The Theory of Comparative Advantage in the Context of Underdevelopment and Growth*

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The theory of comparative advantage has two facets which should be clearly distinguished: 1) positive; and, 2) welfare. The former relates to the formulation of hypotheses to explain the pattern of trade; the latter concerns the advantages to be derived from the possibility of various forms of trade[1]. This paper examines the status of the welfare propositions of trade theory in relation to 1) some features of underdeveloped countries; and, 2) the phenomenon of growth.

SECTION I

From the viewpoint of an individual country's welfare, the three central propositions of trade theory are: 1) free trade is superior to no trade; 2) restricted trade is superior to no trade; and, 3) an optimum tariff is superior to free trade[2]. These propositions are valid in the Samuelson sense of superiority for all income distributions[3]. They rest on standard "first-best" assumptions such as perfect competition, convexity and maximization of profits and utility which ensure that prices reflect opportunity costs. However, several underdeveloped countries are characterized by features which contradict the postulates essential to the derivation of these welfare propositions. Some well-known arguments in support of protection have been developed on this basis; these and others are critically examined in this section.

I: "Surplus" Population or Zero "Shadow" Wage

The underdeveloped countries with surplus labour in the *strict* sense that the "shadow" wage rate is zero nevertheless have a positive wage rate.

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*   This paper was written while the author held a Fellowship at Nuffield College, Oxford and was presented at the Asian Trade Seminar held at the Institute of Development Economics, Karachi in December 1961.

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[1].   J. Bhagwati, "Some Recent Trends in the Pure Theory of International Trade," paper presented at the Conference on Trade in a Developing World, sponsored by the International Economic Association, Brissago, Switzerland, September 1—9, 1961.

[2].   *Ibid.* The optimum tariff must be understood, in the last proposition, to vary with the income distribution chosen.

[3].   *Ibid.*

This introduces a "distortion" which invalidates the welfare propositions of trade theory, stated earlier. For instance, even if a country has no influence on its terms of trade, free trade need not be the ideal policy and protection *may* be the "second-best" solution. However, in analysing the effect of this distortion, it is necessary to state one's assumptions very clearly. The arguments advanced by the earlier theorists, Lewis[4] and Myint[5], are unsatisfactory in this respect; and it is easy to construct a large number of cases, from the same generic hypothesis of surplus labour, where the case for protection is by no means clear[6]. Taking, for instance, an economy with two sectors, urban and rural, the former producing manufactured and the latter agricultural goods, we isolate just two cases out of numerous possibilities, with a view to showing how one *can* argue against protection even when there is "surplus" labour at a positive wage. We shall treat the two sectors as isolated from each other, with no mobility between them and trade the only link. The rural sector has surplus population and employment at a positive wage which is fixed in terms of, and spent on, a bundle of agricultural goods[7]. Two cases can then be distinguished, varying according to the type of institutional system in agriculture. *Case I* : Where landless labourers are employed for a wage equal to the marginal product > 0, while the shadow wage is zero (or less than the actual wage), then clearly the output of agriculture is too low. The optimal policy in this case is to seek ways of reducing the effective wage in the rural sector. Free trade, in the absence of any ground for an optimum tariff, still continues to be the best policy to adopt. This case can be illustrated with the standard geometrical tools (which assume a specific income distribution[8]). The isolation of the two sectors implies a production possibility curve of shape PQ'P'' (Figure 1). Free trade, at given foreign price-ratio T, brings the economy from indifference curve I^0 to indifference curve I'. If the divergence between zero and actual wage were eliminated the point Q would shift to Q' so that PQ'P'' would be the new production possibility curve and free trade would bring the economy onto indifference curve I''. Protection in this economy would be disastrous. The only way

4. W.A. Lewis, "Economic Development with Unlimited Supplies of Labour," *The Manchester School of Economic and Social Studies*, May 1954.

5. H. Myint, "Infant Industry Arguments for Assistance to Industries in the Setting of Dynamic Trade Theory," paper presented to the Conference on Trade in a Developing World, sponsored by the International Economic Association, Brissago, Switzerland, September 1—9, 1961.

6. A large number of cases have been investigated in a forthcoming paper by myself and V.K. Ramaswami. Here I confine myself to two cases only.

7. If the wage is fixed as a bundle of agricultural *and* manufactured goods, the conclusions reached here break down and protection *could*, under certain specified values of the relevant parameters, be beneficial.

8. J. Bhagwati, *op. cit.*

of generating higher real income is to remove the divergence between the actual and the shadow wage in the rural sector[9].

Case II: Where, however, there is no employment in the rural sector for landless labourers, and the system is that of peasant family farming, it would be more plausible to argue that the wage equates the average product of labour > the marginal product of labour and the marginal product already equals zero. In this situation, the agricultural output is already at the optimum; and the specific wage-accounting method employed has no effect on the level of production. No intervention is called for at all[10].
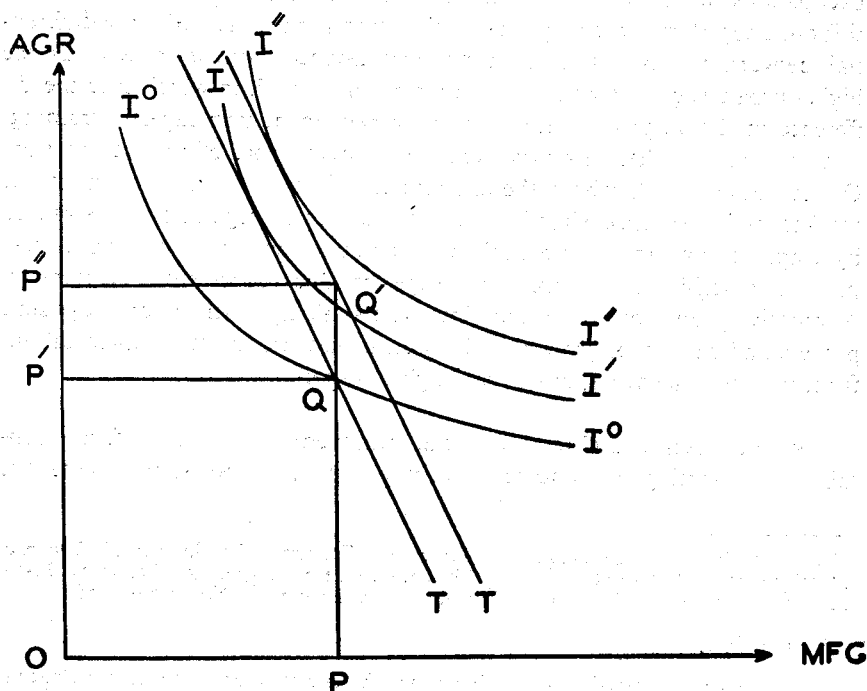

FIGURE I

II: Urban-Rural Wage Differential

A different argument is involved when it is contended that the presence of a wage differential between the urban and the rural sectors, which is unfavourable to manufactures (urban sector), justifies protection[11] of manufactures. Such a conclusion, however, is unwarranted and Hagen's celebrated analysis[12] is at fault in certain crucial respects[13].   Before I state the reasons why Hagen's analysis errs, it is necessary to point out that one must know why the differential obtains before one can regard it as a "distortion". Some conditions under which it would *not* represent a distortion come readily to mind: 1) the wage differential may reflect a scale of preference between occupations in the two sectors urban and rural; there is no reason to rule this out altogether as even a partial explanation of the observed wage differential between the two sectors in underdeveloped countries[14]; and, 2) the higher urban wage may be due to training and/or skill, in which case the difference in the wage is a return to investment in human capital (training) and/or a rent (skill); this may very well provide part of the explanation. On the other hand, where the differential reflects an imperfection of the market, as for instance when it is due to trade union regulation or is caused by employer attitudes ("prestige" or "humanitarian" motives) which may prompt a self-imposed minimum wage, it does represent a distortion. Alternatively, one could even superimpose a static agrument upon a dynamic process and claim that growing industries, if they are to attract away labour from the other activities, must pay higher wages[15].

Where such a differential in the remuneration of any factor obtains, representing a genuine distortion, it can be shown that the

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[11].   R.E. Baldwin, "Exchange Rate Policy and Economic Development," *Economic Development and Cultural Change*, July 1961. *See also*, E.E. Hagen, "An Economic Justification for Protection," *The Quarterly Journal of Economics*, November 1958.

[12]. E. E. Hagen, *op. cit.*

[13].   An extended analysis of the problem and a fuller discussion of the error in Hagen's analysis are presented in the paper by myself and V.K. Ramaswami. *Op. cit.*

[14]. I take Myint (*op. cit.*, p.5) to refer to this when he argues that "we may question how far the complex historical and dynamic factors which enter into movement of labour from the subsistence agricultural sector to the urban industrial sector can be satisfactorily analysed in terms of rather simplified static analysis".

[15].   Myint has a specious argument in his analysis of the urban-rural wage differential problem. He claims that the differential can be corrected not merely by protection(which is fair enough) but by "subsidizing various policies to raise the productivity of labour" (H. Myint, *op. cit.*, p.6) in the agricultural sector. This prescription goes *outside* the frame of reference of model being used. What Myint is doing is to set up now an *alternative* way of using resources, namely investing in agricultural education and better agricultural techniques. It may be that improving the technical knowledge of the peasants may have very high returns; but this has nothing to do with the question of whether an urban-rural wage differential leads to a non-optimal restriction of the scale of the manufacturing sector, given the technical knowledge.

marginal rate of transformation between agriculture and manufactures diverges from the market price ratio[16]. This divergence understates the social profitability of transforming agriculture into manufactures if manufactures have to pay the higher wage. It follows that a measure which eliminates this divergence will increase welfare. However, protection does *not* do this. The "second-best" optimum is secured by equating the domestic rate of transformation with the foreign rate of transformation and the domestic rate of substitution in consumption. The wage differential destroys the equality between the foreign rate of transformation (FRT) and the domestic rate of substitution (DRS) on the one hand, and the domestic rate of transformation (DRT) on the other. Protection could equalize the (FRT) and the DRT but would destroy the equality of the FRT with the DRS; hence, it cannot be demonstrated to be either the "second-best" solution, or even a better solution except under certain specific circumstances. However, a tax-cum-subsidy-on-domestic-production measure could equate the DRT, the FRT and the DRS and thereby achieve the "second-best" solution and hence be necessarily one which improved welfare.

An identical argument applies, of course, to differentials in the remuneration of *any* factor. Myint argues, for instance, that interest rates are higher in rural than in urban areas and that, therefore, the net effect of the wage and interest differentials would depend on the relative capital-labour ratios in the two sectors and the relative sizes of the wage and the interest gaps[17]. Myint's conclusions, however, must be qualified in so far as the higher interest rate in the rural areas reflects greater risk.

III: Coordination of Investment Decisions

A divergence between the market (private) and the shadow (social) rates of transformation justifying intervention, which may arise in a typical underdeveloped country with insufficient channels of entrepreneurial communication has not yet been emphasized in the literature on *trade* theory[18]. Assume, for instance, an economy which imports machines. It may have

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[16].   E.E. Hagen, *op. cit.*

[17].   H. Myint, *op. cit.*, p.5. The value of a machine divided by the rate of interest gives the rental on the machine which is equated to the value of the marginal product. Hagen himself cites this interest differential (*see*, E.E. Hagen, *op. cit.*). It should be noted, however, that whereas the interest differential, working in the opposite direction to the wage differential, reduces the divergence between the social and private rates of transformation, its net effect is to push the feasible production possibility curve still further inwards to the origin. From the viewpoint of being on the production possibility curve which the first-best conditions would enable the economy to attain, it is actually necessary for the interest differential to be working in the same direction as the wage differential and to be of the same size; though, of course, the private and social rates of transformation will definitely diverge more now than in the case where there was only the wage differential.

[18].   J. Bhagwati, *op. cit.*, p. 21.

excellent iron and coal deposits which would make the domestic production of machines economically competitive in relation to foreign prices. However, no machines are produced domestically because there is no production of steel at home; and no steel is produced because there is no machine industry at home. Lack of coordination of investment decisions, thus, leads to a divergence between private and social rates of transformation between other things on the one hand, and the complex of coal, iron, steel and machines on the other[19]. This argument is of obvious significance where input-

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[19]. It may be noted that, to make this argument plausible, we would have to assume that a single entrepreneur will not do everything; or else he could develop the whole complex himself. To make this assumption tenable, we would have to assume two things: i) investment in these activities must be characterized by "indivisibilities", calling for quite considerable resources; and, ii) no single entrepreneur should be in a position to secure the necessary resources, as is plausible in the context of the financial markets of the underdeveloped countries. Diagramatically, the economy could be shown to have the divergence between private and social rates of transformation at a point of specialization on "other things"; and the possible advantage of protection, in pushing the economy along to the production of the complex of steel and machine could be demonstrated along well-known lines, as in G. Haberler, "Some Problems in the Pure Theory of International Trade," *Economic Journal*, June 1950. Of course, the optimal policy again is a tax-cum-subsidy measure which equalizes the DRT, the FRT and the DRS. It should be noted that the argument presented here has nothing to do with the question of the difference between "marginal" and "total" condition of welfare maximization which are opened up by the presence of concavities in the production possibility curve. In the accompanying diagram, for instance, the economy may move from indifference curve I to I' when trade at the price-ratio given by line T becomes possible. However with the same price ratio and going still further along the production possibility curve to B would have taken the economy onto indifference curve I", and, hence to a still higher level of welfare. Protection, raising the internal price of manufacturing in the diagram, would provide the jolt which may be necessary, in this case, to push the economy into the superior position which enlarged production of manufactures makes possible.
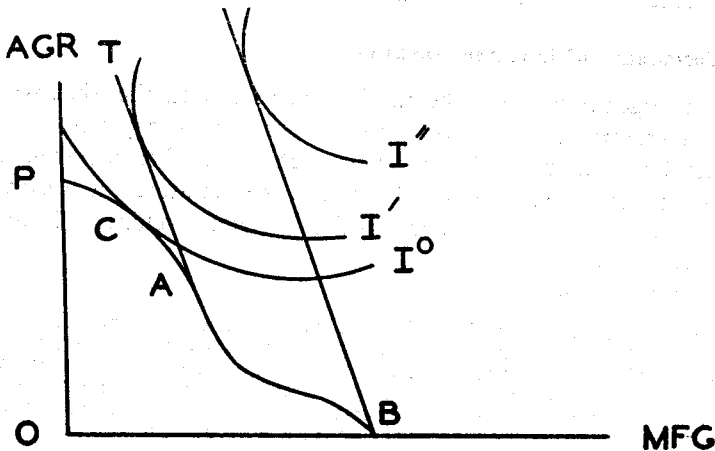

FIGURE 2

output relations are involved and could provide support for protecting the manufacture of producers' goods and intermediate goods; though, once again, the optimal policy in such a situation would appear to be a coordinated programme for investment in this complex of activities.

IV: The Volume of Savings

Protection is sometimes advocated so as to increase the quantity of savings. Two varieties of arguments can be distinguished. 1) If the quantity of savings in an economy is made, for instance, a function of the distribution of market-imputed income, it is conceivable that the allocation of resources brought about by the imposition of protection may generate a higher quantity of savings although the effect on net income is detrimental. This is an argument which has been embedded in the classical controversies concerning the meaning of gains from trade when the incomes of different factors are affected differently by the adoption of free trade; and it has been recently popularized, since the early work of Galenson and Leibenstein, by several writers on investment criteria. The real objection to this prescription, which amounts to recommending inefficient production to generate a higher quantity of savings, is that it is far more sensible to adopt efficient methods of production and to use the fiscal machinery to secure the required savings which should be easier to obtain in view of higher real income. This objection, however, may not be relevant if the fiscal apparatus is inadequate for the task, as is sometimes the case in underdeveloped countries. Moreover, one must also reckon the cost imposed by the imposition of taxes to raise the level of savings; taxes both need resources to collect them and introduce "distortions" involving real cost. 2) An alternative line of argument is sometimes used. It is argued often that certain "inessential" consumer goods should not be allowed to be imported. Where the demand is for ruling out such imports while permitting domestic production thereof, there is nothing but a simple confusion involved concerning the question of efficiency in deciding what to produce at home and what to import. Where, however, the demand is for the elimination of both domestic production and imports of "inessential" items of consumption, the argument is at a more serious level. It is primarily a matter of social valuation, about which there can be little argument on a professional plane among economists. It may be argued that, on social grounds, it is necessary, when supporting an austerity programme, that anything approaching conspicuous consumption needs to be ruled out. However, this policy has often been sought to be justified on economic grounds as well. One argument, which is relevant here, is that, when certain goods are not available, the alternative is saving so that, by removing them from the market, one increases the level of saving. The objections to this argument are two-fold: i) although this may be true over relatively short periods, obviously the incentive to save will be reduced if this policy is expected to

continue for long and other avenues of expenditure will be found; and, *ii*) it would be far simpler and surer to use the fiscal machine to increase savings to the desired level (though, once again, this may not be feasible with the administrative facilities in some underdeveloped countries[20]).

V: Infant Industry Case

The case for infant industry protection is now generally admitted. It is also understood to rest on the presence of economies external to the firm. For, if the benefits accrue to the firm at some future date, it would be possible to argue that the firm would be able to recoup any losses that it would have to incur in the early years and no protection would, therefore, be necessary[21]. A favourite example of such an external economy, justifying protection, is the training of labour.   Since a firm cannot purchase slaves for training but must train people who may be competed away by rival firms, the return on any cost of training labour will be imputed away to the labour itself, and, hence the firm will not be in a position to recover this cost.   Of course, it should be noted that it might be preferable, if the external economy took such a form, for the government to subsidize the training of labour rather than to grant protection to industry in general.

One considerable advantage which the conferment of protection to domestic industry entails has so far been missed by the writers on trade theory. Much comparative advantage in modern industry is the result of better knowledge and techniques, rather than differences in factor or resource endowments.   Protection, in such cases, by ruling out a foreign manufacturer from the domestic market, can induce him to set up manufacture in the domestic market, often in collusion with some domestic manufacturer, *at what turn out to be competitive prices*.   Protection, in this instance, is merely the catalyst which brings the foreign manufacturer, who does not wish to give up the protected market altogether, into the collaboration which is necessary for the domestic industry to be competitive.   The advantage is greater, of

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20.   Further analysis of the economic reasons why the ruling-out of certain inessential goods from the market may be desirable is to be found in J. Bhagwati, "Indian Balance of Payments and Exchange Auctions," *Oxford Economic Papers*, February 1962. *Also see*, I.G. Patel, "Trade and Payments Policy for a Developing Economy," paper presented to the Conference on Trade in a Developing World, sponsored by the International Economic Association at Brissago, Switzerland, September 1—9, 1962.

21.   Kemp has recently restated this thesis by arguing that a firm, which, having incurred the initial losses, secures the advantages itself instead of having to share them with other firms, needs no protection. I wonder, however, if too little is being conceded to the protectionists. If either firms or those who finance them have a preference for streams of returns which are stable over time rather than varying, even though both represent the same discounted current value at the going rate of interest, surely this provides a bias against new, infant industries which justifies protection.

course, to the extent that a net inflow of foreign capital is also stimulated[22]. Provided the protection afforded is limited to a specified period, long enough to make the collaboration attractive for the foreign manufacturer, this would appear to be a useful and beneficial policy[23].

Where the argument for protecting manufactures is cast in general terms, such as the higher rate of technical progress in industry or the effect of industrialization on the state of men's minds towards innovation, it is more difficult to evaluate it. If industry will experience higher rates of technical progress, one might quite well argue that this itself ought to make industry appear profitable, and hence, attract entrepreneurs to it. Arguments about the general ethos, however, are impossible to pinpoint and a cynic might argue that protectionists are now retreating into an area of discussion where one can easily reach any conclusion which one chooses to start with; though, of course, this set of considerations, which escape the economists' present expertise, may quite well be the most significant for policy purpose.

SECTION II

So far we have dealt with protectionist arguments which have to do with some of the features of modern, underdeveloped countries; naturally, these features do not obtain in all underdeveloped countries nor are they always confined to them[24]. But none of this type of argument has anything to do with problems raised by the fact of economic expansion[25]. One often finds in the underdeveloped countries that economists associated with planning for growth question the validity and/or utility of the welfare propositions of trade theory in the context of economic growth. We must, thus, carefully examine the question whether growth, *per se*, raises any difficulties concerning these welfare propositions[26].

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[22].   This assumes, of course, that a cost-benefit exercise shows that foreign capital at the margin brings gains.

[23].   It may be that, even though protection is not necessary after the establishment of domestic industry, the continuation of protection may make the domestic industry inefficient; hence, the desirability of its removal at some stage.

[24].   Thus, for instance, there are countries which are both poor and thinly populated. Similarly, the infant industry or the coordination type of problem that has been discussed could arise in richer economies.

[25].   The infant industry argument, it might be argued, necessarily involves growth. This, however, is not true. Just the same argument could be applied to a situation of given resources; the argument brings in time but *not* growth. The argument about the volume of savings again is a one-period argument and relates to the volume of savings, *given* the current resources; however, it does have an effect on the growth of the economy.

[26].   The following four paragraphs draw heavily on analysis presented by me elsewhere ("Some Recent Trends in the Pure Theory of International Trade," *op.cit.*).

It appears, in the first instance, that the mere fact of economic growth should not raise any tricky issues that bedevil the propositions that interest us. In principle, all that is called for is an application of the propositions both before and after economic expansion. This, indeed, is what the recent literature on growth and trade, to which myself, Johnson and other trade theorists have contributed, does. The argument is cast in these analyses in terms of an application of the propositions to the *marginal* increment in resources, so that certain theorems emerge concerning the allocation of investment when the increment in the (homogeneous) capital stock is autonomous. The method used is that of comparative statics.

Within this framework, the standard propositions that free trade is superior to no trade and restricted trade is superior to no trade certainly remain unscathed. So does the proposition that free trade is the optimal policy if no externalities or monopoly power in trade obtain. It must be noted, however, that these models, in discussing capital accumulation, abstract (deliberately) from those very difficulties that arise with the phenomenon of time and multiperiod optimality. 1) Since the increment in the capital stock is autonomous, the question of the optimality of the saving decisions that generated the total savings (and investment) is evaded. 2) Since capital is further assumed to be homogeneous, one also eliminates the problem of intertemporal optimality that arises with the fact that the current period's composition of the capital stock, which becomes the next period's factor endowment, will limit the range of outputs that are feasible in the latter period, and thus, affect, in this fashion, the entire time-profiles of output that are open to the economy in the future[27].

Do these sorts of difficulties affect the status of the welfare propositions listed here? Unfortunately, they do, in the same way as the introduction of (other) second-best variety of restraints. If perfect foresight does not obtain, no optimality can be read into individual decisions. The marginal utility of current saving, when spent later, is a function of how much others have saved, the pattern of current investment and such like factors which the individual has no means of guessing correctly. The Fisherian calculus of two-period equation of marginal utilities amounts to no more than an unverified description of how individuals save. Similarly, the pattern of investment chosen currently, while optimal in the current period, can be inappropriate for the kinds of demands that are to be generated later—unless perfect foresight rules again. Perfect foresight, however, is only a theoretical dodge. With the restraint of imperfect foresight in the world as we know it, we must face up to the fact that the welfare propositions of trade theory are no longer valid[28].

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[27]. J. Bhagwati, "Some Recent Trends in the Pure Theory of International Trade," *op.cit.*, p. 21.

[28]. *Ibid.*

However, it would be a non-*sequitur* to conclude from this analysis that efficiency in trade, when *planning* for capital accumulation, is not a meaningful or helpful concept. Planners do *not* worry about the optimality of the saving decision, treating it as a "political" matter. And they also plan in terms of a definite time horizon and assumed knowledge of the future techniques and trade possibilities and consumption patterns which comes to much the same thing as assuming perfect foresight. In this framework, the welfare propositions of trade theory certainly retain their validity. Thus, for instance, recent models[29] of efficient capital accumulation demonstrate, for a closed economy, how an optimal time-path of outputs can be formally defined, which *maximizes the quantity of terminal capital stocks*, given 1) the initial conditions, 2) the time-horizon over which the plan extends, 3) the time profile of consumption in each year of the plan period, 4) the available technology over the period, and,5) the structural composition of the terminal capital stocks (for instance, the ratio in which they are to be held). In such models, the problem of optimality of saving decisions, either at individual or aggregative level is evaded; so also, the question of getting different investment decisions to synchronize in relation to future demands is solved by the assumption of perfect foresight by the planning authority and the setting of a time horizon by it. It is possible, in these models, to demonstrate the welfare propositions of trade theory. Thus, it is possible to show, for an open economy, that free trade is superior to no trade, (restricted trade is superior to no trade and an optimum tariff is superior to free trade), in the sense that free trade will lead to a *greater* quantity of terminal capital stocks than no trade, *while satisfying the same time-profile of consumption.*

Certain important insights follow from this way of looking at the welfare propositions of trade theory. One theorem that emerges is that the efficient pattern of trade (and domestic production) for any one period cannot be determined except as part of the determination of the efficient time-path over the *entire* planning period. Reflection upon this theorem suggests that an important reason for protection may be furnished when the government, having worked out the time-path of investment and output that is desirable on the criteria just proposed, must get the private sector's economic behaviour to conform to the desired solution. Private expectations may define a market rate of transformation which is different from the social (plan-determined) rate of transformation, justifying intervention. This sort of situation is likely to arise, in the context of underdeveloped countries starting on programmes of development, when big increases in the rate of investment, transforming the structure of the economy in most cases, are called for. The outstanding case in point is the heavy industry in India which has a rationale

29. R. Dorfman, P.A. Samuelson, and R.M. Solow, *Linear Programming and Economic Analysis.* (New York: McGraw Hill, 1958).

in the context of India's desire to step up her rate of investment and the limitation (in terms of less than perfectly elastic demand abroad) on export expansion; and yet, it is true that detailed working out of the plan for raising the rate of investment, with its implications for heavy industry, would not have conformed with the private sector's expectations (which were necessarily formed by *previous* rates of expansion). Of course, the best answer again would be for the government to step in as the entrepreneur, acting where the private sector fails to invest owing to the divergence between private and social rates of transformation; but the reliance on the private sector, where resorted to, would involve intervention which could take the shape of protection[30].

Two other implications of the capital accumulation and programming approach outlined here may be spelled out, for they are of some relevance in view of the widespread confusion underlying much thinking on these questions, mostly in the underdeveloped countries. 1) It is often thought that the traditional theory of comparative advantage advocates that a country ought to allocate its resources to produce (and export) commodities which are intensive in the use of its abundant factors. Thus, Chenery argues: "The Heckscher-Ohlin version of the comparative cost doctrine ... states that a country will *benefit* from trade by producing commodities that use more of its relatively abundant factors of production"[31] (my italics). This, however, is no more than a confusion between different theories of comparative advantage. The Heckscher-Ohlin theory is designed explicitly to explain the pattern of trade [32] and is to be understood as a hypothesis which focuses on relative factor endowments as the key factor in determining trade patterns. It has *absolutely nothing* to do with the question of efficiency in trade, which is dealt with by the branch of trade theory that is concerned with welfare propositions. There is nothing in the welfare propositions that a careful student of trade theory learns which would make him argue that a labour-abundant country *ought* to export labour-intensive items. This confusion has been the cause of much unthinking opposition to investment in "capital-intensive" heavy industry in countries such as India. But there is no excuse for it. What an economy ought to produce and what her pattern

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[30]. This seems to me to be a sensible way of stating the argument sometimes encountered that private entrepreneurs "tend to underinvest" in heavy industry and go after "quick profits" in consumer goods industries. As normally stated, these contentions appear difficult to accept; however, we have made out an acceptable case for the private "undervaluation" of heavy industry and for government intervention as an entrepreneur or, failing that, for encouragement of heavy industry.

[31]. H. Chenery, "Comparative Advantage and Development Policy", *American Economic Review*, March 1961, pp. 19-20.

[32]. J. Bhagwati, "Some Recent Trends in the Pure Theory of International Trade," *op. cit.*

of trade ought to be are entirely a matter of foreign prices, which determine the foreign rate of transformation for the country, and the structure of her supplies and demands which determines the domestic rate of transformation. When one deals with growth, in the manner suggested above, one's demands must be defined carefully and must include the demand for investment goods (which immediately brings in the question of long-term objectives)[33].   If, for instance, India desires to step up her rate of investment and if trade is expected eventually to prove to be a bottleneck for importing capital goods, any good economist will admit that it will become *economical* for India to produce the "capital-intensive" capital goods at home: the exact phasing of the programme depending upon the values of the parameters in the specific empirical situation.   2) Another sort of confusion, which occurs at the other extreme, is that the establishment of heavy industry is advantageous because it economises on foreign exchange more than any activity at a *lower* stage of production[34].   It has been argued, for instance[35], that if a plant for making fertilizer plants (EPP) were established, then the (growing) population could be fed with a lower expenditure of foreign exchange than if fertilizer plants (FP) (or fertilizers or corn) were imported. This argument is untenable since it is thought that the FPP is more import-saving *because* it produces FP's which, in turn, lead to a growing annual supply of fertilizers.   A proper comparison would be as follows: say that we set aside a given amount of foreign exchange for importing an FPP or an FP   If the former is imported, we will get FP's produced from it in the next period; if the latter is imported, it will produce fertilizers.   We, thus, have the choice of *either* importing an FPP now and producing an FP in the next period while using exchange in the next period to import fertilizers *or* importing   an FP now and producing fertilizers in the next period while using exchange to import the FP's.   The choice will, thus, depend upon the differences between foreign and domestic rates of transformation   between FPP, FP and fertilizers; the fact that an FPP   produces FP's (while an FP produces fertilizers) is irrelevant.   A similar fallacy turns up when planners sometimes argue that the import of consumer goods is detrimental and then   proceed to invest in domestic capacity to produce the same consumer goods[36].   The

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[33].   H. Chenery, *op. cit.*

[34].   I am indebted to an unpublished paper of I.M.D. Little for drawing my attention to this particular source of the fallacy (*see*, P.C., Mahalanobis, "Science and National Planning", Anniversary Address to the National Institute of Sciences of India, *Sankhya*, Vol. 20, 1958). Although, it was generally widespread a few years ago in India, it is probably admitted by the more sophisticated to be a fallacy now.

[35].   P.C. Mahalanobis, *op. cit.*

[36].   J. Bhagwati, "Indian Balance of Payments and Exchange Auctions", *op. cit.* In fact, in view of the general tendency to change one's mind about the desirability of individual consumer items (e.g., witness the excess capacity in refrigerators, etc., in India when raw materials are withheld from these industries), it would be more sensible to import consumer goods and shut off their imports when deemed necessary instead of allowing capacity to be put up for equivalent production and then withholding inputs and creating excess capacity.

fact that some item is a machine tool or a machine or a consumer goods does *not* imply that it should be *either* necessarily imported *or* necessarily produced at home. It is all a matter of relative rates of transformation and, where these are assumed identical between home and abroad, the solution about the composition of imports and domestic production is, generally speaking, not unique.

SECTION III

So far the arguments have been concerned with protection and comparative advantage in the underdeveloped countries; and with the meaning and the role of the theory of comparative advantage (in its welfare aspect) in the context of growth and planning. However, in the case of the latter analysis, it was assumed that the inducement to invest was strong enough to absorb the available savings. This is an assumption which has recently been rejected by some writers, principally Hirschman[37] and Myrdal[38], who then proceed to relate protectionist policies to the inducement to invest.

Myrdal, for instance, has argued that the prohibition of imports creates an immediate market for domestic entrepreneurs. Hirschman has made this argument appear more cogent by arguing that "imports still provide the safest, most incontrovertible proof that the market is there"[39]. A tariff policy, imposed on this criterion, seems to me to be unnecessarily expensive; what experience in those countries that have development plans seems to have shown is that it is enough to have a plan for development to generate the expectations and ambitions that lead to investment to partake of the benefits that growth brings. This is not to deny that there may be countries where the entrepreneurship is far less responsive than in India, and where moreover the willingness on the part of the State to step in itself as an entrepreneur has been inhibited by ideological reasons[40] for such countries, clearly the policy of protecting domestic markets by ruling out imports might be the only way of setting about to solve the problem of developing a sufficient amount of entrepreneurship to sustain the process of growth. It should, however, be noted that tariffs imposed for such reasons ought to be taken off as soon as the process of expansion is underway; in view of this, it might

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[37]. A. Hirchman, *The Strategy of Economic Development.* (New Haven: Yale University Press, 1960).

[38]. G. Myrdal, *An International Economy.* (New York: Harper & Brothers Publishers, 1956).

[39]. A. Hirchman, *op. cit.,* p. 121.

[40]. The agrument is sometimes advanced that it is inconsistent to advocate greater State entrepreneurship when private entrepreneurship is lacking seems to me to be invalid. The State can take greater risks and has to take less. Civil servants may be bad entrepreneurs; but they are not always so and further they are at least entrepreneurs.

perhaps be worth considering the classical preference for subsidies as a measure for encouraging entrepreneurship.

Hirschman's argument for promoting industries with several "linkage" effects[41] leads to a similar prescription whenever the industry in question happens to be competing with imported goods. Once again, this whole approach seems to predate the real problems that face countries with plans for development, where the question is no longer how to get people to invest but how to use efficiently the resources that the feasible level of savings (plus foreign aid) provide: a question which has been discussed at length in the earlier sections.

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41.   H. Mynit, *op. cit.*, p. 7.