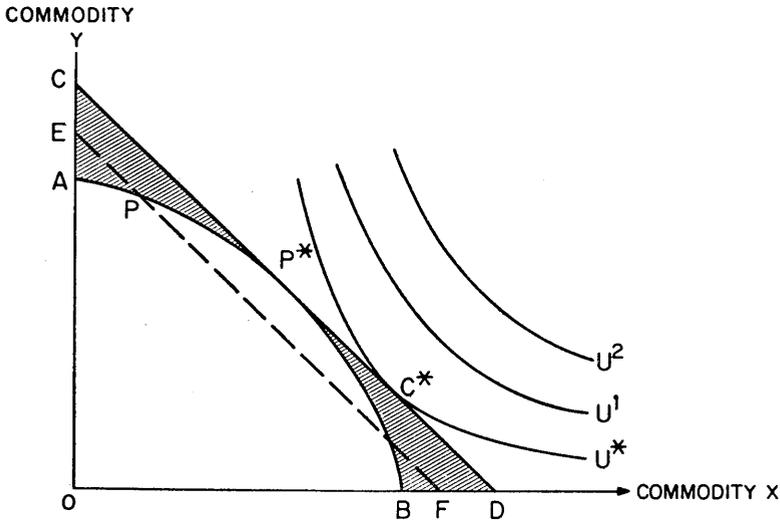
It is thus clear immediately, since CD lies uniformly outside AB (though touching it at P^*), that *any* bundle of commodities which is available by production alone (that is, in the no-trade situation) *can* be improved upon (with one borderline case at P^*) by production at P^* and trade therefrom.

Hence, the opportunity to trade represents for the economy a superior situation than the absence of trade. In other words, the trade situation is superior to the no-trade situation.

Note that this proposition merely states that it is *possible*, if the trade opportunity is exploited in a certain way, to have more of one good and no less of the other(s) under trade than under no trade. The

¹ Note that any shift of production from P^* , and trade therefrom, to production at another point (such as P) and trade from that new point will only *reduce* the availability set open to the economy. Hence, production at P^* represents the most efficient production point from which trade can be conducted.

Figure 1
Trade Situation versus Autarky



Without trade, APP^*B represents the production-possibility, and hence availability (or consumption-possibility) frontier for an individual country. If unlimited trade is possible at the world price ratio given by CD 's slope, the new availability frontier is given by CP^*D , the farthest-out line with slope CD that touches the domestic production-possibility frontier. Any domestic welfare function (of the standard static variety) will be maximized at a point such as C^* , which gives more welfare than any point within APP^*B (save in the singular case where C^* and P^* happen to coincide).

proposition does *not* assert anything as to whether a specific economic system will in fact manage to utilize the trade opportunity in this technically efficient manner. Of course, the proposition that trade could expand the economy's availabilities is hardly surprising once one realizes that the possibility of trade really adds yet another "technological" process of transforming exportables into importables, and this cannot but improve (or, at worst, leave unchanged) the availabilities defined by the *domestic* resource and technological constraints. The proposition is thus clearly not conditional on the properties of the domestic production-possibility set.

This is not the case with Proposition (2), which relates explicitly to whether an actual institutional system will operate with *technical* efficiency. It states that, for a competitive price system, free trade *will* in fact enable the economy to exploit the trade opportunity most effectively and thus operate efficiently (that is, bring production to P^* and

trade along CP^*D in Figure 1). The proof of this proposition is straightforward and rests on the fact that with (a) free trade defined as a policy constituting the equalization of foreign and domestic prices, and (b) perfect competition assuring the equalization of domestic prices with the marginal rate of transformation in production (on the production-possibility frontier), the economy must necessarily end up producing and trading efficiently, provided the production possibilities are a convex set. This rules out (as we shall see later) increasing returns leading to concavity. To illustrate: under free trade at price $CD = EF$, the economy *will* produce at P^* and trade along CD , thus operating with technical efficiency.

Note further that Proposition (2) can be readily adapted for institutional frameworks other than that of a competitive price system. Thus, for an economic system which does not use (domestic) prices to guide production, it is conceivable that an alternative way of operating with efficiency would be for planners to follow the rule of *equating foreign prices with the marginal rate of transformation of products in domestic production.*² This efficiency rule will ensure the operation of the economy at technical efficiency; in Figure 1, the planners will be guided by the rule to producing at P^* and thus trading along CP^*D . Free trade merely happens to be the policy that enables a competitive price system to implement this efficiency rule.³

It is now possible to go beyond questions of technical efficiency and raise the issue of utility-based ranking of free trade and no trade. If we take a well-ordered index of social utility, Proposition (3) follows immediately. Formally, we would be maximizing a function such as

² For a country, however, that enjoys monopoly power in trade, the rule modifies to the well-known prescription to equate the marginal terms of trade (that is, the marginal rate of transformation through foreign trade) with the marginal rate of transformation in domestic production. The rule can be obtained more directly by maximizing the availability of one commodity subject to specified level(s) of the other(s), subject further to the constraints imposed by the implicit domestic-transformation function and the foreign reciprocal-demand function. I shall return to this point later, in Chapter II.

³ Following on this, I have found it useful, in the classroom, to tell my Indian students that even a "Soviet-type" economic system, which may decide to avoid the use of prices to guide domestic allocation of resources, cannot afford to ignore *international* prices, the reason being that they really represent, from the welfare point of view, a "technological" datum. I may also add that the distinction between Propositions (2) and (3), based on the distinction between technical efficiency and utility maximization, is also very useful if one is teaching students living in a "planned" economy. Professor Bent Hansen, who has taught in Cairo for some years, told me some time ago that he has also found it useful to teach free-trade optimality in terms of Propositions (1) and (2) above.

$U = U(X, Y)$, where U stands for social welfare, X and Y for the available commodities, and the function has the standard properties (see Samuelson, 1956), such as

$$\frac{\partial U}{\partial X} > 0, \quad \frac{\partial U}{\partial Y} > 0, \quad \left| \frac{dX}{dY} \right| < 0 \quad \text{and} \quad \left| \frac{d^2 X}{dY^2} \right| < 0$$

$U = \text{constant} \qquad U = \text{constant}$

This function would be maximized subject to the implicit domestic-transformation function and the foreign-reciprocal-demand function. It would then be shown that, under free trade, a perfectly competitive system would satisfy the derived maximizing conditions.

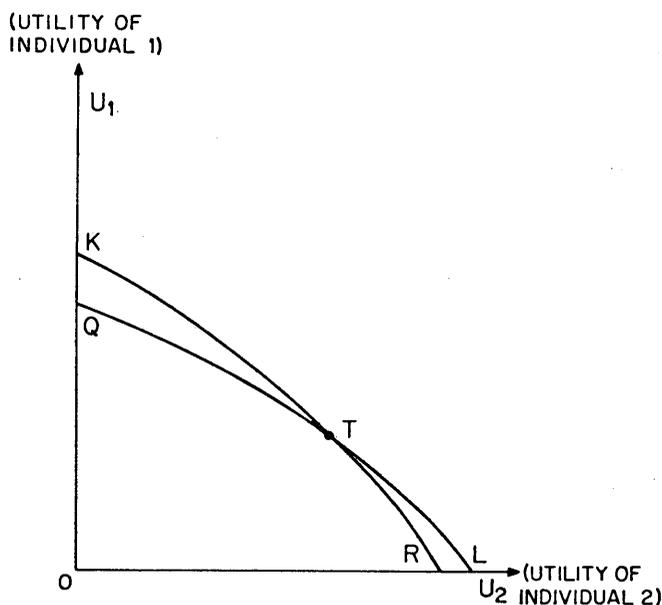
For those not anxious to raise questions about the incomparability of different persons' utilities and who are ready to accept a well-ordered index of social utility, this procedure would be entirely satisfactory.⁴ But those who, reluctant to go beyond consideration of utility for each (incomparable) individual, wish to base rankings by utility on the criterion of superiority for all income distributions may prefer the approach of comparing utility-possibility loci used by Samuelson [1962] and Kemp [1962]. They argue, quite correctly, that the fact that CD , the availability frontier under free trade, lies uniformly outside (though once touching) AB , the availability frontier under no trade, implies that the utility-possibility locus for the free-trade situation must also lie uniformly outside (though possibly touching) that for the no-trade situation, as illustrated in Figure 2 for a two-person economy. This implies that, under free trade, for *any* utility distribution (except at the point(s) where the two loci touch⁵) achieved under no trade, it is possible (via ideal lump-sum taxes and subsidies) to achieve a higher level for both individuals. And, similarly, under free trade, for *any* utility distribution achieved under restricted trade, it can be shown that it is possible (via ideal lump-sum taxes and subsidies) to achieve a higher level for both individuals. Hence free trade is the optimal policy (for all income distributions).⁶

⁴ For those unwilling to assume that *laissez-faire* can be counted on to provide the ethically proper income distribution and yet want to use a social-utility index, Samuelson's (1956) construction of "social-indifference curves" is the appropriate reference.

⁵ As Professor Samuelson has pointed out to me in correspondence, the utility-possibility locus under free trade may even *coincide* with the utility-possibility locus under no trade if all individuals are alike and have unitary income elasticities, and if C^* in Figure 1 coincides with P^* .

⁶ While the argument developed around the illustrations has assumed trade only in final products, absence of intermediates, and given endowments of primary

Figure 2
 Superiority of Free Trade over Autarky, Illustrated
 through Utility-Possibility Curves



QTR represents the utility-possibility curve, in a two-person economy, corresponding to the no-trade situation. *KTL* represents the utility-possibility curve corresponding to the free-trade situation. *KTL* lies uniformly outside *QTR* (though touching it at *T*), indicating that the free-trade situation is superior (or, at minimum, equivalent) to the no-trade situation from the viewpoint of social welfare.

It follows, from these fundamental insights of the theory of trade and welfare, that economic welfare, derived from the flow of currently available goods and services, will be maximized by the adoption of policies that unify the effective exchange rate, provided suitable monetary and fiscal policies are adopted to maintain Keynesian full employment. Any departures from such a policy would involve (1) trade tariffs, subsidies, and quantitative restrictions, (2) production and consumption taxes and subsidies, (3) taxes and subsidies on factor use, or (4) exchange control combined with overvaluation of the exchange rate, or undervaluation of the exchange rate, any of which policies will result in nonunified effective exchange rates and thus will pull the economy away from the optimal position.

factors, the theorem that free trade is the optimal policy is independent of these simplifying assumptions.

The conclusions are so impressive that Graham (1934) could write with eloquence:

. . . Whether a country is rich or poor, big or little, new or old, with or without high standards of living, agricultural, industrial, or mixed, makes no difference. It is a matter of mathematics, quite independent of environment, that there is an *inherent* gain in the specialization along the lines of *comparative* competence which unshackled trade tends to develop.

There is no possible refutation of this analysis. Advocates of a restrictive commercial policy must, in logic, accept it as a fact and attempt to show that the gain may be outweighed by economic or other considerations of superior importance. . . . The *presumption* is always in favor of free trade, since the gain therefrom is certain, and the loss, if any, dependent upon incidental circumstance. This presumption is rebuttable but it is ever present; and, in this sense, the classical economists were right in insisting that free trade is a ubiquitous and timeless principle. Other things being equal, it will enable people to have more goods of every kind than would otherwise be possible (pp. 58-59).

An economist writing today could not have put the essence of the problem better. But the fact is that the analytical writings since Graham's time have resulted in an overwhelming accumulation of arguments which indeed accept the basic efficiency of specialization in trade but demonstrate the advantages of departure therefrom for "economic or other considerations of superior importance." It is to these arguments, and some novel but (in my judgment) significant ones, that I now turn.

II. JUSTIFIABLE DEPARTURES FROM UNIFIED EXCHANGE RATES

The arguments for departing from unified exchange rates can, in general, be divided into two broad types: (1) those that accept the traditional adoption of the objective function which defines social welfare as a function of the currently available flow of goods and services but point to factors such as externalities, for example, to show that a departure from unified exchange rates is called for; and (2) those that modify the objective function, thereby resulting in different optimality conditions from those satisfied by unified exchange rates.

The former set of arguments can again be classified into (a) those resulting in optimal intervention in the form of tariffs, (b) those calling for optimal intervention in the form of export subsidies, and (c) those leading to optimal intervention in the form of *domestic* tax-cum-subsidies on consumption, production, or factor use. The latter set of arguments, depending on changes in the objective function, are broadly divisible into two classes: (a) those that involve essentially the notion of "dynamic comparative advantage," leading to a conflict between today and tomorrow; and (b) those that invoke objectives, many traditionally (though rather oddly) considered to be "non-economic," such as the collection of revenue, achievement of specified income distribution, maintenance of specified levels of production in industries of "strategic importance," and so on.⁷

A. TRADITIONAL OBJECTIVE FUNCTION

I shall deal successively with the arguments resulting in first-best cases for tariffs, trade subsidies, and domestic tax-cum-subsidies on production, consumption, and factor use. Where it seems useful, I shall also consider whether alternative forms of intervention, though sub-optimal, may still improve welfare over the level reached under unified rates.

⁷ Needless to say, some of the non-economic objectives are themselves treated best sometimes as essentially involving a conflict between today and tomorrow. For example, industrialization can be treated *either* as a non-economic objective *or* as an economic policy that is justified by externality arguments which may involve a conflict between income today and income tomorrow. Similarly, revenue collection may be required to raise the savings rate in the interest of growth but may involve loss of current income regardless of how revenue is raised (for, let it be admitted, revenue cannot in practice be raised by lump-sum taxes).

1. ARGUMENTS FOR TARIFFS AS FIRST-BEST POLICY

(1) The traditional argument for first-best tariffs relates to the presence of monopoly power in trade. Unified exchange rates, in such a situation, will not lead to a satisfaction of the first-order conditions for a Paretian optimum: the equalization of foreign and domestic prices will not equate the domestic marginal rate of transformation in production and the domestic marginal rate of substitution in consumption with the marginal rate of transformation through foreign trade. On the other hand, the adoption of a suitable tariff (or structure of tariffs) will permit these three marginal rates to be equated, thus leading to optimality. The first-best solution for utility maximization will therefore involve the levy of a suitable tariff (or structure of tariffs, if more than two goods are considered, in which case, because of cross-elasticity terms, some imports and exports may be subsidized).

The optimum tariff, when derived, will vary with the income distribution. Further, and more importantly, if the producers themselves combine to exercise the monopoly power, the need to impose the optimum tariff by policy will be avoided. However, the situation will turn into a sub-optimal one *if* the monopoly is extended also to domestic sales, as would seem natural. Further, these arguments for departing from a unified exchange rate are not to be dismissed as unimportant in practice: countries do possess such monopoly power, for certain lengths of time, although over protracted periods substitution possibilities tend to be considerable. Nor does the possibility of retaliation necessarily rule out the possibility of gain from the imposition of monopoly tariffs. Recent analyses (see Johnson, 1965b) of the question, using a Cournot-type reaction mechanism where countries retaliate on the principle of levying optimum tariffs, have shown that at the end of such a process a country may still be left better off than under a unified exchange rate.⁸

(2) An important variation of this argument, with rather more empirical relevance today, concerns the possibility of discrimination between alternative markets, as distinct from the exercise of monopoly power in a unified foreign market. Typically, trade opportunities present themselves discretely, among different trading blocs that are

⁸ If the possibility of tariff retaliation *decreases* when the monopoly power is exercised by a domestic production subsidy to the importable industry, then (even though this would be *ceteris paribus* an inefficient way of exercising the monopoly power in trade) the country might be left better off by levying such a production subsidy-cum-tax rather than by imposing tariffs.

demarcated in varying degrees. If the marginal terms of trade differ from the average terms of trade in two alternative markets, for example, the optimal policy would involve equating the marginal terms of trade in the two markets to the domestic marginal rate of transformation and rate of substitution in consumption and *not* operating at a unified exchange rate. Typically, this is the kind of situation that confronts many developing countries today, as a result especially of the possibility of bilateral-trading arrangements with a large number of potential trading partners (including the Soviet bloc).

(3) An important first-best argument for using tariffs, though transitionally, derives from the manner in which tariff negotiations are conducted. For a country without monopoly power in trade, a unified exchange rate will in general be the optimal policy. Hence the imposition of a tariff will reduce economic welfare. But suppose that the tariff can be used as the lever with which to bargain for a reduction in the tariff of the trading partner. In this case, the net result, if and when *both* tariffs are removed, could be to increase the country's welfare above what it would have been in the absence of the tariff. This possibility also helps to explain the well-known puzzle of the free traders as to why countries insist on reciprocity in tariff cuts if theory can demonstrate that a unilateral cut would be beneficial.⁹

It is interesting to note that Graham was well aware of this argument:

Protection is at times used as a weapon to punish or prevent foreign discrimination, to force a more liberal trade policy on other nations, to serve as a retaliatory measure against restrictions which, though not discriminatory between foreign nations, are regarded as undue, and to establish a favorable bargaining position for prospective international commercial negotiations. The certain immediate loss to the levying country is not always recognized, but where it is, retaliatory duties are levied in the expectation that a still greater loss will be imposed on the foreign country against which they are specially aimed and that such country will thereby be persuaded to take a tractable attitude . . . , when used for the purposes discussed in this paragraph, the object of the protective measures is not to restrict but to enlarge the freedom of commercial intercourse; it

⁹ For an extended discussion of the reasons which can be adduced to explain the demand for reciprocity in tariff negotiations, see Johnson (1965b) and Bhagwati (1967c).

seeks to restrain restraints. The protection is then justified not on its own account but solely as a means of securing freer trade (pp. 85-86).

(4) Finally, if the imposition of quotas will induce an inflow of private investment from foreign firms interested in "sales maximization," for example, then it is conceivable that the loss imposed by protection is outweighed by the advantage gained by the resulting inflow of investment.¹⁰ From the viewpoint of national advantage, therefore, this involves again the case for first-best tariffs. Remember, however, that if the same inflow of investment could be attracted by subsidizing domestic production instead, then (as I shall soon argue) this would be a superior policy since it would permit the same advantage from the resulting inflow of investment while reducing the cost of protection by permitting the consumption of the protected items to occur at international prices.

2. ARGUMENTS FOR TRADE SUBSIDIES AS FIRST-BEST POLICY

While arguments in support of tariffs as first-best policy are sufficiently understood, as also those to be shortly developed here in support of domestic subsidy-cum-tax policies as first-best policies, this is *not* the case with export subsidies. Catch hold of any trade theorist and he is certain to rule them out as first-best policies. This discriminatory neglect by analysts is shared by international institutions, such as the GATT, which asymmetrically disapprove of export subsidies more than of tariffs and import restrictions. As a result export subsidization often takes devious forms permitting the customary reconciliation of public morality with private behavior.

Undoubtedly there are many specious arguments in support of export subsidies. Thus, for example, take the following untenable arguments, which are much too common.

(1) It is often argued that export subsidies are good because they increase the volume of world trade. It is not unusual to come across exhortations to "maximize world trade." However, this is clearly a nonsense proposition, though even distinguished economists like Ragnar Frisch (1948) have sometimes fallen unawares into the trap.

¹⁰ Marginal inflow of such investment may be of net benefit, even if there are no externalities, no governmental siphoning-off of profits, and no monopoly power in trade, despite capital earning the value of its marginal product if the marginal return to capital is below the average and there is already some investment from abroad in the country (or if we are dealing with discrete inflows of investment).

There is an optimum degree of trade; one can trade *both* too much and too little.

(2) A superficially more attractive version in which this doctrine turns up, however, is that "it is desirable that a country in balance of payments difficulties should correct its deficit by increasing trade and making fuller use of international specialization, whereas a country resorting to import controls [and import tariffs] would reduce international specialization" (Streeten, 1963, p. 15). Firstly, the optimal method of correcting the balance of payments would be to change the exchange rate and to maintain a unified exchange rate (assuming, of course, that none of the qualifications being considered here are present). Secondly, even if second-best methods are to be used, it does not follow by any obvious means that export subsidization will be superior as a sub-optimal policy to tariff or import restrictions.¹¹

(3) It is also sometimes argued that domestic entrepreneurs have less information about foreign markets than about domestic markets and hence export subsidization is called for in order to offset this asymmetry. But this is also a fallacious argument, because the acquisition of information expends real resources, and foreign sales, in principle, should yield enough returns to cover these costs if they are to be privately *and* socially desirable. Unless, therefore, some externality argument is produced, there is no case for an export subsidy merely because of the asymmetry between available information on domestic and foreign markets.

On the other hand, there *are* valid arguments which can make the adoption of export subsidization part of a first-best policy. I shall now

¹¹ Export subsidies can actually be shown to be inferior if the export subsidies are sufficiently large to reverse the pattern of trade in a two-good model (see for example Bhagwati, 1967b): such export subsidization will be inferior to autarky which, in turn, will be inferior to trade at any level if it is restricted by tariffs or as to quantity.

Of course, the ultimate second-best choice between export subsidies and tariffs and quantitative restrictions would also involve judgments with respect to questions such as, for example, the possibility of retaliation and the revenue problems associated with either policy. Thus, for instance, comparing export subsidies with quantitative restrictions, Streeten (1963, p. 16) has argued that "Export subsidies will tend to be less inflationary than import restrictions. Part of the increase in export earnings will have been matched by extra domestic taxation, thus reducing demand inflation from the improvement in the balance of payments."

But this particular argument is false because, if effective taxation has (automatically) increased in the case of export subsidies, there is no reason why it could not be stepped up (by explicit policy) in the case of import restrictions.

set up three arguments in support of this contention, though not all of them are of equal empirical relevance.

(1) The *private* evaluation of risk with respect to sales abroad may be in excess of the social evaluation, which may be more realistic. The private entrepreneur may, for example, exaggerate the risk of losses from a quota being imposed on his sales in a foreign market, whereas the government may have recourse to relief via representation at GATT and/or intergovernmental negotiations, which is underestimated by the private entrepreneurs in question. In such a case, it is *not* enough merely to provide *information* to private entrepreneurs; the entrepreneurs may continue to have views concerning the risks of (a) insufficient action by the domestic government and (b) inadequate response by the foreign government, either or both of which may diverge from the official views.

(2) It is necessary to invest in cultivating a market and these costs can be significant in international markets for manufactures. Any firm breaking into a foreign market may thus find that, if *other* firms can exploit a market opened up by its own expenditures, the private returns to this activity are less than the actual social returns.¹² This element of *externality* would then justify the grant of an appropriate export subsidy to this (exportable) industry. Note that this argument for an export subsidy depends on (a) an asymmetry of externalities between external and internal markets and (b) the assumption that the firms cannot sell any amount, at a given price, internationally; but neither of these assumptions can be ruled out *a priori*. In fact, the notion of an "infant export industry" makes very good sense if construed in this manner, and thus justifies, where the above argument is valid, the grant of export subsidies.

(3) Externalities of other kinds also can be quite important in practice and may result in the case for an optimum export subsidy. Thus, for example, it is well known to aid recipients that a superior "export performance" is taken nowadays to be a sign of successful economic planning and is productive of smoother, perhaps larger aid flows. Hence, even an otherwise sub-optimal policy of export subsi-

¹² Thus, an Indian firm undertaking initial losses abroad to sell its products in the hope of building up later sales may fear that its Indian rivals will exploit this groundwork. Once the reputation of "Indian supplies" has been established, there is nothing to prevent competitors from cutting into its future sales in this foreign market.

dization, provided it results in a larger inflow of resources on aid terms and with net positive marginal productivity to the economy, may well be optimal.¹³ Just as an economy will trade too much under a unified rate when there is monopoly power in trade, the link with aid could mean that a country is trading too little under a unified rate.

3. ARGUMENTS FOR DOMESTIC TAX-CUM-SUBSIDIES AS FIRST-BEST POLICY

I now come to the arguments which lead to the case for *domestic* as distinct from foreign-trade instruments as first-best policy. In essence, these arguments invoke two types of phenomena:

(1) The domestic prices may not measure social opportunity costs (as indicated by the marginal rate of transformation in efficient domestic production) and thus involve a breakdown of the equality between the marginal rates of transformation in production with both the domestic marginal rate of substitution in consumption and the marginal rate of transformation through foreign trade, *if a unified exchange rate is adopted.*

(2) Further, the domestic prices may not measure the social rate of substitution in consumption, in which case again a unified exchange rate will result in a nonfulfillment of the first-order conditions for utility maximization because the marginal rate of substitution in consumption will fail to be equated with the two rates of transformation through trade and domestic production.

The former phenomenon may arise owing to (a) externalities in production, (b) monopoly in product markets, or (c) imperfections in the factor market. The latter phenomenon would arise if there were externalities in consumption. In each case, however, it is readily shown that the suitable first-best policy will involve a *domestic* tax-cum-subsidy, aimed at making effective market prices reflect true opportunity costs or ratio of social marginal utilities. Intervention in the form of commercial policy will be sub-optimal, although if appropriately chosen it may result in welfare levels higher than under a unified exchange rate. Thus, for example, if the factor prices are different

¹³ Such an externality obtains, even more obviously, with respect to private foreign investment. Acceptance of such investment, even when its net social marginal productivity is not positive, may turn out to be productive of more Western aid and hence be optimal overall. Or take the case of untied aid: it may be wise to spend it sub-optimally at the source of origin, for if it is not spent there this may cut into the future aid flow itself. And so on.

between sectors and represent a genuine distortion, it will be optimal to subsidize the use of the factor by the sector which otherwise has to pay a higher price, thereby eliminating the distortion directly. Similarly, if there is externality such that the market price understates the social-opportunity cost of production, then a tax-cum-subsidy on production which offsets this degree of imperfection will be optimal. In each case, the optimal policy will have to be applied at the point at which the distortion arises; in each case, the policy of a unified exchange rate will be inefficient.

(a) *Tax-cum-Subsidies on Production*

(1) In the case of production externalities, where the output of a product affects the output of another without the market enabling the producer of the former to appropriate the imputed value of this productivity to himself, the private return to producing this item will fall below its social value. It will be necessary, therefore, to introduce an appropriate tax-cum-subsidy measure on production to correct for this distortion. Meade's classic example of the honey producers profiting without payment from the apple blossoms growing next to the bees is an apt illustration. Apples will have to be subsidized so as to make the private returns to apple growers equal to the social returns. In Figure 3, at the given international prices FP , production will be (with nontangency) at P^o , consumption at C^o , and welfare at U^o . An appropriate production tax-cum-subsidy, given the foreign price ratio which is fixed throughout the analysis, will take the economy to production at P^* , to consumption at C^* , and to welfare, at a maximum, at U^* . On the other hand, an export subsidy, which is a sub-optimal policy, is shown at a level that leads to production at P^* , to consumption at C^{ES} , and to utility level at U^{ES} .¹⁴

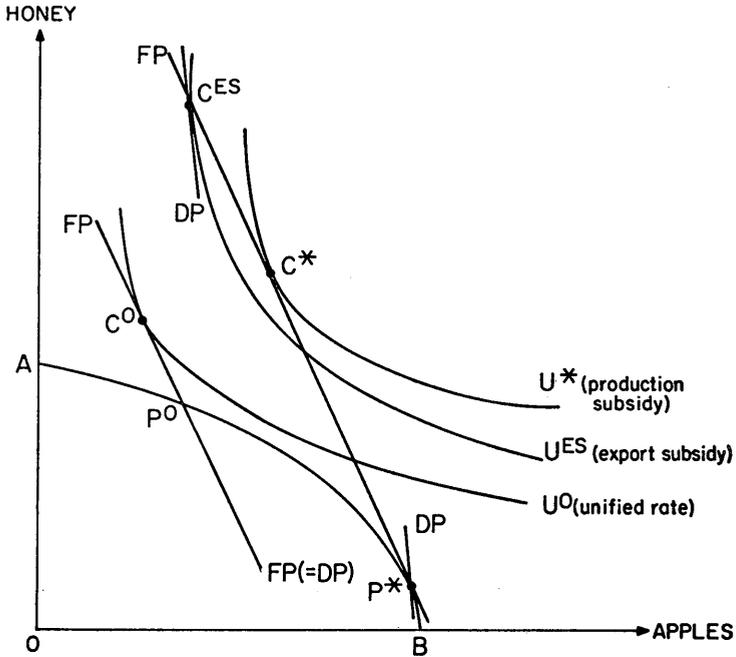
¹⁴ Formally, the problem is easily stated. Let the linear homogeneous production functions be

$$\begin{aligned} X &= X(K_x, L_x), \\ Y &= Y(K_y, L_y, X). \end{aligned}$$

Then, for a competitive economy, it can be shown that (1) the economy will operate on the production-possibility curve, that is, with technical efficiency, *but* (2) the price ratio between commodities will diverge from the slope of the production-possibilities curve. The production-possibility set further may cease to be convex, a possibility that is abstracted from in the text.

The reader may note that Kemp (1964, p. 128) has shown why, in the present case, the economy will continue to operate on the efficient production-possibility curve, at points such as P^o and P^* , rather than inefficiently within and off the production-possibility curve.

Figure 3
 Externality in Production and Optimality of a
 Policy of a Tax-cum-Subsidy on Production



AB is the production-possibility curve between apples and honey. The externality in production, such that the market does not remunerate apple growers for the increment in honey output, results in the nontangency between the commodity price ratio and the production-possibility curve at P^0 . With given foreign prices (FP) for a small country, a unified rate policy will take welfare level to U^0 . A suitable policy of a tax-cum-subsidy on production, in favor of apples, will however lead to optimality, with production at P^* , consumption at C^* , and welfare at U^* : production will be in response to the domestic price ratio for producers that includes the tax-cum-subsidy (DP). An export-subsidy policy which takes production to P^* as well, however, will be sub-optimal as it will distort consumption to C^{ES} (at prices including export subsidies DP) and thus reduce welfare to U^{ES} .

(2) Where there is monopoly in the domestic sale of output the results are similar. Monopoly will result in a similar divergence of the commodity prices from the social opportunity costs, thus showing up in a domestic distortion. In such a case, the first-best remedial policy is clearly to use tax-cum-subsidy measures to guide production away to a mix where the marginal rate of transformation in domestic production equals the foreign prices at an exchange rate which is other-

wise unified. Under unified-exchange-rate policies, the economy will be in a sub-optimal position and may even be worse off than under autarky. Again, intervention through trade tariffs or subsidies will be sub-optimal; but, at appropriate levels, even such measures may enable an improvement over the welfare level reached under a unified exchange rate.¹⁵

(b) *Tax-cum-Subsidies on Factor Use*

Where, however, there are imperfections in factor markets, the optimal policy will be the adoption of tax-cum-subsidy measures with respect to factor use rather than domestic production.

Three major types of imperfections in factor markets need to be distinguished *in principle*, though clearly not all of them are equally important:

(i) There may be a distorting wage differential between activities for the same factor, as alleged for labor between manufacturing and agriculture.

(ii) The wages may be equal between activities *but* may diverge from value of marginal product in an activity, as alleged in agriculture with farming by peasant families.

(iii) The wages may be equal between activities *but* may diverge from the shadow, or optimal, wage for the economy, as is alleged sometimes for the so-called "surplus labor" economies whose optimal wage is supposed to be zero and below the actual wage.

Of these three possible imperfections, only the first has been discussed at length in the literature, though it may be the least consequential in reality. I shall discuss each of the imperfections now, in turn.

(1) The argument related to wage differentials dates back to Manoilescu and was revived recently by Hagen in reference to the observed wage differentials between the urban and the rural sector in several countries. It is pertinent, before analysis is built upon their distorting effects, to consider the circumstances when they may *not* represent a genuine distortion. For instance, they may reflect (a) a utility preference between occupations on the part of the wage-earners,

¹⁵ However, since tariff protection itself may accentuate the domestic monopoly, while free trade with a unified exchange rate may eliminate it altogether, it is possible to argue even in this case that the first-best policy in this eventuality could again be a unified exchange rate.

or (b) a rent (on scarce skills), or (c) a return on investment in human capital (by training), or (d) a return on investment in the cost of movement (from the rural to the urban sector). There is a distortion, however, where the differential is attributable to (e) trade-union intervention, or (f) grounds of prestige based on humanitarianism ("I must pay my man a decent wage") that fix wages at varying levels in different sectors (see Bhagwati and Ramaswami, 1963).

Three other types of explanations may also be discussed: (g) The differential may occur in manufacture, because this is the advancing sector and growing activities inevitably have to pay higher wages to draw labor away from other industries. While this "dynamic" argument appears to provide support for the distorting character of the differential, there are difficulties connected with it. For instance, the fact that a differential has to be maintained to draw labor away may very well be due to the cost of movement. (h) A more substantive argument is that the rural sector affords employment to non-adult members of the family, whereas in the urban sector the adult alone gets employment (owing to institutional reasons, such as factory acts). Hence, to migrate, an adult would need to be compensated for the loss of employment by the non-adult members of his family. If this is the case, there is certainly a market imperfection (assuming that individual preferences rather than collective preferences, expressed in legislation, are relevant) and hence distortion.¹⁶ (i) Finally, even if the differential can be entirely attributed to the cost of movement between the sectors, if the capital market for financing such movement is imperfect and makes such movement more expensive than investment in other activities, as may well be the case, there is still an element of the wage differential which will be "distorting" from the welfare point of view.

Assuming, therefore, that the differential is distorting and, for simplicity, that it can be treated as constant throughout the analysis with the wage rate in one sector a constant multiple of the wage in the other sector, it can be readily shown that (1) the economy will *not* operate on the efficient transformation frontier (for the two sectors will have, in equilibrium, unequal rates of substitution between factors); (2) the commodity price ratio will *not* equal the marginal rate of transformation in domestic production; and (3) the feasible production-possi-

¹⁶ This "distortion," unlike the others, involves a contraction of the labor force as labor moves from one sector to another. Hence, the following analysis does not apply, and a fresh solution incorporating a changing labor supply is called for.

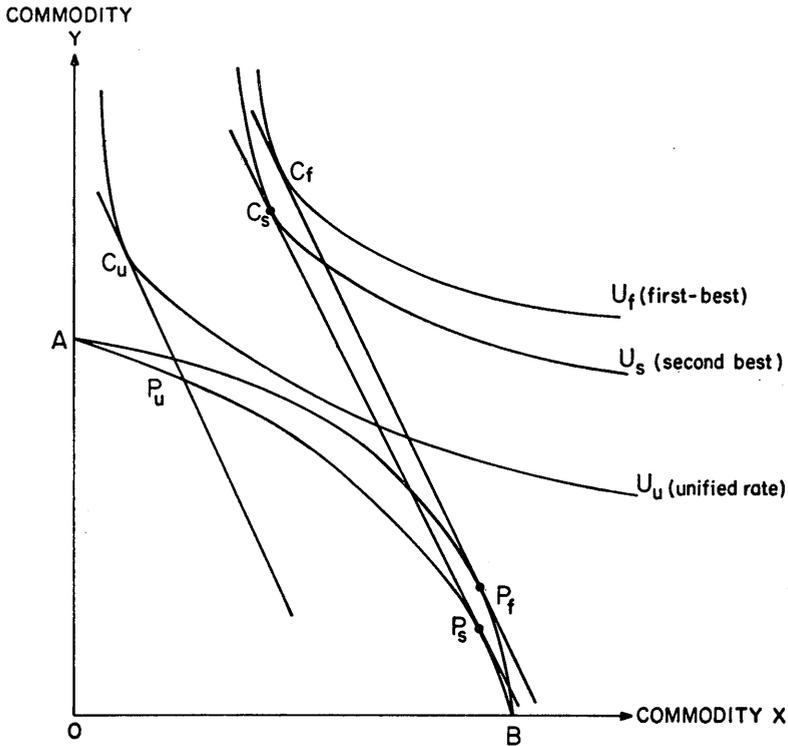
bility set may even cease to be convex. It follows, equally readily, that a unified exchange rate will be a sub-optimal policy and that the first-best optimal policy will be a tax-cum-subsidy policy on factor use that offsets the differential. A little less obviously, if such a first-best policy is ruled out, the second-best policy would be a tax-cum-subsidy on production. Intervention via trade policy would thus be inferior to both these first-best and second-best policies; but, if appropriately set, trade policy may be superior to a unified exchange rate.

Thus, in Figure 4, it is shown that the introduction of a wage differential against commodity X will lead to the decline of welfare from U_f to U_w if a unified exchange rate is being adopted. On the other hand, an appropriate tax-cum-subsidy policy with respect to factor use will offset this distortion and lead the economy back to its *maximal* welfare potential, given the resources and know-how. The *second-best* policy will be an appropriate tax-cum-subsidy on production which, while it cannot eliminate the shrinking-in of the feasible production set, will offset the welfare-reducing nontangency; thus the economy will operate at P_s , C_s , and U_s ($< U_f$ but $> U_w$). In this instance, an export-subsidy policy may improve welfare over the level reached under a unified exchange rate; but it will be inferior to the second-best policy.

Note further that, if there is a parallel and equal differential in the *other* factor (in a two-factor world), then the economy will operate on the most efficient production-possibility curve—for, in this case, both activities will have identical factor price *ratios* and hence the rates of substitution between the factors in both activities will be equalized. However, the distortion in the shape of the nontangency will be accentuated. At the other extreme, one could imagine a *reverse* differential—the wage of one factor higher in one sector and of the other factor higher in the other sector—which tended to offset the nontangency effect while accentuating the shrinking-in of the feasible production-possibility set. The latter possibility might even be realistic if the higher interest rates observed in rural areas are not to be attributed entirely to risk—in which case, protection, either through commercial policy or through tax-cum-subsidies on production, would reduce welfare further rather than improve it over that reached under a unified exchange rate, insofar as the nontangency effect is *fully* offset in the relevant range.

(2) The analysis of the alternative possibility, in which the wage is identical between sectors but exceeds marginal product in the

Figure 4
Distorting Wage Differentials and Alternative Policies



For the case where there is a distorting wage differential operating against commodity X , the diagram illustrates how (1) a factor-subsidy policy which "eliminates" the differential will be the first-best policy, taking welfare level to U_f , and enabling production to be at the efficient production-possibility curve at P_f , (2) a unified rate will result in production P_u along a shrunk-in production-possibility curve, with nontangency with the commodity price ratio $P_u C_u$, and welfare at U_u , and (3) a policy of tax-cum-subsidy on production can, as a second-best solution, take production to P_s on the shrunk-in production-possibility curve and welfare to U_s .

peasant-family sector, is familiar from Arthur Lewis' writings (1959; see also Bhagwati and Ramaswami, 1963). This leads again to inefficient production in two senses: nontangency and shrinking-in of the feasible production-possibility locus. Again, a suitable tax-cum-subsidy on factor use, which equates the marginal products in the different sectors for the same factor, will be the first-best policy.

(3) However, the case where the wage is identical between sectors *but* differs from the shadow or optimal wage is conceptually and

point B , there must be unemployment of factor K . A reduced factor endowment ratio K'_A/L'_A with specialization on X would be a possible point of equilibrium under autarky; however, if demand conditions are not compatible with it, a possible point of equilibrium could be at incomplete specialization with endowment at K_A/L_A , factor price ratio at OS , and commodity price ratio at OU .

Then, under a unified exchange rate, with foreign prices given at OE , a possible position of equilibrium would be at endowment ratio K_u/L_u , complete specialization on producing Y , marginal product in terms of Y given at F , factor price ratio at OG , and marginal product in terms of X at the desired level defined by B through the terms of trade being sufficiently in favor of Y at OE . However, the situation registers a still further decline in employment of K , the factor endowment ratio in employment having gone down from K_A/L_A to K_u/L_u . Thus, the situation under a unified rate shows a reduced level of employment for factor K , with factor L earning the same marginal product as under autarky in terms of X , so that the net result could be deterioration in social welfare. (Note that the result demonstrated is a mere possibility, and that one could equally well envisage the possibility of there being equilibrium established under a unified rate, in this case, at a *higher* level of K/L employment ratio than K_A/L_A).

Further, in this specific eventuality, an import tariff (or preferably still a domestic production tax-cum-subsidy in favor of importables) will lower the effective relative commodity price ratio domestically from OE to OU and restore the economy to the factor endowment ratio K_A/L_A and lead to a higher level of welfare than under the unified exchange rate.

4. FIRST-BEST ARGUMENT FOR TAX-CUM-SUBSIDY WITH RESPECT TO CONSUMPTION

If, however, externality obtains with respect to consumption, the optimal form of policy intervention would be tax-cum-subsidies on consumption, for similar reasons as with domestic production tax-cum-subsidies in the case of certain forms of externalities in domestic production, whereas a unified-exchange-rate policy would lead to a sub-optimal situation. Again, any other form of intervention, such as tariffs, trade subsidies, and tax-cum-subsidies on production would be sub-optimal and, hence, even if it manages to improve welfare above

the level reached under a unified-exchange-rate policy, would still be inferior to a suitable tax-cum-subsidy on consumption.

While formally this argument is symmetrical with the argument for production externalities, I am not impressed with its empirical significance from the point of view of official policy, even though its philosophical importance is quite considerable. I would rather conclude that, in view of this, together with the interdependence of tastes and the current availability of outputs, it makes more sense perhaps for the economist to stop worrying about utility maximization and to concern himself instead with technical efficiency, where he is on much surer and common ground with other analysts. But I admit that there is scope for endless disagreement on this issue.

B. MODIFIED OBJECTIVE FUNCTIONS

I now come to the range of arguments which depend *essentially* upon departures from the traditional objective function *either* within a static framework *or* by introducing dynamic considerations involving the notion of utility maximization over time. I shall consider the latter set of arguments first, as they seem to me to be of somewhat greater analytical and empirical significance.

I. ARGUMENTS BASED ON DYNAMIC CONSIDERATIONS

There are broadly four main varieties of argument in this area: (1) those that involve the effect of current policies on the rate of saving and hence on future income via the rate of growth; (2) those relating to investment, both its composition and the inducement to invest; (3) those relating clearly to familiar externalities such as "learning by doing" and investment in the training of skills in infant industries; and (4) those that involve resort to notions that diversification should be preferred to specialization according to what Graham described as the principle of "insurance."

(a) *Savings Arguments*

There are basically two arguments which may be made in order to justify a departure from a unified exchange rate on grounds that the average savings ratio may increase sufficiently to lead to a higher rate of growth.

(1) One argument that is quite traditional builds on the premise that the average savings ratio is dependent on income distribution;

with fiscal policy subject to serious limitations. Thus, a policy of a unified exchange rate, as opposed to a policy that shifts production to a different mix, may lead to income distribution in favor of those who save less, and hence may result in a lower rate of growth of real income. In this case, there is a conflict between maximizing current income and maximizing the rate of growth; and the optimal policy, if a utility function over time is maximized, could well call for a departure from a unified exchange rate. Note, however, that, in this case, a policy of a tax-cum-subsidy on production would be a *superior* policy to a tariff or trade-subsidy policy because it would achieve the desired shift in production and, hence, in income distribution without inflicting a consumption loss through forcing consumers to consume at distorted prices (different from international prices).

(2) An alternative argument links the capacity to raise savings through fiscal policy to the *pattern* of consumption. A unified exchange rate may lead to the importation and conspicuous consumption of luxury goods which would undermine the capacity to tax. Austerity may be difficult to impose in the presence of conspicuous consumption. Note, however, that this argument strictly requires that the *availability*, rather than importation, of these luxury goods be eliminated or reduced below the levels reached under a unified rate. If importation alone were made more difficult, the incentive to produce or extend the production of these luxury goods would correspondingly increase. Hence, the present argument, where relevant, leads to the case for schemes involving tax-cum-subsidies on consumption and *not* to tariffs as the suitable policy.

(b) Investment Arguments

Then arguments can be developed which call for a suitable departure from unified exchange rate by relating the choice of current policies to the problem of raising the rate of investment.

(1) One argument, familiar from the writings of Hirschman and Myrdal (1955), is that the surest way to raise the rate of investment is to cut down imports of hitherto imported items. Since the potential domestic entrepreneurs will feel sure in such a case of having a domestic market for their output, they will invest. To close the implicit model, one would have to assume that the necessary saving is forthcoming, for example, through fiscal policy. The argument has strong appeal: it seems pointless to worry about the efficiency of investment

unless investment is forthcoming—as the French say, you cannot make ragout unless you have a rabbit. I myself remain skeptical of the wisdom of this prescription, however, even though I agree that one cannot rule it out altogether. It is difficult to see why economic policy cannot be designed to create the necessary incentives to invest while maintaining the framework of comparative advantage. I am afraid that prescriptions to the contrary seem to be based on a willingness to reconcile oneself to inefficient policies rather than a necessity to do so.

(2) Another argument, of some empirical importance, emerges from “structural” models. If one assumes that the economy faces, through all periods, given international prices (which, however, may change between periods), that the rate of saving is capable of being varied freely by fiscal policy, and that investment always matches available savings, then a policy of a unified exchange rate, combined with fiscal policy to peg the savings rate at an optimal rate, will be sufficient to put the economy on an optimal time path, which in fact will be unique and independent of the terminal configuration of availability in a model with a finite time horizon.¹⁷ But suppose, however, that the economy is presented with finite export elasticities at each point of time. In this case, while the State can work out the optimal time path of output on the basis of perfect foresight and there will be shadow prices associated with the solution, there is no reason to think that the market would necessarily operate in such a way as to generate these prices *on its own*. Hence, a suitable policy of a tax-cum-subsidy on production is called for, in order to steer the economy in the direction indicated by the time path. It would be wrong to consider that mere dissemination of the information on shadow prices would be adequate; there is no reason why they should be taken seriously unless they are made effective by actual intervention.

Take the simple example of a Feldman-(Domar, 1957, p. 223)-Mahalanobis (1955) type of model where, at the margin, there is a unit elasticity of demand for exports abroad and, hence, the decision to raise the future rate of investment may require a shift in the allocation of resources towards the capital-goods sector. In this case, if private entrepreneurs underinvest in the capital-goods sector because they do not anticipate correctly the implications of the governmental

¹⁷ Bent Hansen, in his de Vries lectures (1966), has developed this argument with great elegance.

decision to raise investment in the future (in conjunction with the stated assumption with respect to trade possibilities), then the investment rate in the future will be jeopardized. In order to correct this, it may be necessary to adopt a tax-cum-subsidy policy which gives incentive to produce capital goods and to move away from a unified-exchange-rate policy. Note that this argument for departure from a unified exchange rate depends on the divergence in views concerning future demand, arising out of a model which makes optimality conditional upon being able to forecast this well enough. The State is assumed to do the job better, partly because it is considered to be in a position to work out the structural implications of its decision to raise the rate of saving, whereas private entrepreneurs are more likely to have their views as to the future conditioned by the preceding past and thus to miss the significance of impending transformations in the economy which optimality requires. Again, as with all these arguments, the present case for a departure from a unified exchange rate merely outlines a possibility; the probability of such a possibility in reality is a different issue.

(c) *Externality Arguments*

I now come to the externality arguments, mostly classical, which are the backbone of the case for "infant-industry" protection. Two kinds of arguments need to be distinguished in this area: (1) those which depend on "learning by doing," a notion which is familiar to us since Arrow's seminal work (1962); and (2) those which depend on what I like to describe as "learning by someone else's doing." Arguments of the latter variety are more current in the literature, and I shall develop them first.

There are two major varieties of arguments in this category. First, it is contended that the pioneering entrant into an industry will have to train its labor force but that *other* firms, entering later, could attract this labor force away so that the return to this activity or investment by the firm in training will be imputed to the labor force instead of accruing to the firm itself. Owing to this externality, which is likely to be associated with infant industries (but will be mitigated insofar as long-term contracts can be signed with labor or, alternatively, labor can be underpaid or even explicitly charged for the training it receives, as my colleague Gary Becker has emphasized), a policy of subsidizing the training of labor will be desirable to stimulate entry

into the industry. Note again that a domestic production-tax-cum-subsidy policy will be inferior and a tariff policy still worse.

Second, it has been argued by Kemp (1960) that the fact that the acquisition of knowledge by a firm requires investment by it, and that this knowledge cannot be successfully held by the firm so as to enable it to charge other firms for its use, could keep a pioneering firm from entering an industry even though the activity might be socially desirable. As Johnson has lucidly summarized the argument:

... once knowledge of production technique is acquired, it can be applied by others than those who have assumed the cost of acquiring it; the social benefit at least potentially exceeds the private benefit of investment in learning industrial production techniques, and the social use of the results of such learning may even reduce the private reward for undertaking the investment. Where the social benefits of the learning process exceed the private benefits, the most appropriate governmental policy would be to subsidize the learning process itself, through such techniques as financing or sponsoring pilot enterprises on condition that the experience acquired and techniques developed be made available to all would-be producers (1965a, p. 28).

Applied at the level of the firm, this argument therefore results in the recommendation of a suitable subsidy policy because rival firms can learn by the pioneering firm's doing.

However, even the phenomenon of "learning by doing," as discussed by Arrow, results in a departure of the competitive system from Pareto-optimality and, hence, in a prescription for suitable governmental intervention. Recently, in the first dynamic analysis of the "infant-industry" argument, based on Arrow's notions, Bardhan (1966) has analyzed the time profile of the optimal subsidy to production that would be called for in an industry whose production function was modified to incorporate an Arrow-type learning effect. Bardhan modifies the Arrow assumption, that productivity in the industry is a function of the cumulated gross investment, to the alternative assumption that the productivity changes with respect to cumulated *output*, in a Hicks-neutral sense. With such an effect built into the production function of just one industry in a two-industry model, Bardhan shows how the commodity price ratio will no longer equal the social marginal rate of transformation between the two commodities and, hence, that

there will follow a case for a suitable production tax-cum-subsidy, the time profile of which he investigates.

Note that the optimal policy would shift to an appropriate tax-cum-subsidy policy with respect to investment in the industry, if the learning effect were to operate, as with Arrow, through cumulated gross investment rather than output. In any case, a tariff policy would be inferior, in either case, because it would additionally incur the consumption cost we discussed earlier. Further, from a formal point of view, the result developed by Bardhan in a dynamic setting is similar to the result which follows when the output of one industry is made a function of output in another industry (rather than to the cumulated output in the same industry). In either case, the market fails and intervention follows.

Finally, the argument could be fully generalized and productivity in all industries could be made a function of the cumulated output, or cumulated labor force for example, in one industry. Thus, Graham argued:

If, in any given nation, free trade would produce specialization in a highly restricted group of industries it might have a repressive effect upon progress. If, for example, comparative competence, in a certain nation and at a certain period, lies in agricultural rather than manufacturing pursuits it might well happen, under free trade, that there would be much mechanical talent, and perhaps inventive genius, which would never find an opportunity to express itself. The nation and the world would be the poorer for its suppression. This argument was used by the original sponsors of protection in this country, was greatly developed by Frederick List, and, in certain circumstances, is cogent (1934, p. 65).

Graham did add rather shrewdly that "It is possible, moreover, that national specialization in mechanical pursuits might smother latent genius in botanical or zoölogical activities just as specialization in the latter occupations may lead to a waste of mechanical genius." Clearly, Graham had in mind a generalized Arrow-type model, which (as we have just seen) does lead to the case for appropriate governmental intervention. In Graham's problem, the learning effect in all industries depends on the growth of one type of activity (manufacture) through the employment of labor in that activity, so that the appro-

priate intervention can be shown to be a labor subsidy for labor use in that activity.

Before I conclude the discussion of the externalities which are usually associated with the case for "infant-industry" protection, let me touch on the recent argument of Kaldor (1964) that, if economies of scale obtain in infant industries, subsidization of exports is a superior (second-best) policy to tariff protection, for the latter will restrict markets whereas the former will expand them and permit production at lower unit costs. Quite aside from the fact that Kaldor fails to point out that *domestic*, rather than *trade*, policies would be optimal for infant-industry protection, his argument is invalid as a general proposition. It ignores the fact that export subsidization generally increases the cost of tariff protection still further. This is the case for industries which are not currently competitive with imports, and in which the increasing returns are such that they still permit increasing marginal cost of transformation in production. In such a case export subsidization will be a policy inferior to tariffs and either will be inferior to a suitable domestic policy.

Finally, I might record an interesting argument of Graham's, involving a dynamic externality, which states that the "quality" of the labor force in the future, and hence the level of future total and per capita income, may depend, via the link between current income and birth rates, on the current income distribution and, hence, on the choice between a unified exchange rate and rival policies. It is best to quote him fully on this issue, which involves yet another ground for departure from unified exchange rates:

Comparative competence in a given employment is sometimes due to the presence of a relatively low grade of labor which shows a special bent for the employment in question. A *laissez-faire* policy may result in so great an extension of this employment as, over a period of years or decades, to exert a marked adverse effect on the average quality of the population. The extension of cotton growing in the United States, for instance, was not only originally dependent upon the presence of Negro labor, which we may perhaps not unjustly assume was of lower average quality than the white population, but it also seems to have tended to increase the ratio of the Negro to the white element in our racial structure. . . .

If, in the long run, through adjustment of birth rates to relative

economic opportunity, the quality of a population tends to adapt itself to the demands which the national industry makes upon it, one might go on to an argument for protection for *any* comparatively incompetent industry provided it could be shown that it would set up a demand for, and possibly evoke a supply of, a larger proportion of high-grade workers than the employments it would, as a result of the protective policy, tend partially to displace. [Graham immediately added:] Put thus, the argument becomes rather far-fetched. The case, indeed, is seldom clear enough to permit the degree of assurance on which discriminatory legislative action should alone be taken. . . . History does show, however, some instances in which the artificial encouragement of trades requiring highly skilled workers and technicians seems to have had beneficial effects on the character both of the population and of the industry of the country concerned (1934, pp. 72-74).

Graham's argument must be treated as valid insofar as it implicitly depends on the *externality* that may obtain because the quality of the labor force is conditional on the environmental advantages which accrue *within* the family and insofar as these advantages can be demonstrated to inhere within certain classes of the population more effectively than in others. It would further require an additional constraint on fiscal policy; for, if it were not imposed, it should be possible (via suitable transfers) to redistribute income to the desired pattern. Further, *trade* policy would again be inferior to *domestic* tax-cum-subsidy policies for bringing about the desired distribution of income.

(d) *Diversification and Insurance*

Arguments have traditionally been put forth against the specialization that may develop under a unified-exchange-rate policy, on grounds that, as with the principle of insurance, a country ought to diversify its production as well. Note that diversification of production is also supported on "non-economic" grounds such as defense production, in which case the only sensible economic question that arises relates to the optimal and least-cost way in which such a non-economic objective would be fulfilled. Here, however, the prior question is whether such diversification can be supported by reference to purely economic objectives. Let me quote Graham on this issue:

Dispersion of risk is, of course, a fundamental principle of insur-

ance, and diversification of industry disperses the national risk from vicissitudes peculiar to single industries or groups of industries. The value of insurance depends, of course, upon its cost relative to the risks against which safeguards are feasible. The risks arising from a specialization of the national economic structure are perhaps increasing as the ratio of the value of fixed capital to annual output rises, and the cost of suddenly effecting a considerable alteration in the character of the national production is thereby enhanced. The argument from insurance is probably, therefore, of growing importance (1934, p. 65).

This argument for diversifying production makes sense, however, insofar as it can be argued that private entrepreneurs left to themselves will not secure the necessary dispersion of risk on their own. Once again, therefore, we must appeal to some form of externality. The argument seems to boil down to one discussed earlier, in which the private entrepreneurs will have a different evaluation of the future from the state and the state's evaluation will be more objective. *In principle*, such an externality could work in favor of, or against, increasing the range of production above the level reached under a unified exchange rate. Further, a policy of a tax-cum-subsidy with respect to domestic production will be less expensive than a tariff or trade-subsidy policy in changing the level of diversification to the optimal level, for it will permit consumption to take place at international prices.

2. ARGUMENTS WITHIN THE STATIC FRAMEWORK

I now come to those arguments for departure from a unified exchange rate which accept the static framework but depart from the traditional solution because they involve maximization of a social-welfare function which does not depend exclusively on the current flow of goods and services. In the analysis that follows, however, I shall be dealing with the problems posed by the introduction of such additional social objectives as essentially formal maximization problems, with the traditional social-welfare function, but with additional constraints in the form of the added objectives. Thus, the problems will be formally treated as essentially second-best problems with the objective function unchanged from its traditional formulation. This formal treatment stops short of exploring the possible trade-offs between social utility from the flow of goods and services and social

utility from achieving more of the additional objective; but the analysis could be extended in that fashion, in principle.

The arguments that I propose to consider involve (1) achievement of a certain income distribution; (2) achievement of specific levels of production in certain activities, on grounds such as defense; (3) achievement of specific levels of employment of a factor of production, such as labor, in certain activities, on grounds such as the "creation of national character"; (4) reduction of import dependence or achievement of "self-sufficiency"; (5) reduction of "domestic availability" of items, such as luxury consumer goods, on grounds of social policy; (6) collection of revenue for state expenditure; and (7) constraints placed on efficiency through aid-tying, amounting to the required achievement of a specific form of aid utilization.¹⁸

(a) *Income Distribution*

I have already discussed how, via income distribution, there may arise a conflict between future income and current income, which could call for a departure from unified exchange rates. However, it is possible for the country to be *directly* interested in the actual income distribution that arises thanks to the market, if the fiscal system is incapable of redistributing market-imputed incomes. In this case, rational policy would involve maximizing utility from the currently available flow of goods and services *subject* to certain income distributional constraints being simultaneously satisfied. The second-best solution, in such a case, could involve departure from unified exchange rates. However, in such a case too, tax-cum-subsidies on domestic production would be a superior, and least-cost, way of achieving the desired income-distribution change via shift in production rather than trade-policy measures which would additionally impose a consumption cost.¹⁹

A similar argument involving possible departure from unified exchange rates arises in practice also because the objective of income distribution takes the form of different regions *within* a country seeking market-imputed incomes which do not fall below certain absolute

¹⁸ It is possible to quibble whether some of these constraints are "political" or "economic." The question would be semantic were it not for the fact that frequently economists are inclined to treat the "political" constraints as "irrational."

¹⁹ It might, of course, be questioned whether a government which cannot tax in order to redistribute income will be able to undertake tax-cum-subsidy policies in order to bring about a different market-imputed distribution of income.

or relative shares. This type of constraint can be even independent of the possibility of income redistribution by fiscal means: the objective of income distribution may, and frequently does, refer to earned incomes. Anyone who has had to advise on economic policy in countries characterized by regional differences of political significance will realize how important a constraint this is in practice.

(b) Specific Levels of Production as Non-Economic Objective

If, for reasons such as defense, production in specific activities is required to be raised *above* the level reached under the optimal unified-exchange-rate policy, then the problem reduces formally to that of second-best maximization subject to the added constraint that production in these activities cannot fall below the stated levels.

Corden (1957) has then shown that a policy of a tax-cum-subsidy on production will be a superior way of obtaining the requisite shift in production than tariff (or export-subsidy) policy, for the now-familiar reason that it will avoid any consumption cost in the process by permitting consumption to occur at international prices.

But a policy of a tax-cum-subsidy on production is not merely superior to a tariff (or export-subsidy) policy; it is also the *optimal* policy under the stated non-economic objective. An adaptation of the diagram used by Corden to demonstrate the superiority of the policy of a tax-cum-subsidy production over tariff policy will serve to demonstrate also its superiority over a factor-subsidy policy by which the use of one (as against both at identical rates, which would be equivalent to a tax-cum-subsidy on production) factor alone may be subsidized in the activity whose expansion to the desired level is sought. The diagram is drawn to illustrate the case in which the production of the importable good is to be raised above the free-trade level but could readily be adapted to the case in which the production of the exportable good instead is to be so raised. Instead of the tariff, we should then be discussing a trade-subsidy policy but the optimal policy would still be a tax-cum-subsidy on production. With production of Y in Figure 6 to be raised at least to P^* , the tax-cum-subsidy on production will be superior to the tariff policy ($U_{ps} > U_t$) whereas a factor-subsidy policy, which leads to a shrinking-in of the production-possibility curve and to a nontangency of the commodity-price line with this shrunken feasible production set, will lead to production at P_{fs} , consumption at C_{fs} , and a still lower level of welfare. Thus, the tax-cum-

to autarky as a way of reaching the required production bundle in a least-cost manner. It turns out that, in the case in which the desired production bundle can be reached with a trade tariff (rather than a trade subsidy), a (sub-optimal) trade-tariff policy will *necessarily* be superior to a (sub-optimal) autarkic policy, thus giving the strong ranking of the following three policies: (1) tax-cum-subsidy on domestic production; (2) trade tariff; and (3) autarky. On the other hand, no such strong ranking between the latter two sub-optimal policies is possible when the desired production bundle can be reached only under a trade *subsidy*.

For the case in which there is monopoly power in trade as well, and the required production level lies below the optimum tariff level of production while lying above the level reached under the unified-exchange-rate policy, Corden has further shown that the tariff will be a superior policy—which is readily seen once it is realized that tariffs will improve welfare as they are increased to the optimum tariff level.²⁰ For the case of variable terms of trade, therefore, the optimal policy will, in general, be a combination of tariffs and tax-cum-subsidies on production.

Finally, Johnson (1960) has shown that, if the analysis admits multiple importable commodities, and the objective is to achieve a specified increase in the aggregate value of production of importables (at given terms of trade) *above* the level reached under a unified exchange rate, the tariff structure will in general involve *differentiated* rates.

(c) *Specified Levels of Employment in Certain Activities as Non-Economic Objective*

Graham correctly observed that among the reasons cited for protection was the desire to raise *employment of labor* in certain activities above the level reached under unified exchange rates. He noted that the protection of agriculture was cited as necessary on the ground that “the farmer is the ‘backbone’ of the nation,” wryly commenting at the same time that “the assumption that rural activities are superior to those of the city as creators of character cannot be said to be proven.”

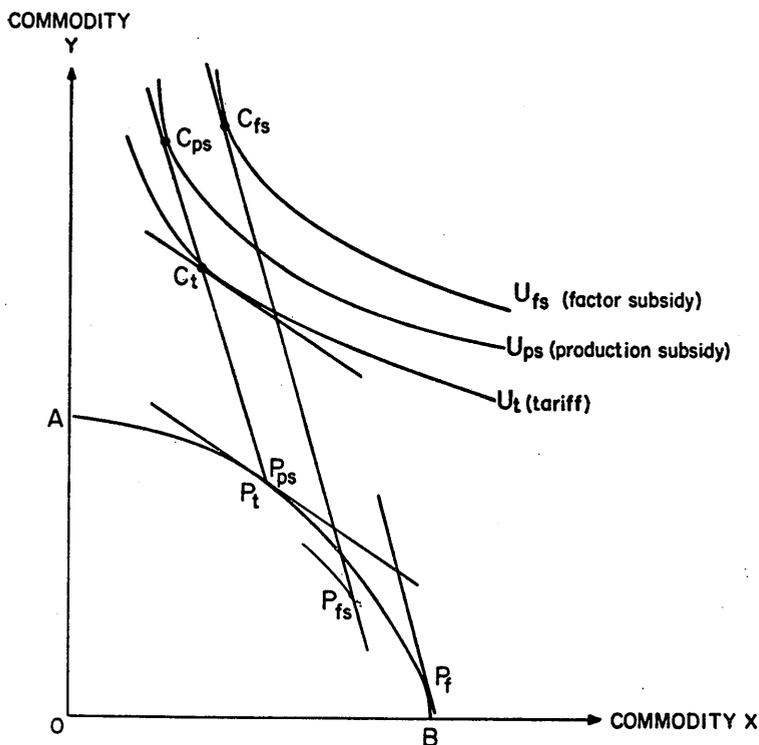
Where the objective thus defined is to prevent *employment* levels

²⁰ This last proposition has recently been stated formally, amplified, and shown to require the exclusion of inferior goods, by Bhagwati and Kemp (1967).

of a factor in certain activities from falling below desired magnitudes, rather than the achievement of specific levels of production in these activities, it has been shown by Bhagwati and Srinivasan (1967) that the optimal policy is to subsidize directly the use of that factor in the activity where its employment otherwise would fall below the required level.

In Figure 7, this result is illustrated. Assume that the employment

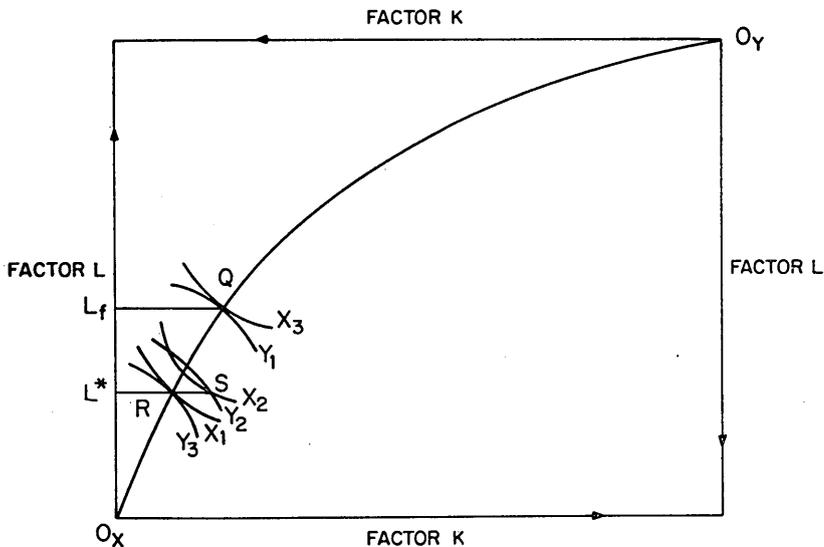
Figure 7
Non-Economic Objective Relating to Employment
in a Sector and Optimal Policy Intervention



For the case where the employment of factor L in activity Y must not be allowed to fall below pre-specified level L^* , and this is a binding constraint, the factor-subsidy policy takes production to P_{fs} , consumption to C_{fs} and welfare to U_{fs} ; a tax-cum-subsidy on production will take production to P_{ps} , consumption to C_{ps} and reduce welfare to U_{ps} ; and a tariff policy will add the consumption loss to the level of welfare under a tax-cum-subsidy on production and reduce welfare still further to U_t (while maintaining production at $P_t = P_{ps}$). P_t represents the free trade, or unified rate, level of production at which the employment constraint is not satisfied. Absence of monopoly power in trade is assumed.

of labor in Y can be increased to the required level by shifting production away from the free-trade level at P_f to P_{ps} (or P_t) by a suitable tariff policy or a tax-cum-subsidy on production. This shift is illustrated in the familiar box diagram in Figure 8 by the shift from Q to R , which takes the amount of labor in Y from L_f to the desired level L^* . It should now be obvious that the policy of a tax-cum-subsidy on production will be superior to the tariff policy, as it will avoid the consumption loss associated with tariff intervention. But a still better, and optimal, policy will be a factor-subsidy policy which will subsidize the use of labor in Y (or tax its use in X) and shift equilibrium to S in Figure 8 and to P_{fs} for production, C_{fs} for consumption, and U_{fs} ($U_{ps} > U_t$) for welfare in Figure 7.

Figure 8
Non-Economic Objective Relating to Employment
in a Sector and Optimal Policy Intervention



This Edgeworth box-diagram illustrates the same propositions as Figure 7. With point Q corresponding to the free trade level of production P_f in Figure 7, the level of labor employment in activity Y is at L_f , which falls below the pre-specified minimum of L^* . R is the point on the Edgeworth contract curve which corresponds to the tax-cum-subsidy on production taking production to P_{ps} in Figure 7, and S the point off the contract curve that corresponds to the labor-subsidy policy for employment in Y , that takes production to P_{fs} in Figure 7, both points R and S satisfying the constraint that $L \cong L^*$. Figure 7 illustrates that point S yields higher welfare than point R .

(d) *“Self-sufficiency” or Reduction of Imports as
Non-Economic Objective*

The non-economic objective, on the other hand, may be a reduction in the degree of import dependence and may call for a reduction in the value of imports. For the case in which there is no monopoly power in trade, this objective is identical with the objective of reducing the volume of imports (or exports).

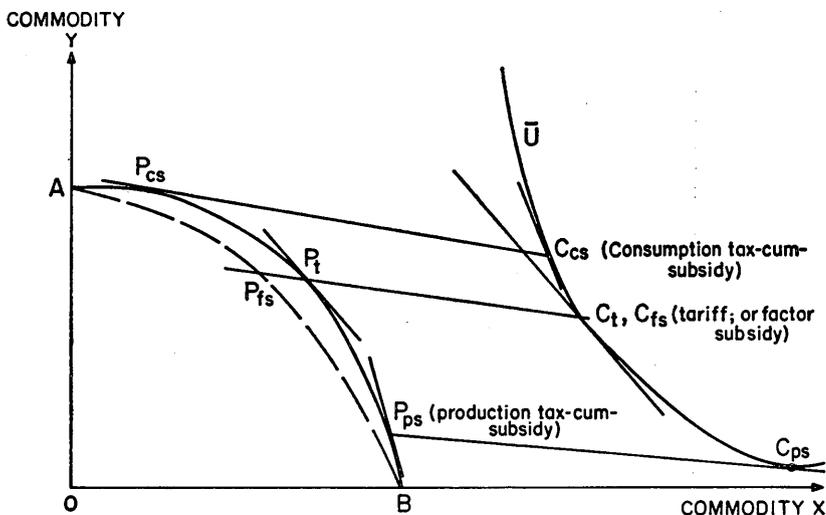
Johnson (1965a) has shown, in this case, that a tariff policy will be superior to a tax-cum-subsidy on production. It can, however, be shown that a tariff policy will be *optimal* in this instance and hence superior to all other policies. This result has been established by Bhagwati and Srinivasan (1967), who have further extended the analysis to the case where the terms of trade are not fixed and have shown that, in this case, the optimal policy will be only a tariff policy.

This conclusion, for the case where the terms of trade are fixed, can be illustrated by adapting Johnson's diagram showing that a tariff policy is superior to a tax-cum-subsidy on production when the objective is self-sufficiency. In Figure 9, it is shown that the same level of utility is reached (and therefore the same loss of welfare incurred) under four alternative policies: a tariff policy that leads to production at P_t and consumption at C_t , a tax-cum-subsidy on production that leads to production at P_{ps} and consumption at C_{ps} , a tax-cum-subsidy on consumption that leads to production at P_{cs} and consumption at C_{cs} , and a tax-cum-subsidy on factors that leads to production at P_{fs} and consumption at C_{fs} . It is readily seen that the level of imports will be least under the tariff policy, though it will not be possible to rank uniquely the other three policies vis-à-vis one another. Since the tariff policy achieves the greatest reduction in imports, given the loss in welfare, it follows that it will achieve a given reduction in the level of imports with the least loss of welfare.

(e) *Reduction in Domestic Availability of Certain
Commodities as Non-Economic Objective*

The non-economic objective may well consist in preventing the domestic availability of certain commodities, whether domestically produced or imported, from exceeding levels defined on social grounds. This is often the case with luxury goods in the social policies of many countries.

Figure 9
 Non-Economic Objective Relating to Self-Sufficiency
 and Optimal Policy Intervention

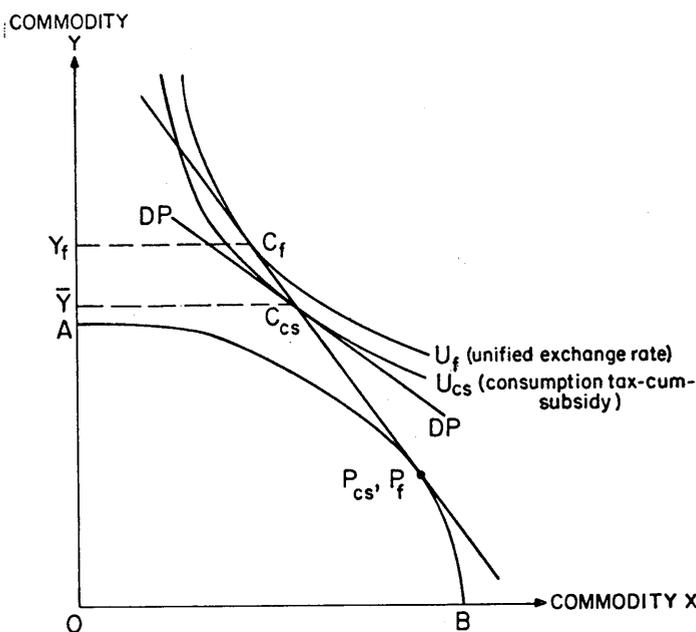


For the case where the non-economic objective is self-sufficiency defined as reduction in the value of imports, this diagram illustrates (for a small country with no monopoly power in trade) that, subject to the same loss of welfare and, hence, relegation to the same social-indifference curve \bar{U} , a suitable tariff policy (with production at P_t and consumption at C_t) will produce the largest reduction in imports, as compared with the tax-cum-subsidy on consumption (with production at P_{cs} and consumption at C_{cs}), the tax-cum-subsidy on production (with production at P_{ps} and consumption at C_{ps}) and the factor-subsidy policy (with production at P_{fs} and consumption at C_{fs}).

In this case, the optimal policy has been shown by Bhagwati and Srinivasan (1967) to be a tax-cum-subsidy on consumption when the terms of trade are fixed, whereas, with variable terms of trade, the optimal policy involves a combination of a tariff and the tax-cum-subsidies on consumption.

This is illustrated, for fixed terms of trade, in Figure 10, where \bar{Y} represents the maximum level of Y-availability that is to be permitted and Y_f represents the level that would be reached under free trade. A tax-cum-subsidy on consumption will enable consumption to occur at C_{cs} and welfare to be maximized at U_{cs} , because any alternative policy is easily seen to involve equilibrium consumption to the west or southwest of C_{cs} .

Figure 10
 Non-Economic Objective Relating to Consumption
 in a Sector and Optimal Policy Intervention



The diagram illustrates the case where, under a unified-rate policy, consumption of commodity Y will be at Y_f , which is in excess of the level \bar{Y} , above which the consumption of Y cannot be allowed to rise for non-economic reasons. A suitable tax-cum-subsidy on consumption will shift consumption to C_{cs} and welfare to U_{cs} . This policy will minimize the welfare loss associated with satisfying the consumption constraint, as any other policy will involve consumption along C_{cs}, \bar{Y} , to the left of C_{cs} , and hence yet lower welfare.

(f) Revenue Collection as Objective

If the possibility of the substitution between leisure and income is admitted, the only nondistorting taxes are lump-sum taxes. So far, however, I have been discussing welfare questions, implicitly or explicitly, on the basis of fixed factor supplies, so that it should always be possible to collect revenue by uniform consumption taxation, for example, without incurring welfare losses.

Suppose, however, that such taxation is not possible—as is alleged by some less developed countries on administrative grounds—and the revenue must be collected by trade taxes alone. If one sticks, in this second-best framework, to the traditional model confined to two com-

modities and two primary domestic factors, then (since an export tariff is equivalent to an import tariff) the only meaningful question to ask would be in "positive" analysis, such as that investigated by Johnson (1951) in comparing the tariff that gave rise to maximum revenue with the optimum tariff. If one is to ask meaningful questions relating to welfare, one would have to admit the possibility of multiple imports (or exports) and examine the optimal *structure* of tariffs to yield pre-specified revenue, for example.

In fact, Ramaswami and Srinivasan (1967) have recently analyzed this question with considerable elegance, using a three-good model with an exportable good that does not enter into domestic consumption, a nontraded good that is made for home consumption, and an imported consumer good, one primary (domestic) factor (labor) and one wholly imported factor (metal) and no monopoly power in trade. Taking the revenue constraint to be specified as a given money sum and as a fraction of the wage bill, in turn, they have demonstrated the possibility of multiple rates arising in the constrained optimum solution. In the more interesting case in which the revenue is specified as a fraction of the wage bill, for example, it is shown that if the given trade deficit [equal to aid inflow, for example] at world prices is equal to or less than revenue required when the wage rate is at the balanced free-trade level, the optimal policy is to subsidize exports at as high a rate as possible while taxing imports of metal to make exports at the same rate, and to tax imports of the consumer good and of metal to make the good for home use at the higher rate that secures the specified revenue.

(g) *Tied Aid*

A departure from unified exchange rates may be called for also as a result of the tying of aid leading to a constrained maximization of social welfare. Note here that this may *not* call for explicit state intervention; but it may, in the form of trade or domestic-policy instruments.

Take, for example, the following Models I and II, which are made deliberately simple so as to bring out the essence of the problem.²¹ In each case, one designed to show the implications of tying with respect to commodities and the other the implications of tying with

²¹ I am thankful to T. N. Srinivasan for showing how these two simplified versions of more complex models designed by me to bring out the same points are sufficient to demonstrate the emergence of multiple rates owing to aid-tying.

respect to source, the possibility of multiple rates arising is demonstrated. The implication is that observed discrepancies between the (best) foreign prices and domestic prices will signify inefficiency with respect to the aid inflow and *not* with respect to the efficiency of allocation of resources, given the constraints on the aid-flow utilization. In Model III, I shall portray a case where the tying is such as to require actual state intervention to support the required outcome. This case will correspond to the analysis of situations where bulk trading, for instance, is carried out in a competitive economy at terms that are incompatible with market conditions except through governmental action in the form of tax-cum-subsidies or trade tariffs and subsidies. In this case as well, the implication will be that the official departure from the unified-rate policy is a result of constrained maximization imposed by aid conditions; it will *not* be that official policies pursued by the *recipient* country are inefficient.

Model I. Assume a single product, no exports, imports of two inputs financed by aid, aid tied to specific purchases of the two inputs, and no domestic factors. Let the production function for output be characterized by diminishing returns along isoquants. The international prices of the inputs are fixed.

The model can then be illustrated in Figure 11. \bar{K} and \bar{L} are the fixed quantities of inputs obtainable under tied aid; AB represents the availability line for these inputs, at the given international prices, if aid is not tied. The amount of output produced with tied aid is X as measured at the isoquant passing through (\bar{K}, \bar{L}) . On the other hand, under untied aid, the optimal solution and equilibrium would be at (K^*, L^*) , where the domestic price ratio would equal the international price ratio. At (\bar{K}, \bar{L}) , however, the price ratio diverges from the international price ratio, signifying a sub-optimal position, one however which a competitive system would reach but which has been caused by the tying of aid rather than by inefficient policies of the recipient country. Multiple rates will thus exist and will signify the inefficiency resulting from the tying of aid.

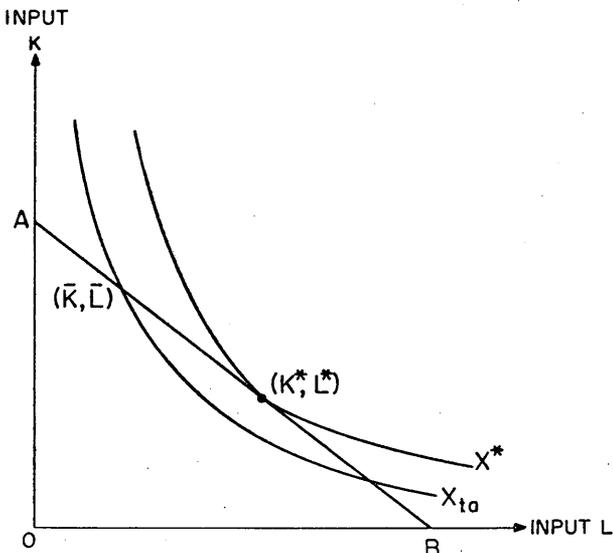
Model II. Assume the same model as Model I, except that the aid is now tied to sources rather than to commodities. Let then the supply of input K be cheapest from Source I and of input L from Source II. The prices are fixed at either source of supply, as before.

The model can then be illustrated in Figure 12. $A_{II} B_{II}$ represents the aid-availability (in terms of possible combinations of K and L) line

from Source II, where L is cheaper; $C_I D_I$ the aid-availability line from the other Source I. The total aid-availability line then (in terms of *feasible* combinations of K and L) will be EFG under aid tying, where EF is parallel to AB and FG is parallel to CD and $(OC_I + OA_{II}) = OE$, and $(OD_I + OB_{II}) = OG$. If there were no tying, the possibility curve would be the straight line JFQ . At F , the two inputs are bought at their cheapest sources.

Figure 11

Aid Tied to Commodities and Multiple Exchange Rates

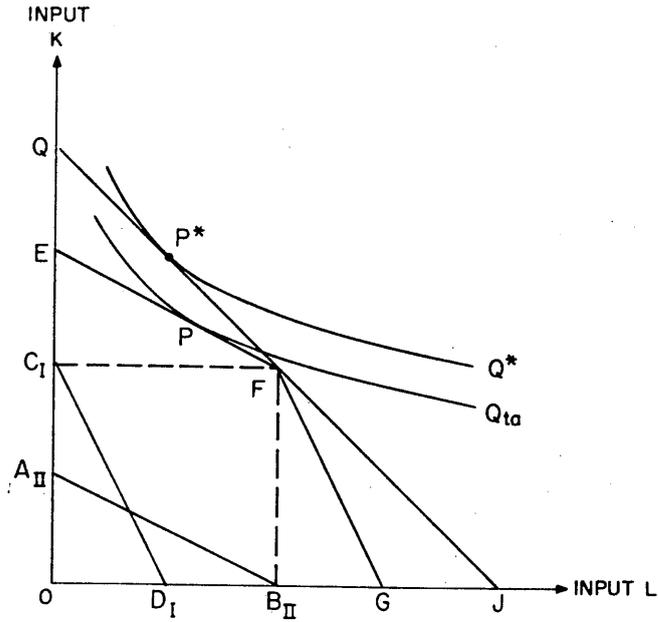


The diagram illustrates the possible emergence of multiple exchange rates when aid is tied by commodity specification. Aid is equal to OB of input L or OA of input K at international prices. The optimal combination of inputs to purchase with the aid would be (K^*, L^*) . Thus, aid tied to the bundle (\bar{K}, \bar{L}) will result in sub-optimality and also in multiple exchange rates as the domestic price ratio between K and L , given by the tangent to isoquant X_{ta} at (\bar{K}, \bar{L}) , will diverge from the international price ratio.

Under source-tied aid in this model, then, if the maximal isoquant were to touch EF at P , multiple rates would follow, because the marginal rate of substitution in production would equal the price ratio in Source II and, hence, diverge from the "best" international price ratio JFQ . Output would be sub-optimal in relation to the level possible under untied aid (at P^*); the entire aid from Source I would be used to import K . A similar conclusion, *mutatis mutandis*, would hold for

Figure 12

Aid Tied by Source and Multiple Exchange Rates



The diagram illustrates the possible emergence of multiple exchange rates when aid is tied by source. QJ is the aid-availability line giving alternative combinations of factors K and L which can be purchased at the lowest international prices if aid is untied. EFG , however, is the *feasible* total-aid-availability line if aid is tied to source by each country, I and II, with $C_I D_I$ and $A_{II} B_{II}$ the resulting country-aid-availability lines. If, then, the maximal isoquant were to touch EFG at a point such as P , the domestic price ratio (given by the tangent at P to EF) will diverge from the true international price ratio (given by QJ).

the case where the maximal isoquant were to touch FG . If the maximal isoquant were to pass through F , however, there would be multiple rates and inefficiency, *unless*, in the borderline case, the slope of the isoquant at F equalled JFQ .

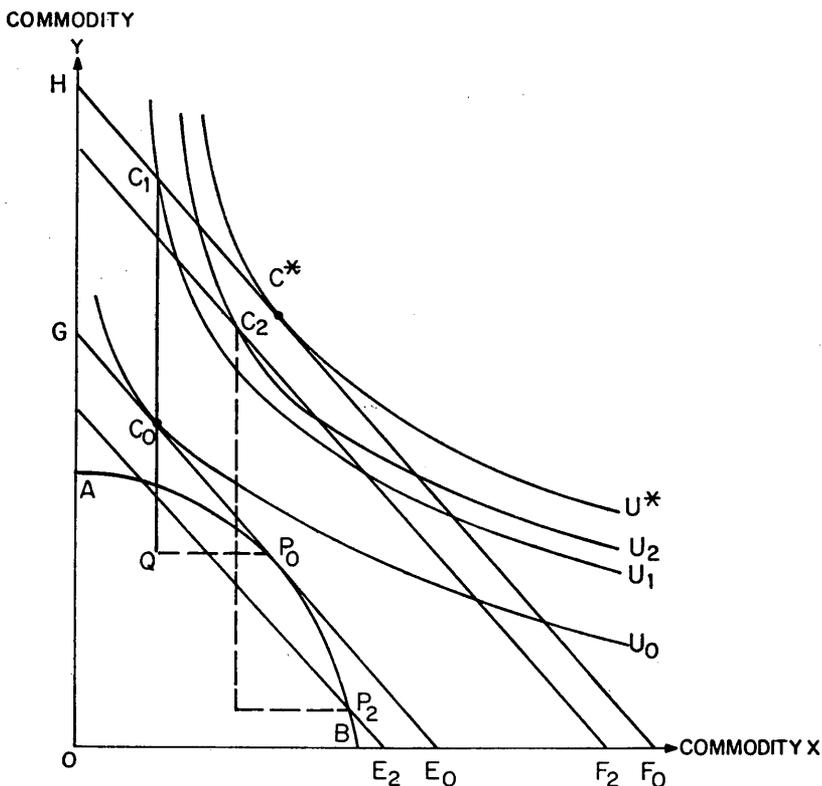
Model III. I now come to a model which is somewhat more complex, but realistic, with respect to the form of tying employed. Suppose that the so-called "additionality" principle is assumed, so that the recipient country must import specific commodities in full addition to initial imports. (A similar form of additionality with respect to source tying can also be analyzed, by extension of the present analysis.)

Assume, for this problem, that two commodities are producible with domestic resources and the production-possibility curve is a convex set.

Additionality takes the form of requiring that, on top of existing pre-aid imports, the full value of aid must be imported in the specific form of importables. In Figure 13, for example, the country would have produced at P_0 and consumed at C_0 , with P_0C_0 being the given price ratio abroad. However, with aid equivalent to E_0F_0 of X -goods or

Figure 13

“Additionality” in Aid-tying and Multiple Exchange Rates



The diagram illustrates the emergence of multiple exchange rates when aid is tied by the “additionality” principle such that the recipient country must import specific commodities in addition to initial imports. AB is the production-possibility curve, in the two-commodity model. With aid equivalent to E_0F_0 of X -goods and C_0P_0 , the fixed international price ratio, C^* would be the optimal consumption bundle. With “additionality” in aid, however, this recipient economy must import $(GH + C_0Q)$ of Y -imports. Production continuing at P_0 , and consumption shifted to C_0 , with a tax-cum-subsidy on consumption, will satisfy the necessary additionality. So will consumption at C_2 and production at P_2 , brought about by suitable tax-cum-subsidies on production and consumption. In either case, multiple exchange rates emerge: domestic price ratios will diverge from the international price ratio.

GH of Y -goods, C^* would have been the optimal point of consumption and social welfare would have been at U^* . Suppose, however, that the aid-giver demands that (on the so-called "additionality" principle) the recipient should absorb altogether ($GH + C_0Q$) amount of imports of Y . In this case, one *possible* equilibrium position, calling for a suitable consumption-tax-cum-subsidy policy, is with consumption at C_1 , production continuing at P_0 , and with C_1C_0 of Y being absorbed as aid and C_0Q_0 of Y being imported in exchange for P_0Q of X . But a *superior* position is at C_2 with production at P_2 , where total imports of Y , under trade and aid, continue to be at the required level, but welfare level has risen to U_2 . Clearly, the optimal second-best policy under this form of tied-aid constraint will involve suitable policies of taxes and subsidies on both consumption and production.

In this case, which corresponds in spirit to the more usual analysis of bulk-trading situations, the receipt of aid is *conditional* upon a certain pattern of trade and thus *requires* governmental intervention directly into the competitive system, for the market will not throw up the required pattern of trade on its own. Note, again, that the multiple rates are here the product of aid tying, and the inefficiencies they reflect are *not* to be interpreted as those resulting from inefficient policies of the recipient government.

Further, there may even be a dynamic reason here for departure from a unified exchange rate. It could be argued quite realistically that, even when such tying is not formally imposed, it is often considered to be "wise" to act as though it is, in the interests of *future* aid inflow. Thus, owing to this link between the current pattern of utilization of aid and the future aid inflow, it may be wise to forego some current income through treating the current inflow *as though* it were tied. Policies which thus appear to be inefficient from the current point of view may turn out to be fully rational, in economic terms, if the future is also considered.

C: IMPLICATIONS

In conclusion, we must remember that, with all these arguments for departures from unified exchange rates, official intervention must contend with the questions:

(1) What *form* of departure is optimal (tariffs versus production tax-cum-subsidies, and so forth)?

(2) At what *level* must the policy instruments (trade tariffs, subsidies, and domestic tax-cum-subsidies) be exercised?

(3) Where the policy instrument must be used with respect to different commodities, what is the optimal *structure* thereof (if tariffs are to be levied, for example, to diversify production, what is the optimal tariff structure that will bring this about at least cost)?

(4) If sub-optimal forms of intervention are adopted, at what level and structure must they be exercised to yield, at least, an improvement rather than deterioration in welfare compared to the level reached under a policy of unified exchange rates?

Unless these essential questions are posed, if not answered, it is utopian to expect that the numerous departures from unified exchange rates that we observe will generally yield any greater improvement in welfare than would unified exchange rates. Furthermore, as I shall go on to argue in the next Section, a close look at the reality in many parts of the world reveals forms of governmental departures from unified exchange rates which make little sense indeed from rational points of view.

III. DEPARTURES FROM UNIFIED EXCHANGE RATES IN PRACTICE

The recent cumulation of knowledge about the pattern of departures from unified exchange rates, arising particularly acutely in several less developed countries in Asia and in Latin America from the maintenance of overvalued exchange rates and from a widespread tendency to afford *de facto* protection through quantitative restrictions as soon as domestic production has become available in any and every industry, suggests very strongly that serious losses are accruing from the present policies—when one takes as the reference point a system of “rational” departures from unified rates.

A. PATTERN OF RELUCTANT EXCHANGE-RATE ADJUSTMENTS

At the heart of these inefficiencies is the pattern of exchange-rate adjustments to which many of the less developed countries seem to have become accustomed (with the exception of Latin America, where exchange rates lagging behind wildly rising price levels lead, *de facto*, to identical results). The pattern of reluctant adjustment of exchange rates is familiar enough to analysts of the international economic system, having belied the expectations of the early postwar period which feared competitive depreciations predicated on the interwar experience. The system is not an exclusive prerogative of the less developed countries by any means. But with them the resulting costs are more expensive at the margin; for their economic maneuverability is frequently limited by rising populations and insufficiently growing incomes.

The typical stages in the transition of a less developed country, from one parity to another, may be described as follows:

(1) Balance-of-payments difficulties, under a fixed parity, lead to the establishment and frequently to the more or less permanent continuation of a regime of quantitative restrictions. The result is the establishment of several *ad hoc, de facto* effective tariffs on different activities—a set of multiple import rates. There also comes about a net export rate (equal to parity) that falls below the effective import rates. (They exceed parity by the premium on imports, which may vary between different imports if the exchange markets are effectively segmented.) This export rate not only discriminates against exports

but also compounds the distortions that would arise from a multiplicity of rates on imports.

(2) Gradual shift towards a system of effective export subsidies occurs as the tight balance-of-payments situation and the quantitative restrictions continue, in order to increase export earnings. The effect is to reduce the differential between the export and the import rates, while often leading to multiple rates on exports as well, since official subsidies on exports almost always are discriminatory in practice.

(3) As the import premium continues, while lessened (*ceteris paribus*) by the export subsidization, governments turn gradually (under public criticism) to using tariffs more actively so as to cut into this premium and earn the scarcity profits themselves. The result is that, with both export subsidies and import tariffs being used in this fashion, there comes about a *de facto* devaluation on current visible transactions (extended gradually again to invisibles, such as remittances from settlers abroad and tourist earnings, but practically never to transactions on capital account. The *de facto* devaluation, however, is characterized by numerous rates on imports and exports, and conceals effective export rates on specific commodities that may exceed or fall below their effective import rates, so that numerous distortions remain embedded in the system.

(4) As the realization grows that a *de facto* devaluation has occurred, in an inefficient manner, the way is seen to rationalize the situation by devaluing the rate formally and thereby managing to reduce, if not eliminate, the reliance on export subsidies and import tariffs, though even this is done with considerable reluctance.

(5) Then the process can, and frequently does, start all over again, with the system of quantitative restrictions again taking the brunt of initial adjustment and then gradually being eased by export subsidies and import tariffs.

There are several variations on this general sequence, of course. In place of a freer use of import duties, for example, exchange auctions (as in Brazil) or multiplicity of exchange rates, fixed directly by exchange-control authorities (in many Latin American countries), have been used. Similarly, there are wide variations in the forms of export subsidy and the manner in which selectivity is exercised in granting them. In Pakistan and India, the most important form of export subsidization has been variations of the exchange-retention schemes which were fairly common with respect to dollar-earning ex-

ports in the early postwar period. Under these schemes, the exporter becomes entitled to an import license of the value given by a certain proportion of f.o.b. value of exports effected. Since there is a premium on imports, this "import entitlement" becomes effectively an export subsidy whose value can be measured as the rate of entitlement multiplied by the premium. The effective subsidies thus given have varied between activities because the entitlement rates were different between activities and also, much more acutely in the Indian schemes, because the market for sale of the import licenses was segmented according to the different schemes being administered separately for different activities. In the vast bulk of cases, however, the entitlement rate being below unity (100 per cent), the effective rate on exports was *below* the effective rate on imports and hence the degree of differential between export and import rates was reduced but *not* eliminated.²²

The quite *indiscriminate* multiplicity of export and import rates, as also the continued differential between (higher, average) import rates and (lower, average) export rates which characterizes this pattern of reluctant adjustment in these countries is undoubtedly a source of considerable waste. There is a tendency to consider these sources of waste as not very important, for the reason that some of the recent empirical estimates of Harberger (1959), Johnson (1965c), and others have shown that, if several (rather weak) assumptions are made concerning elasticities of supply and demand, the effects of distortions from sources such as (certain types of) tariffs are but a small percentage of national income.

Undoubtedly these estimates are within a static framework and further ignore (what many economists consider to be very important) sources of inefficiency such as the neglect of cost minimization at any output level because of absence of competition. As economists such as Paul Streeten have rightly emphasized, what is measurable need not be important at all. However, even within the framework used to develop them, these estimates are seriously misleading.

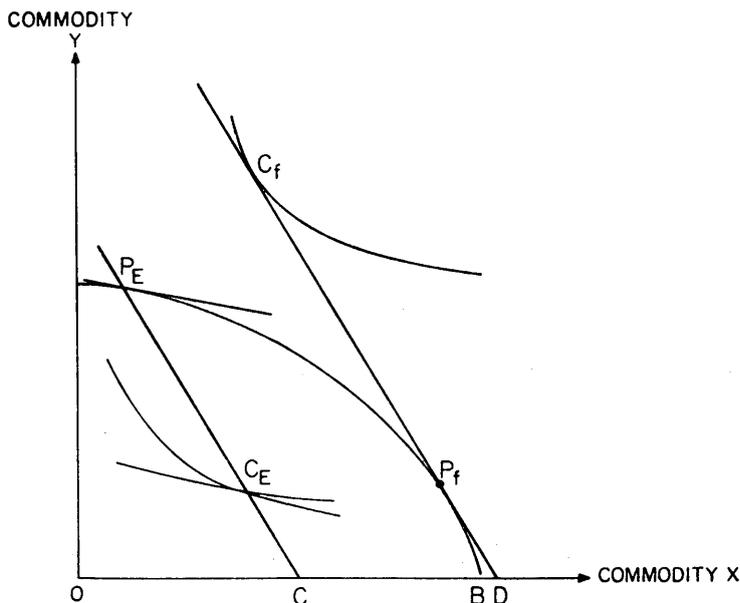
²² This can be seen readily. Under these schemes, for exports effected, an exporter could earn an import license of e per cent (of f.o.b. value of exports) which, when disposed of at a premium of y per cent in the market, gave rise to a net *ad valorem* subsidy on export value of ey per cent. On the other hand, the effective cost (in foreign exchange) for imports (ignoring certain minor complications resulting from the nontransferability of *some* imports) was only y per cent higher than the parity rate. Thus the effective export rate was $(1 + ey)$ while the effective import rate was $(1 + y)$. In cases where the import entitlement was over 100 per cent ($e > 1$), however, the situation was one of *net* export subsidization.

First, there is the psychological point that practically anything divided by national income is likely to look "small." On the other hand, this optical illusion can be readily destroyed in the present instance by turning the estimates around and arguing, more impressively, that an average savings ratio of 15 per cent, combined with a marginal capital/output ratio of 3:1 will yield a growth rate of 5 per cent. Thus, a loss of even 10 per cent of national income will represent a loss that is twice the growth of output that is normally expected per annum for many countries on the average.

Second, it must be emphasized that the estimates presented by these authors are, directly or implicitly (via thinly disguised *guesses* at substitution possibilities for specific countries), strictly hypothetical. Lest any reader may have been bamboozled by the deployment of elementary mathematics and Cobb-Douglas and CES production functions into believing that an inherent property of inefficiency is that it must necessarily be insignificant, I refer you to Figure 14. There I have shown that, by suitable export-subsidization policy, for a country with neither monopoly power in trade nor any domestic imperfections requiring the use of first-best domestic tax-cum-subsidies, the government of that country can inflict a significant loss on its system, *as compared with the optimal level under a unified exchange rate*. Thus, for example, by shifting production to P_B through appropriately subsidizing the export of commodity Y when under a unified exchange rate the economy would have been exporting commodity X instead, the economy can be shifted from real income (measured at international prices) of OD in terms of commodity X to real income of OC , which is exactly *half* the level under the unified rate. And the damage could have been worse, if I had cared to demonstrate it in this example!

Third, it is frequently thought that the cost of inefficient allocative policies is likely to be small for the less developed countries because their economic structures are rigid (as Charles Kindleberger has always emphasized). Two qualifications, however, need to be made to this argument. (1) A less developed country, which is predominantly agricultural, may still have significant substitution possibilities from our present viewpoint: a country or region dependent on rice paddy and jute, for example, would be characterized by strong technological substitution possibilities within existing resources at a point of time and could thus suffer seriously from distorting policies (affecting the relative incentives between the two crops). On the other hand, because

Figure 14
Possibility of Significant Loss of Real Income from Policies
Resulting in Misallocation of Resources



The diagram illustrates how real income can be halved from OD to OC , measured in X -goods, if the policy adopted is changed from a unified rate to an (appropriate) export-subsidization policy.

of the considerable nonmalleability of capital (emphasized by the Cambridge school, led by Mrs. Joan Robinson), the advanced economies with large stocks of physical capital among their existing resources may have very limited substitution possibilities in the short run. (2) Moreover, the proposition that the less developed countries will not suffer seriously from distortions, because of rigid economic structures, must be qualified insofar as a significant augmentation of their resources annually occurs via foreign aid in many cases, and these resources are malleable in a very large degree (despite aid tying by end use) and therefore characterized by considerable substitution possibilities from our point of view. A static view, such as that embodied in the approach of many trade theorists even up to this date, removes this point from their analysis of the problem altogether, but it is none the less a significant point, as much of the waste attaches to the utilization of these incremental malleable resources in these developing countries.

To return to these countries, then, a close look at their vast multiplicity of effective rates, arrived at almost without any clear economic rationale (in many cases purely as a side-result of the method of reluctant adjustment), throws up numerous instances of inefficiencies that leave a clear impression of concealed gross losses.

Thus, for example, recent attempts at evaluating projects at international prices, implying operationally the application of the principle of unified exchange rates, shows that the return to domestic resources employed in these projects, which have absorbed considerable resources, may actually be negative, thus implying that in terms of international opportunity cost these projects have actually led to a *decline* in national income. In a recent study of a major heavy electrical plant, which was one of the few capital-intensive projects of India's Second Five-Year Plan, Ian Little found that the rate of return actually turned out to be negative, at international prices, even though evaluated at *blueprint* efficiency (which, needless to say, is rather a distant goal)!

Closer analyses of the results of export-incentive schemes, as operated in India, have thrown up several other clear examples of waste resulting from the indiscriminate creation of multiple rates. Several products have been exported f.o.b. at low, give-away prices (with domestic incentives compensating for losses), while identical homogeneous items have been imported by yet other user-producers at *higher* international c.i.f. prices, because the effective rates to these different parties on their respective transactions were not unified. Similarly, because export subsidization occasionally exceeded the effective import rate for specific products, incentives were set up to export items on which the cost of inputs (evaluated at c.i.f. cost) would exceed the (f.o.b.) value of export, thus indicating again negative value added at international prices. This may be seen readily in terms of the following logic.

Let P_x stand for unit export price (which, for simplicity, is assumed to be constant), P_m for unit average price of inputs (at c.i.f. value) in exportable production, m_x for the input content per unit exportable, and P_D for the domestic unit price of the exportable commodity.

Then two conditions must be satisfied before export will be effected in this industry under the exchange-retention scheme:

$$P_x (1 + ey) \geq P_D \quad (1)$$

$$\text{and } P_x > P_m \cdot m_x (1 + y) / (1 + ey). \quad (2)$$

The former condition merely states that the return from unit export must be at least equal to the return from unit sale in the domestic market, else, domestic sale will be preferred to foreign sale. The latter condition further states that the revenue from unit export must exceed the cost of the inputs as given by the premium in the market for foreign exchange.

Now, consistent with these two conditions, we can have $P_x < P_m \cdot m_x$ (that is, negative value added) if $e > 1$, that is, the entitlement rate is greater than 100 per cent. On the other hand, note that, if over-invoicing of exports is practiced, the possibility of negative value added arising, signifying inefficient exportation, increases. In this case, condition (2) now becomes

$$P_x > P_m \cdot m_x \frac{1 + y}{1 + ey + k(ey - \rho)}, \quad (2a)$$

where k is the proportion of f.o.b. value by which export value is raised by faked declarations incorporating overinvoicing and ρ is the black-market premium on foreign exchange. Thus, in this instance, even if $e < 1$, it would now be possible to have $P_x < P_m \cdot m_x$ consistent with conditions (1) and (2a) being satisfied. Since, in India, over-invoicing has been a widespread phenomenon, the incidence of negative value added arising is not to be discounted and instances have been readily found (Bhagwati, 1967a).²³

Similar results have been found in several other countries—in the Philippines and Pakistan in Asia, in Brazil and Argentina in Latin America, and would undoubtedly come to light in other parts of the world if only one cared to look for them. Such results, after all, only dramatically highlight the wasteful effects of the distortions introduced by departures from unified rates introduced by the institution of exchange-control systems; the *total* losses inflicted by the multiplicity of rates must be larger.²⁴

²³ Note that, in this instance, we observe the phenomenon of negative value added (at international prices) *not* because investment in the industry is economically wasteful *per se*, but because (net) export subsidization makes it so. It is perfectly conceivable, therefore, that, with such incentives removed, the industry would show positive returns (at international prices) and might even have comparative advantage in production (though *not* for export).

²⁴ These losses, however, are exaggerated by Anne Kreuger (1966), whose recent application of the same technique of evaluating value added at international prices for Turkey arrives at loss levels that are very large in relation to national income. While the losses from the operation of exchange control in Turkey may be as large as Kreuger thinks, the method of analysis used by her is limited by two

B. INEFFICIENT METHODS OF IMPORT SUBSTITUTION AND EXPORT PROMOTION

While, however, the observable exchange-rate policies of many less developed countries will, in general, lead to sizeable losses thanks to the resulting multiplicity of rates which have no economic rationale, the situation is actually more serious than has been suggested so far. The reason is that the precise method of operation of the quantitative restrictions, the export subsidies, and the investment controls that are frequently the domestic counterpart of this trade regime compound the inefficiencies considerably. While what I now proceed to describe could well be documented by reference to most less developed countries with balance-of-payments difficulties, the main outlines relate to the experience of India over the last decade, for I am well acquainted with its many nuances and well aware of its relevance to experience elsewhere.

The system of quantitative restrictions there not only created a maze of multiple rates with differential effects on incentives, but it was also squarely based on the principle that domestic availability justified exclusion of imports. This principle implied a built-in promise of getting *de facto* protection by the granting of quantitative restrictions as soon as domestic production came into effect (*no matter what the domestic cost of production relative to foreign cost*). This principle of protection, observed in countries as wide apart as Pakistan, Turkey, and Brazil as well, led to a *total* disregard of efficiency in the resulting investments. Where the investments were controlled by licensed entry, the choice among industries was again determined without reference to costs and purely by reference to aggregative notions such as "the need for heavy industry," ignoring the fact that, even if a case could be made for investing in a capital-goods sector on long-term grounds,

factors: (1) it would be inappropriate to assume that the assumption of infinite elasticities of supply and demand internationally can be applied to all processes in Turkey; and (2) similarly, it cannot be implicitly assumed that constant costs obtain once significant shifts in investment and output levels are admitted, as they must be, in making the estimates. Moreover, the estimates in Kreuger's stimulating paper need to be adjusted for (at the very least) some of the kinds of qualifications to the principle of unified exchange rates that were listed in Section II above. Finally, it has been stressed to me by Bela Balassa that *all* tradables should be evaluated at *international* prices, as is clearly the practice of economists, such as Tinbergen and Little, who have used the technique (involving the application of the principle of unified exchange rates) for evaluating and ranking projects by their comparative advantage. If this is not done, then the ranking of projects, as well as the real cost of distortions, measured by the technique of evaluating at international prices, will be distorted.

there were numerous choices *within* the so-called "heavy-industry" complex which, if properly exploited, could yield significant gains in real income.

With the actual pattern of investments thus being determined primarily by effective incentives set up by existing *and* anticipated quantitative restrictions—subject to restrictive licensing, informed in turn by notions that had little in common with the concepts of costs and comparative advantage—the results could hardly be expected to be inviting if one compared the outcome with what *could* be achieved under ideally efficient policies. Even the allocations of foreign exchange and domestic materials *qua* inputs into existing capacities were strictly rationed, by industry, and by firm within industry, and retransfers were made illegal in general, so that the possibility of market-directed shifts in utilization towards more efficient plants or firms were also ruled out (although illegal transfers, within limits, were possible).²⁵

A notable casualty of these developments was the Tariff Commission, which had, until these years, played a marked role in giving protection to domestic industries and in following systematically (if not efficiently, from an economic viewpoint) the progress in the cost structure of the protected industries with a view to determining the magnitude and duration of the tariff protection. The Tariff Commission lost touch with the major industrial developments in the country, as few industries applied for tariff protection when the exchange restrictions did the job well enough. More importantly, even where the industries applied for protection to the Commission (mostly as a second line of defense if quotas were to be liberalized), the Commission acted virtually as a tariff-estimating agency whose job apparently was to make the tariff-inclusive landed price of the imports uncompetitive with the domestic prices of produced outputs, estimated on the basis of a "fair price" formula which added a standard rate of return to the costs of (often the least efficient firm's) production. The notion that the Tariff Commission could turn down an application for protection was no longer relevant, as the primary decisions on *that* issue belonged to other more important agencies—the Planning Commission, the

²⁵ Since allocations of profitable foreign exchange and domestic materials at controlled prices were related under the system to existing capacity, with quotas estimated on a *pro rata* basis, the system also built into itself a distorting incentive to add to capacity even when there was underutilization of existing capacity.

licensing authorities, and the exchange and import controllers. As Lakdawala (1964, p. 109) observed, in his Presidential address to the Indian Economic Association recently:

In the old Tariff Commission procedure . . . there were checks both on the types of industries protected, and the later behaviour of the firms in the industry. Besides the periodical public inquiries, the annual Report paid attention to questions like prices, costs, quality, consumers' satisfaction, etc., of protected industries. There are no parallel safeguards being observed now.

Nurul Islam has recorded a similar situation in Pakistan, of a Tariff Commission emasculated by the growth of the quota system (somewhat less so than in India, but still sufficiently so) and reduced to a minor role. Let me quote him from a recent study (1967):

The Tariff Commission examines and suggests tariff rates for one industry at a time as and when the industry concerned applies for protection and the Government refers the case to the Commission for examination. . . . The programming of industries or determination of priorities in the field of industry belongs to different policymaking organizations such as industrial licencing authorities and the Planning Commission. The Tariff Commission is not a party to the process of the formulation of industrial priorities or selection of industrial projects. The Tariff Commission comes into the picture only at a later stage when the industry has already been sanctioned by the appropriate authorities and is functioning for some time.

But if the situation has been so grotesque on the side of imports and investment allocations for import substitution (in the widest sense), it seems to have been equally disturbing with respect to exports. Beginning from a situation of rather large premia on imports and little export incentives, with differentials between the export and import rates ranging upwards of 50 per cent in favor of imports, the system moved away in India towards a more active form of export subsidization which, *ceteris paribus*, narrowed this differential. However, it soon became official policy to grant to any potential exporter who came to the Government sufficient export subsidy to offset whatever loss he said he would have to incur by diverting sale abroad. Thus, a whole range of export incentives was granted through the

import-entitlement schemes, tax rebates, and other methods, with a variety of effective incentives and rates, whose major rationale was the decision to increase *any and all* exports by providing all necessary offsets to excess of domestic profitability over foreign prices.²⁶ Quite aside from the fact that there was practically no way of checking whether the declared unprofitability of sales abroad were genuine (so that large profits must have undoubtedly occurred from merely exaggerating the costs of foreign sale), the principle of comparative advantage was not merely violated by such a system but, in fact, directly contradicted: for, under it, there was a systematic encouragement of the export of uncompetitive items as against the export of competitive ones! How persuasive the principle looked to policymakers, keen to increase exports, and how lucrative its implementation must have been to exporters, could be seen by the growing demands on the part of potential exporters for higher subsidies to offset transport costs when the exportables were made from deep within the land mass of the country!²⁷

Clearly, the operative principle with the Ministry of International Trade had become: export maximization. Economists frequently worry about educating policymakers that import substitution is not desirable, except when it is shown otherwise—on grounds such as infant industries. It needs, however, to be equally emphasized that all exports or any exports are not desirable either, and that countries can export too much and the wrong things. This is a difficult thing to do when exchange control leads to a differential between export and import rates that *does* call for a corrective export subsidy. In such a case, the economist must support export subsidies but must oppose the absurdly

²⁶ In fact, at one time the Government was operating a clandestine scheme under which, if the normal cluster of incentives was insufficient to yield adequate subsidy for effecting any specific export, the Government would grant *additional* entitlements on an *ad hoc* basis. The scheme was clandestine because the entitlements were import licenses for dryfruit, which carried a lucrative premium. But it would have been impossible to admit this formally to the IMF because the IMF "did not ask questions" of the Indian Government about the entitlement schemes. Both pretended that the entitlements were not "really" subsidy schemes but were intended to supply scarce materials to export industries which "were earning their imports." This pretense did not make sense if a truck exporter was getting a dryfruit license!

²⁷ The demands went so far as to claim that subsidies should be made directly a function of the internal transport cost incurred in bringing the product from the hinterland to the nearest port! The economic magnitude of this demand will become clear if it is realized that among those demanding such incentives from a willing Ministry were exporters of bicycles and sewing machines over 1,000 miles from the nearest outlets!

wasteful forms in which they are given, and policymakers often have no patience for such subtleties.²⁸

The inventory of the inefficiencies of this system would be incomplete if I did not describe also how it virtually eliminated the cost efficiency which derives from competition by leading to fully sheltered markets for each firm. Quantitative restrictions rigidly eliminated competition from abroad, while licensing eliminated the possibility of domestic entry by rival firms. In either case, the short-sighted thought was to "prevent waste of scarce resources" when there was already domestic capacity in an activity. At the same time, the allocative system for inputs implied that the efficient existing firms could not even outbid scarce materials from rival firms, so that *all* conceivable forms of competition were ruled out. Under such a system, there was little reason indeed for firms to pursue economies in production relentlessly, if at all. It is impossible to quantify these inefficiencies meaningfully; they often take the form of indifference to quality and consumer complaints. It is impossible to believe that the widespread dissatisfaction that one comes across in these countries, among consumers of both finished and intermediate items, with the quality of the domestic items that they are forced by policy to use, stems primarily from the difficulties of "learning by infants" or from what is rather passionately (and sometimes accurately) described as xenophilia. Most certainly, much of it is a product of the featherbedding caused by the system of reluctant adjustment combined with the *de facto* protection of any and every item of domestic production.

If these systems to which the less developed countries seem to have

²⁸ There are also political reasons why it is difficult to get reforms introduced in this area, once the whole complex of such export subsidies has got under way. (1) Often, the Minister's political reputation depends on his producing a sizeable increase in export earnings, *no matter how*. Thus, for example, when Goa was taken over by India and the Indian statistics thereafter showed a sizeable increment in export earnings, the Minister's reputation went up: Indian exports were beginning to move! Changes in the terms of trade, brought about by external factors, have a similar effect. Michael Michaely tells me that the Israeli Minister responsible for exports once refused to release export figures until somehow the figure was pushed up above the preceding year's level! Perhaps the answer is to abolish all separate Ministries for exports, and to educate politicians *and* international institutions that exports in *themselves* are a poor index of efficiency in economic performance. (2) Equally important is the opposition provided by the beneficiaries of these subsidy schemes, who would find to their definite disadvantage a reform making it impossible to fatten on what are effectively variable-subsidy schemes (largely manipulated by themselves for their own benefit), and who also manage frequently to frighten the Ministry in charge of exports into believing that any reform will "sabotage the export effort."

become attached are so wasteful, the pertinent question is: why is it that they still have so much appeal to policymakers in these countries? It is always worth asking this question, as economists have rightly been careful not to fall behind policymakers in formulating correct answers to practical problems ever since Keynes was anticipated by deficit financing. In this instance, however, I think that the reasons which serve to explain the adoption of these inefficient policies seem to reveal merely how easy it is to get economic policy premised on a false and wasteful basis.

I think that the explanation for the prevailing state of affairs is to be found in two rather broad and similar reasons for loss of faith in the price mechanism: one relating to the foreign-trade sector, and the other to the domestic. Put in a nutshell, few policymakers in these countries seem to believe in the efficacy, not to raise the question of the efficiency, of exchange-rate adjustments, for a variety of reasons, of which perhaps the most important is the notion that the less developed countries have "foreign-exchange bottlenecks," which leads to a modern version of "elasticity pessimism." Moreover, there is an equally blanket premise that the problems faced by the less developed countries relate to growth and transformation, to which the price mechanism has little relevance, that growth is more important than choice (in Peter Wiles' well-known words). I wish to elaborate on each of these themes a little, for unless these views are countered, the possibility of getting the requisite changes away from the kind of systems that I have been describing seems to me to be quite remote.

C. ATTITUDES TOWARD EXCHANGE-RATE CHANGES

A range of hostile attitudes toward exchange-rate changes can be found in these countries.

(1) In India, for example, as also in countries that have inherited the British traditions in the civil service, there seems to have been a carry-over of the distrust and dislike of devaluations, which are viewed practically as affronts to national dignity. Such attitudes, of course, seem very funny in countries which have rarely had the remotest claims to having a prestigious currency (in *any* sense of the term), but they are quite real, as we discovered when pressing for devaluation in India in June 1966.

(2) Much the more important, and general, is the widespread feeling that the development of the less developed countries is being

handicapped by the *bottleneck* posed by foreign exchange. This has led to policy being dictated by the premise that the really important thing is to look for aid, to treat foreign exchange as though it were something apart from other resources, and to treat allocation thereof as something so particularly important as to require a *direct* allocative mechanism as distinct from an amorphous and unpredictable price mechanism.

At the outset, it must be recognized that foreign-exchange bottlenecks can certainly exist and that whether they do is an empirical matter. It would be tedious to insist on this elementary issue were it not for the fact that there is a tendency, emanating from the Chicago school, to regard such phenomena as exchange bottlenecks and disguised unemployment as though they conflicted with logic and sense. It is perfectly conceivable that the possibility of translating savings into investment, for example, may be constrained at the margin by lack of domestic shiftability of capacities combined with limited trade-transformation possibilities, so that it is the limited trade opportunity rather than the capacity to raise *ex ante* savings still further that provides the constraint on raising real investment (cf. Bhagwati, 1962).

Indeed, the recent work of Hollis Chenery (1962) in this area indicates that foreign transformation possibilities, rather than the ability to raise *ex ante* savings, may be the real limitation on the capacity to raise real incomes in several less developed countries.

However, it is easy enough to quarrel with the rigid patterns of demand (both intermediate and final) built into his models, and the overly pessimistic estimates of export feasibilities which he is often constrained to accept from the planners in less developed countries. Both of these assumptions must bias Chenery's estimates rather heavily toward his results.

Moreover, one must not forget that foreign-aid flows are frequently considered to be related to the ability to work out plausible *ex ante* gaps of foreign exchange, a practice that dates back to the Marshall Plan. Some of you must have heard the story of how, when the Marshall Plan recipient countries were putting together their *ex ante* gap estimates under the chairmanship of Sir Oliver Franks, the leader of the Turkish delegation caused a stir by announcing that their calculations showed an *ex ante* surplus. When Sir Oliver, with his well-known tact, suggested that there must be a mistake, some signs mixed up somewhere, and perhaps the Turkish delegation would like to

adjourn, the offer was strenuously resisted. When, finally, an emissary was despatched from the British delegation to explain how an *ex ante* gap was necessary if Turkey was to be included in the list of claimants, the delegation leader is supposed to have been shattered: "Oh, but we thought that, if you wanted to borrow abroad, you had to show a sound payments position!" Needless to say, the adjournment was accepted and the "arithmetical errors" rectified to arrive at a suitable *ex ante* deficit. The lesson, we will admit, has now been widely learnt.

Further, to many of us who have been engaged in policy debate in our countries, it is clear that: (a) The quantitative restrictions have led to heavy import dependence by encouraging the inflow of private capital for the purpose of assembling finished goods. These set up their own demands for imported components whose c.i.f. costs come very close to the c.i.f. cost of the finished manufactured imports themselves, thus creating a pattern of growth in which each unit value added becomes extremely import-intensive. (b) The claim that, despite willingness to save, investment cannot be raised, wears thin as one sees resources continually used up in providing for consumption rather than investment. Even though it may be impossible to raise investment further in any one period, the allocation of investment *currently* to the capital-goods sector will enable one to raise investment higher in the *next* period. On the other hand, one typically finds the foreign-exchange resources (which are mostly flexible in this respect) being used quite generously for supporting consumption through the creation of still more capacity aimed at increasing overall consumption.

However, regardless of whether it makes empirical sense in any specific country to argue that its investment, or rate of growth, is constrained by the inability to transform commodities through trade at infinitely elastic international prices, it should be seen immediately that this amounts merely to a feasibility constraint. I cannot see any reason at all to deduce from this that exchange-rate adjustments are inferior to the pattern of reluctant adjustments. The existence of a bottleneck merely requires the adoption of optimum tariffs, which amount to a well-defined set of departures from unified exchange rates. Admittedly, an overvalued exchange rate which involves a net import rate exceeding the export rate is formally identical with a suitable tariff rate on a lowered parity (with an adjusted wage-price level). However, the reluctant-adjustment mechanism is *not* in practice equivalent to, but is actually inferior to, an optimal tariff system, for

the simple reason that it involves, as I have already argued, a systematic bias toward *indiscriminate* protection (and, in later stages, indiscriminate export subsidization).

Thus, the notion that foreign-exchange bottlenecks imply a decline in the efficacy and efficiency of exchange-rate adjustments is an erroneous one. I am afraid that undue preoccupation with what is not feasible—for instance, “we cannot have X per cent rate of growth because of a foreign-exchange bottleneck”—has led to an irrational neglect of policies even to attain what *is* within grasp.

(3) A related impediment to a freer use of exchange-rate changes, which is common in my part of the world, is worth recording here. It is argued that, under a pegged-exchange-rate system, frequent changes in the exchange rate are difficult, if not impossible. Hence, it is smarter to use import tariffs and export subsidies, which are more readily adjustable than exchange rates.

Note that this argument, when used by policymakers, represents a major triumph in educating them: the recognition of the equivalence between exchange-rate changes and import tariffs plus export subsidies is rare indeed. Arnold Harberger tells the story of a public meeting in Chile where, the preceding speaker having been drowned in hostile jeers for having suggested a devaluation, he was met with thunderous applause for shifting around and recommending instead an equivalent increase in import tariffs to protect domestic manufacture “against foreign competition” and an equivalent increase in export subsidies to carry Chile’s manufactures “right into foreign markets.”

However, when the equivalence proposition is used instead to *avoid* formal parity changes, it is necessary to point out the limitations of the equivalence in practice:

(1) For full equivalence, the tariffs and export subsidies would have to be extended to *all* transactions, to invisibles and capital-account transactions as well. Short of a parity change itself, this is not something that will be done. In practice, the tariffs and export subsidies remain (at best) confined to visibles and a few invisibles (such as remittances and tourism), thus leading to a “dual” rate system without any economic rationale.

(2) In practice, the tariffs and export subsidies, even on visibles, can end up being selective and discriminatory between items without any economic rationale.

(3) The administrative costs of implementing subsidy and tariff programs via Customs and Revenue authorities are significantly greater in relation to a straightforward change in parity.

(4) The question whether such programs can be implemented without causing widespread corruption and evasion, when the export subsidies and import tariffs rise to high levels in lieu of formal parity changes, is a very pertinent one, and, I am afraid, one to which most experience seems to point to an answer in favor of parity changes.

I think that these are overwhelming arguments in support of formal parity changes as distinct from equivalent measures involving tariff plus export subsidies. However, insofar as it is considered impolitic to resort to frequent parity changes, tariffs and export subsidies ought to be considered as useful second-best methods (superior to quota regimes) of achieving transitions from one parity to another, precisely because they are more freely employed.

D. ATTITUDES TOWARD THE PRICE MECHANISM

The willingness to put up with the inefficiencies from indiscriminate protection through overvalued rates under exchange-control regimes, combined with the often explicit philosophy that "essential" imports are only those of which there is "inadequate" domestic production (thus all production ought to be automatically protected), must be traced also to a general lack of conviction in the capacity of the price mechanism to allocate resources in a situation where (1) major transformations in economic structure may be called for, and (2) capital and entrepreneurship may be in inadequate supply.

But, while these factors explain, they do not really justify the policies adopted. There is no reason why the framework of incentives provided to encourage domestic entrepreneurship should not be reasonably in conformity with comparative advantage instead of being indiscriminate in its incidence. Nor does it seem impossible, or excessively difficult, to exploit the market mechanism so as to push decisions in desired efficient directions, supplementing tardy entrepreneurship (where necessary) with direct investments *in conformity with efficiency*.

The fact is all too obvious that even when less developed countries have bypassed the use of the price mechanism in allocating resources, as with public-sector investments in India, efficiency has been ignored and a wasteful "physical" approach to planning has been readily

adopted, leading to production whose profitability again was secured by the system of quantitative restrictions with its automatic extension of effective protection to all production.

Unfortunately, the practices of the donor countries only serve to accentuate some of the difficulties traceable to these attitudes and resulting economic policies. Thus, aid is occasionally tied to projects which suit the interests of the donor's exporters rather than fit into the recipient's economy to greatest advantage: the recipient has sometimes little choice in the matter and is glad to receive whatever he gets. *Economic* irrationality is *not* a unique and exclusive quality of the less developed countries.

IV. CONCLUDING REMARKS

Economists clearly have to keep focussing on these issues of commercial policy (in its widest sense), for they seem to me to have acquired considerable relevance to the prospects of rapid development in the poorer countries of the world. Unless the productivity of investments in these areas increases dramatically, as it surely can (for we have phenomenal waste at the moment), the task of raising the rates of growth of real income to higher levels is going to be awfully difficult.

I remain a mild optimist on the question of getting the necessary changes in attitudes and policies accepted and implemented in the foreseeable future. Philosophies of economic policy often live short lives; and I think the regime of indiscriminate protection and physical planning will soon begin to give way to more sensible policies. Economists merely have to keep the pressure on.

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