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Protection and Economic Development

By

Syed Nawab Haider Naqvi

PAKISTAN INSTITUTE OF DEVELOPMENT ECONOMICS
OLD SIND ASSEMBLY BUILDING
BUNDER ROAD, KARACHI
PAKISTAN

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PROTECTION AND ECONOMIC DEVELOPMENT

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It is proposed in this paper to investigate, at a
theoretical level, the nature of the relationship between
commercial policy and the allocation of domestic resources,
and evaluate he relative effectiveness of the former in
influencing the latter, as compared with the other policy
instruments available to the government.

Tariffs, quotas and other import restrictions have
been suggested in some writings on development policy and
have actually been used by governments as the primary policy
instruments to initiate and accelerate economic development.
One of the most common economic argument for protection, at
the theoretical level, has been that, if the allocation of
investment resources among alternative opportunities is not
pareto-optimal because of a divergence between private and
social costs and benefits, free trade will lower the country's
welfare by comparison with an ideal resource-allocation policy.
Such a divergence may be caused by external economics (or
diseconomies) in consumption or production or by the presence
of monopoly elements in domestic production or it may be due
to a wage-differential between agriculture and industry, or
"disguised" unemployment in the rural sector (The argument, will

referred to hereinafter as ⌊ the welfare-economic case for
protection). The other basic economic argument for
protection is that, because of a wide differential
between the private rate of discount and the social
rate of discount, free-trade policy may lead to a sub-
optimal allocation of domestic resources. (This will be
referred to hereinafter as the "growth" case for pro-
tection).[1/]

    The main contention of this paper is that when
"distortions", due to whatever reason, occur in domestic
production, protection will fail to remove them; instead
a policy of taxes and subsidies on selected lines of
production will do the job.[2/] The main source of error in
the protectionist arguments is that, when considering
the problem of choosing the best policy instrument to
achieve the desired investment pattern, the range of
policy alternatives has been limited to policies influenc-
ing foreign trade only-that is, to a positive tariff, or
a negative tariff (subsidy) or a zero tariff (free
trade). This limitation on the range of alternatives has
obscured the point that, in a given situation, the best
policy instrument may fall outside this range. The range
of alternatives has to be expanded to include the whole
spectrum of policy instruments available to policy-makers.

1/ For a convenient summary of both the "welfare" and the
"growth" arguments for protection see, My int ⌊31⌋.
However, my main sources of inspiration are Meade ⌊28⌋,
Bhagwati and Rama Swami ⌊5⌋ and Harry Johnson ⌊16⌋.
Johnson's recent contribution ⌊18⌋ became available
to me after I had written the original version. However,
it helped me considerably in clarifying some important
points.

2/ This statement is subject to one important qualification:
it is possible to get the effect of a tax on industry A,
by subsidizing industries B,C,D,.......

In general, when considering the problems of the optimization of trade and the maximization of domestic production, it must be borne in mind that, although in a general-equilibrium framework each policy instrument has some influence on every possible "target", yet to each "target" there corresponds a specific policy instrument (or a combination of policy instruments) that is optimal.[3] Such an approach to economic policy-making may not be applicable in very underdeveloped countries, where fiscal and other policy instruments are too "weak". In that event protection may be the only feasible and effective policy alternative open to the government. However, in countries like Pakistan and India, where several policy instruments are available, the government must decide not only on the optimal use that can be made of a given policy instrument in different situations. It must also decide on the optimality of that policy instrument in a given situation. This latter decision forms the crux of economic policy-making.

The discussion in this paper will be divided into three sections. The first section will outline and evaluate the welfare-economic case for protection. The "growth" case will be examined in the second section, while the third section will conclude this discussion.

For the purposes of this discussion, protection is defined to cover all policies that <u>raise domestic prices</u>

3/ See Jan Tinbergen /¯38_/ . An extensive application
of this approach to international-trade policy is
contained in James E. Meade /¯27_7; see also Chenery
/¯10_/.

above world prices, both for domestic consumers and
producers.[4]

The Welfare-Economic Argument
Pareto-optimum conditions in a "Closed" Economy

Welfare economics is primarily concerned with specify-
ing the necessary and sufficient conditions that maximize the
community's total welfare. For a "closed" economy, these
conditions are satisfied when the social marginal rate of
substitution between any two goods produced or consumed or
factors utilized is equal to the corresponding social marginal
rate of transformation, with both equal to the common domestic
price ratio. When this equality holds total welfare is maxi-
mized because consumers will then have no incentive to shift
their expenditure among different commodities and producers
will likewise gain nothing from any reallocation of invest-
ment among different lines of production.

It has been shown[5] that given the standard "first-best"
assumptions - pure and perfect competition both in the
commodity market and the factor market, convexity[6] and the
objectives to maximize profits and utility - competitive free-
market forces will be sufficient to realize the above equality.
This is so because, when these assumptions are satisfied,
market prices of various factors reflect opportunity cost

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[4] This definition of protection is basic, because it is
important to distinguish between protection by import
restriction (the sense in which the term is used in this
paper) and protection by subsidizing domestic industries.
The main distinction between these two forms of protection
is that while protection by subsidy raises the domestic
prices to producers only, it leaves consumers free to buy
imported goods at international prices, while protection
through import restriction raises domestic prices both to
consumers and producers. See Harry Johnson /18/p.6

[5] For a geometrical derivation of these conditions see,
F.M.Bator /_/, pp.22-59. For a lucid verbal discussion,
see William J. Baumol/4/.

[6] The "convexity" condition requires that returns to scale
for proportional expansion of inputs be constant (or at
least falling), and that issoquants and indifference
curves be "convex to the origin". Mathematically, "convex-
ity" obtains if a straight line connecting any two feasible
points does not anywhere pass outside the set of "feasible"
points. See Bator / 2_/ p.45.

in alternative uses, since the above assumptions rule out externalities in consumption and production or the presence of any monopoly elements. No state intervention is called for to achieve maximum welfare.

Pareto-Optimum Conditions in an "Open" Economy

In an "open" economy free trade will be sufficient to achieve social optimum if, in equilibrium, the domestic social marginal rate of substitution between any two goods or factors will equal the corresponding domestic social marginal rate of transformation and at the same time the social marginal rate of transformation through foreign trade - i.e., the rate at which imports can be obtained in international exchange for varying quantities of exports.

It may be instructive to see exactly what does this rule mean. Assume that the foreign price ratio is fixed. This implies that the foreign rate of transformation is equal to the foreign price ratio. Now we know that, assuming zero transport costs, free trade equalizes domestic and foreign price ratios. But we have already seen that domestic social marginal rate of transformation is equal, in equilibrium, to the domestic price ratio. It follows that the domestic social rate of transformation is, in equilibrium, equal to the foreign rate of transformation. It also follows that both these rates of transformation will equal the domestic social marginal rate of substitution. We have thus proved that free trade is sufficient, by itself, to maximize world welfare on the standard "first-best" assumptions. [7]

This reasoning underlies the two well-known propositions in the welfare theory of international trade that (a) free trade is superior to no trade, and (b) restricted trade is superior to no trade. [8]

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[7] In an "Open" economy it is also necessary to preclude any international external effects in production and consumption. For a fine discussion of this topic see Graff /12/.

[8] The first proposition was demonstrated by P.A. Samuelson /34/. The second proposition was demonstrated by M.C.Ken /20/. For a detailed discussion of this point see, J. Bhagwati /6/, and also Gottfried Haberber /13/.

Departures from the Pareto Optimum

However, it has been noted in the literature on welfare economics that external economies (and diseconomies) in domestic production, monopoly in the product market or in foreign trade, factor-price rigidities, increasing returns to scale and inter-sectoral wage-price differential will prevent free trade from achieving the social optimum. Hence, state intervention will be required to maximize social welfare.

To see this clearly, let us note two basic things about the nature of the ideal free-trade solution under the first-best assumption referred to above. First, the classical theorem that free trade maximizes the world welfare should not be taken to mean that it will maximize each country's welfare also. In terms of the Edgeworth box diagram, what free trade does is to enable both parties to trade to land on a contract curve, which is a <u>locus</u> of an infinite number of points where world welfare is maximized, such that a movement away from it involves a deterioration in each party's welfare. However, free trade does not help in picking out the optimum <u>point</u>. In other words, what the classical theorem proves is that with free trade each country will be better off in equilibrium <u>than in the absence of trade.</u> It does not prove that each country's gain will be a maximum under free trade. Secondly, and this follows from the first, considering from one country's point of view, it is always profitable to move along the contract curve to the opposite end of the box. However, this necessarily involves an improvement in one country's welfare <u>at the expense</u> of the other country. In other words, it is not true that free/maximizes the welfare of each country
_{trade}
engaged in international trade in the sense that it forecloses the possibility of any movement along the contract curve. As a matter of fact, the maximum gain for one country

will be achieved when the other country's gain is zero
(However, the other country's gain cannot become negative
since it is not possible to go outside the "box". In plain
language, if the other party's gain were to be negative, it
would not enter into international trade at all). [10]

The theory of optimum tariffs specified the precise
conditions that set limits on the extent to which one country
can profitably move along the contract curve to the other
end of the box - that is, the extent to which one country can
gain at the expense of the other country by imposing a tariff
on trade. It is a well-known proposition in trade theory that
so long as the foreigner's offer curve is not a straight line
from the origin - that is, so long as the foreigner's reciprocal
demand for a country's exports is not infinitely elastic - it
is possible for one country to increase its welfare by
"twisting" its offer curve, that is by imposing a tariff
on its exports and imports. The tariff will be optimum when
the "twisted" offer curve intersects with the other country's
offer curve at a point where the indifference curve of the
country imposing the tariff is tangent to the other country's
offer curve [11]. It follows that free trade is not the best
policy when a country has monopoly or monopsony power in
foreign trade.

Similarly, external economies (and diseconomies) in
domestic production make it impossible for private economic
units to appropriate, through ordinary pricing, the full
benefits emanating from their activities. Private profit-
ability will then differ from social profitability. Free
market forces will fail to achieve the social optimum
in domestic production. This cleavage between private and
social profitability strikes at the very roots of the

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[10] The discussion is based on Samuelson [35]. See also
Graff [12].

[11] See T. de Scitovszky [36]. It should, however, be noted
that exporters must have a collective monopoly power but
compete on foreign markets. If they cartelize the domesti
market, only that makes the situation worse.

decentralizing efficiency of that regime of signals, rules
and built-in sanctions that defines a market system. Conscious
government policy is, therfore, required to reconcile this
conflict between private and social interests, resulting
from "market failure"[13].

Domestic and Foreign-Trade "Distortions"

The common characteristic of all these forces, which
disrupt or weaken the allocative efficiency of the pricing
mechanism, is that they destroy the optimum-securing eqality
among the domestic social marginal rate of substitution, the
domestic social marginal rate of transformation and foreign
social marginal rate of transformation. In other words,
these forces introduce "distortions" in the economy that
prevent free-market froces from maximizing the community's
total welfare.

External economies (or diseconomies) in domestic
production, inter-sectoral wage-price differentials, monopoly
in domestic product market, and other circumstances of this
sort destroy the equality between the domestic social marginal
rate of substitution and the domestic social marginal rate of
transformation. This inequality, referred to hereinafter as
domestic distortion", means that free market forces, by
themselves will fail to guarantee that factors of production
will be combined in optimal proportions to produce the
optimal mix of goods "desired" by the society.

Similarly, if domestic exporters enjoy a monopoly in
the foreign market (while in pure competition with each other in
the domestic market) because the foreigners' reciprocal
demand curve facing them is imperfectly elastic, the optimal
equality between the domestic social marginal rates of

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[13] This reasoning, taken by itself, is fallacious; for
the mere fact that market mechanism fails does not mean that
government can always be expected to do better. Hence, to
justify government intervention for the attainment of specific
social policy goals, it must also be shown that government can
in fact do better than the market.

transformation and substitution and the foreign marginal rate of
transformation will be disrupted.[14] This inequality,

referred to hereinafter as "foreign-trade distortion",

implies that a free-trade policy will cause the community's

total welfare to decrease by making the country pay more, in

terms of exports, for given amounts of imports than it would

have, had it exploited its monopoly position.[15]

The Welfare-Economic Case for Protection: An Evaluation

As shown above, both domestic and foreign-trade

"distortions" render free trade an inappropriate policy

for maximizing social welfare. According to the conventional

welfare-economic argument, protection is the "optimal"

policy in both these cases.[16] It will be shown that this

argument is fallacious. The mere fact that in a certain

situation free trade cannot guarantee the optimum solution

does not entitle us to conclude that protection can. All

14/ It should be noted that this result will hold only
     if exporters do not exploit the potential monopoly
     in foreign trade.

15/ The reason why free-trade policy may lead to a sub-
     optimal solution is easily explained. It was shown
     above that free-trade policy will lead to an optimal
     solution (i.e., the three basic equalities referred to above
     be satisfied) only when domestic exporters take the
     foreign price ratio as fixed. When foreign prices vary
     increased exports will normally lead to a fall in export
     prices; also increased imports will tend to raise the
     foreign prices of imports. Hence, free-trade policy will
     lower social marginal revenue from exports and increase
     social marginal costs of imports. It follows that a
     tax on exports and on imports set at the right rate,
     will increase   social revenue and lower social costs.
     Thus a tax on foreign trade is the optimal policy in
     order to restore the optimum-securing string of equalities
     among the domestic marginal social rate of substitution,
     the domestic and foreing social marginal rates of trans-
     formation, when foreign prices are no longer fixed
     because exporters (importers) enjoy a monopoly (monopsony)
     power in the foreign market. This is the rationale of the
     optimum-tariff argument for protection, referred to above.

16/ For instance, see Haberler $\angle$ 13 $\_7$.

that we can validly conclude is that government intervention
is called for in such cases. However, the decision on the
particular **form** that this intervention should take will
depend on a consideration of the relative effectiveness of
all the policy instruments available to government. It will
be shown that whereas protection is the optimal policy when
distortion occurs in foreign trade, a subsidy (or tax) on
domestic production is recommended instead in the case of
domestic distortion. Each of these cases is separately
examined below.

The Optimality Criterion

The criterion for testing the optimality of any policy
instrument is its ability to remove the distortion in
question _without_ introducting any other distortion. This
is fundamental; for if a policy removes one distortion at
the expense of introducing another, then there is no _a_
priori way to test its optimality. This follows from the
Negative Corollary of the General Theorem of the Second
Best, which informs us that "there is no _a priori_ way to
judge among various situations in which some of the
Paretian conditions are fulfilled whole others are not
.........".[17]

We will now separately consider the case for
protection for each type of distortion in the light
of this criterion.

17/ See, Lipsey and Lancaster, /‾22‾7 .

The Case for Protection: "Domestic Distortions"

Let us assume that, because of any of the causes noted above, say external economies in production, the domestic social marginal rate of substitution (which under perfect compet. n is equal to the domestic commodity price ratio) is unequal to the domestic social marginal rate of transformation. Let us also assume that the domestic social marginal rate of substitution is equal to the foreign social marginal rate of transformation. The foreign price ratio is also assumed to be fixed for the domestic exporters and importers.

A free-trade policy will fail to remove this "distortion" in domestic production. This is easily seen. Free trade, assuming zero transport costs, tends to equalize the domestic price ratio with the foreign price ratio. By assumption, the domestic commodity price ratio is unequal to domestic marginal social rate of transformation. Also, by assumption, the foreign price ratio is equal to the foreign marginal rate of transformation.[18/] It follows that after the opening up of trade the domestic social marginal rate of transformation will become unequal to the foreign social marginal rate of transformation. Moreover, as before, the domestic social marginal rate of substitution will continue to be equal to the foreign social marginal rate of transformation and to deviate from the domestic social marginal rate of

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[18/] When the foreign price ratio is assumed fixed for domestic exporters and importers (either because it is in fact fixed or the country in question is too small in relation to the foreign country) it will be equal to the foreign marginal rate of transformation.

transformation. Thus free-trade policy will fail to
restore the optimum-securing equality. Hence, free trade
is a non-optimal policy when the distortion is domestic,
according to the agreed optimality criterion.

If an import tariff is imposed to remove the domes-
-tic "distortion", and is set at exactly the right rate,
domestic production will increase to the point where the
domestic social marginal rate of transformation becomes
equal to the foreign social marginal rate of transformation
(which is equal to the foreign price ration). However,
since by assumption the domestic marginal rate of substi-
tution was equal to the foreign marginal rate of trans-
formation before protection, the imposition of the import
tariff will now make them unequal.[19/]   Again, as protection
removes one "distortion" at the expense of introducing
another, protection is also a non-optimal policy, according
to the agreed optimality criterion. Furthermore, as both
free trade and protection are non-optimal policies, there
is no a periori way of prefering one to the other.

However, a subsidy (tax) on domestic production
for domestic consumption only, set at exactly the right
rate will increase (decrease) it to the point where the
domestic social marginal rate of transformation becomes
equal to the domestic social marginal rate of substitution.
Also since the subsidy (or tax), unlike import tariffs,

19/ This is because, unlike the free-trade case considered
above, tariffs will make the foreign price ratio un-
equal to (higher than) the domestic price ratio. Since
the domestic marginal social rate of substitution is
assumed equal to the domestic price ratio, it will
become unequal to the foreign marginal rate transfor-
mation (which is assumed equal to foreign price ratio)
after a protective tariff is imposed.

does nothing to distu the pre-existing equality
between domestic social marginal rate of substitution
and the foreign marginal rate of transformation, the
pareto-optimal string of equality is restored, signi-
fying the maximizationof total domestic welfare. It
follows that the policy of subsidizing (taxing) domestic
production, when domestic distortion exists, is the
optimal policy, (However, note that this result depends
on the assumption regarding the "neutrality" of the
taxes imposed to finance the subsidy in question.The signi-
ficance of this assumption is discussed in the concluding
section).

This result is intuitively obvious; whereas protec-
tion encourages domestic production, it also restricts
domestic consumption by raising the domestic prices of
imported goods. In other words, protection imposes a
"consumption cost" on the economy. On the other hand, a
subsidy on domestic production encourages domestic produc-
tion, but imposes no such "consumption cost". ence, the
latter policy is to be preferred to the former policy。[20]

(2) The Case for Protection: The "Foreign-Trace
Distortion"

Now, suppose that there is no "domestic distortion"
that is, the domestic social marginal rate of substitution
is equal to the domestic social marginal rate of transfor-
mation. Also, suppose that, unlike the case considered
above, the foreign prices of exports and imorts,or of both,
are no longer fixed for the country in question but vary.
This may be because the country enjoys a monopoly power
in the export market and a monopsony power in respect of
its imports,or bot . In such circumstances, as pointed out

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[20] This is so because a tariff is simultaneously a pro-
duction subsidy and a consumption tax. See Johnson
[19] on this point.

above, the marginal social revenue from additional exports
will normally be less t an the price and the marginal
social cost of additional imports will normally exceed
the price. ence domestic social marginal rates of
substitution and transformation (assumed equal to each
other) will differ from t e foreign social marginal
rate of transformation.

If a free-trade policy is pursued - that is, if
exporters and importers are not allowed to exploit their
monopoly and monopsony power respectively-country's total
welfare will not be maximized even though world's welfare
is maximized. Thus under free trade the domestic social
marginal rates of transformation and substitution (equal
to each other) will continue to differ from the foreign
social marginal rate of transformation. The free-trade
solution will, therefore, be non-optimal.

Unlike the previous case where "distortion" was
domestic, if distortion occurs in foreign trade a subsidy
on domestic production (for domestic consumption only) will
equalize the domestic social marginal rate of substitution
and the foreign social marginal rate of transformation but
will disrupt the pre-existing equality between domestic
social marginal rate of substitution and the domestic
social marginal rate of transformation.[21] Hence, according to
the optimality criterion noted above, both these policies
are non-optimal, as they remove one "distortion" at the
expense of introducing another. Also, there is no a priori
way of choosing between them; for it is like choosing
"between the devil and the deep blue sea."

[21] The reason for this inequality is that a subsidy on
domestic production will raise domestic prices to
domestic producers only. This higher price, while
equal to the domestic marginal social rate of transfor-
mation, will not be equal to the domestic marginal rate
of substitution. The two rates will, therefore, not be
equal to the common price ratio and hence unequal to
each other.

A tariff on exports and on imports or on both,
set_at_the_right_rate in order to exploit the potential
monopoly and monopsony power, or both, that the country
may enjoy over the other country will do the trick here.
While it will do nothing to disturb the pre-existing
equality between the domestic social marginal rates of
substitution and transformation, it will restore the
equalit between domestic social marginal rate of transfor-
mation and the foreign social marginal rate of transfor-
mation. (Recall that the latter rate is no longer equal
to the foreign price ratio since the international
prices are assumed to vary). Thus an optimum   tariff on
exports or imports, depending on whether the country enjoys
monopoly power in the export market or monopsony power with
respect to its imports, will maximize country's welfare.The
optimum-securing string of equalities will be restored and
the community's welfare will be maximized.

The policy implication of the above discussion can
now be summarized in the form of the following proposition:

Proposition 1: A subsidy (or tax) on domestic
production is the optimal policy when the "distortion" is
domestic; when, on the other hand, the "distortion" occurs
in foreign trade, [22] protection is the optimal policy.(This
proposition is extended below) [23].

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[22] It may be objected that it is perhaps illegitimate to
use the term "foreign-trade distortion" for the "non-
exploitation of a potential monopoly position". For by
the same argument an industry consisting of 100 firms,
not combined in a cartel, could be considered as suf-
fering from a "distortion" in selling, since its terms
of trade could be improved if it were to combine and
conspire in restraint of trade. However, even in this
case, the use of the term is quite legitimate if we
identify the welfare concept with the owners of 100
firms.

[23] For a similar conclusion See Meade [28], Bhagwati and
Krishna Swami [5],   Johnson has
stated this result more generally [18].

This should be intuitively obvious. All this proposition says is that the choice of the optimal policy must be dictated by the type of t e situation faced. It should also be noted that this proposition does not assert, for instance, that tariffs cannot be used to encourage domestic production. All it says is that a subsidy on domestic production can achieve this objective more directly and efficiently.

The Case for Protection: Distortion in Factor Use.

We now turn to an examination of arguments for protection that were considered by their authors as "dynamic" in contrast to the "static" - welfare arguments for protection considered above. It will be shown that these apparently dynamic arguments are essentially "static" and merely constitute special cases of the more general argument for protection evaluated in the last section. According to the static-welfare argument considered above, protection is the optimal policy to remove "distortion" caused by a divergence between private and social costs and benefits. The arguments for protection considered in this section differ from those examined in th previous section only in that these are based on the presence of a special type of domestic distortion - the distortion in factor use.

The main difference between these two sets of arguments lies in t e importance that each attaches to the divergence between private and social costs and benefits. Whereas the static-welfare argument of the previous section regards these divergences as temporary deviations from the

optimal situation and, hence, market prices reflect,
as a rule, opportunity costs; the arguments reviewed [24]
in this section regard these deviations to be the rule,
the optimal situation being an unattainable El Dorado.
Hence, market prices do not reflect opportunity costs. [25]
It is, however, obvious that whether this phenomenon is
temporary or permanent is a factual judgment and does not
affect the conclusions that follow from the presence of
this phenomenon.

There are two closely related but distinct argu-
ments, put forward by Lewis [21], and Hagen [14], that
recommended protection as the optimal policy in order to
correct the domestic distortion caused by the alleged
divergence between the marginal social rate of transforming
agriculture into manufacturing and the market price ratio.
According to Arthur Lewis [21], in under developed
countries in which the supply of labor is unlimited in
the rural sector the "shadow" wage of labour is zero
because of the alleged zero marginal productivity of
labour but the market wage is positive. In other
words, labour is actually paid a wage equal to its
average product, which is greater than its marginal
product. Lewis argues that if the comparative-cost
ratios are expressed in marginal terms, instead of in
terms of average costs, an underdeveloped agricultural [26]

24/ "........roughly and as a rule, the ratios of private
money costs do reflect the true social real cost ratio
.... there are exceptions to the rule, but... the
burden of proof is on those who maintain that the
exceptions are persistent, large, and last but not
least, practically recognizeable and calculable".
Haberler. [13], pp.237-38.

25/ See Chenery, [8] pp. 18-53.

26/ Comparative-cost ratios in traditional theory are
expressed in terms of average cost because, under the
assumption of constant costs, marginal costs equal
average costs. However, it has long been recognized
that, when increasing or diminishing costs prevail,
the comparative-cost ratios must be expressed in
terms of marginal costs.

country ought to specialize in manufacturing rather
than in agriculture. But since in actual practice wages
are paid according to average productivity, an under-
developed country ought to protect its manufacturing
industry.[27] But this argument is fallacious because it may
be that even after the necessary correction recommended
by Lewis the country may still have a comparative
advantage in agriculture. This cannot therefore be a
general conclusion.

Moreover, strictly speaking, the sort of
"distortion" referred to in the previous paragraph
does not necessarily justify protection. A more direct
approach in such a situation will be to reduce the rural
money wage or subsidize the urban money wage. Here free
trade continues to be the best policy. It is true that
practical expediency rules out the optimal solution, but
it is important to recognize that the policy of protection
is dictated by practical exigencies rather than by the
"failure" of the optimal solution.

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[27] "We assume that two countries can produce the same
things and trade with each other. A is the country where
labor is scarce, B the country where unlimited supply
of labor is available in the subsistence (food) sector.
Using the classical framework for comparative costs,
we write that one day's labor.
  in A, produces 3 food or 3 cotton manufactures;
  in B, produces 2 food or 1 cotton manufactures.
This, of course, gives the wrong answer to the question,
"who should specialize in which" since we have written
the average instead of marginal product. We can assume
that these coincide in A and also in cotton manufacture
in B. Then we should write in marginal terms that one
day's labour,
  in A, produces 3 food or 3 cotton manufactures;
  in B, produces 0 food or 1 cotton manufactures.
B should specialize in cotton manufacture and import
food. In practice, however, wages will be 2 food in B
and between 3 food and 6 food in A, at which level it
will be "cheaper" for B to export food and import
cotton. Lewis argue that to correct this divergence
between private money cost and true social cost (the
"shadow" wage), B should protect its textile industry.
Lewis /‾21_7, p.185.

Furthermore, because of this distortion in agricul-
ture, land gets less than its marginal productivity, while
labour gets more than its marginal productivity. Hence,
it might be desirable to subsidize land (if we can take
"land" to include capital in agriculture).

There is yet another point about the Lewis argument
that should be noted. The alleged distortion implies that
the social return on capital invested in agriculture
exceeds the private returns. Hence, as Johnson $\underline{/}$ 18 $\underline{7}$
points out, the distortion in the labour market may be
offset by an opposite distortion in the capital market.
The optimal policy will, then, be a subsidy on capital
invested in agriculture rather than a subsidy on labour
in industry.

Recently, Hagen has advanced the thesis that the
observed wage - differential between agriculture and
industry causes a domestic "distortion" - that is,
the private profitability of transforming agriculture
into manufacturing is lower than its social profitability.
He attributes this differential (urban wage higher than
the agricultural wage) to the "dynamic" need of the
economy of transferring labour from agriculture to
industry. This divergence, he argues, needs to corrected
through the protection of manufacturing.[28]

Hagen's analysis is faulty. First, contrary to
what Hagen claims, his analysis is essentially a special
case of the welfare - static argument reviewed in the last
section: the wage differential prevents market forces
from attaining the Pareto-Optimum in production.

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[28] " As a result of wage disparity, the manufacturing
industry will be undersold by imports when the
foreign exchanges are in equilibrium. Protection
which permits such industry to exist will increase
real income in the economy......"Everett Hagen
$\underline{/}$ 14 $\underline{7}$. A similar point of view has been presented
by R.E. Baldwin $\underline{/}$ 1 $\underline{7}$.

Second, Hagen's **argument** that protection is the optimal policy to realize the pareto-optimum in production is incorrect. By a reasoning similar to that underlying proposition 1, it can be shown that the alleged divergence in the rates of transforming agriculture into an industry and the market price ratio can be more directly and effectively rectified by subsidizing, rather than protecting(as Hagen argues) manufacturing activity.

Furthermore, it should be noted that, in the case analysed by Hagen, the "distortion" is caused by an inter-sectoral wage- differential. In other words, the rate at which labour and any other factor can be substituted for each other in different lines of production at the margin is not the same. Hence, a _subsidy_ should be given on factor-use in manufacturing rather than on total production.

This result suggests a modification of our proposition 1 as follows:-

Proposition 2: A tax (or subsidy) on factor-use is the optimal policy when "domestic distortion" is caused by inter-sectoral wage-differential.[29]

The rationale of this proposition should be intuitively obvious. The wage-differential between agriculture and manufacturing, referred to by Hagen, introduces two kinds of inefficiencies in the economy. First, it adversely affects production possibilities in the economy- i.e., the domestic production-possibility curve gets "contracted". Second, as pointed out above, it causes the social marginal rate of transforming agriculture into industry to differ from the market price ratio. Now,

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29/ Johnson /18_7 and Bhagwati and Krishnaswami /5_7 arrive at the same conclusion.

protection cannot remedy either of these ineffeciency,

A subsidy on manufacturing will rectify the second
but will fail to rectify the first inefficiency
inefficiency/. On the other hand, a subsidy on factor-use

will rectif both the inefficiencies - that is, will

help t e economy to attain the optimum optimorum and is,

therefore, the optimal policy when distortion occurs in

factor-use.

The Growth Argument

The previous discussio was conducted on "static"

assumptions. This, however, does not invalidate the
conclusions we reached there in the growth context.[30] The

upshot of the previous argument, to put it rather

simply, is that a "direct" remed should be preferred

to an "indirect" one, since the latter may also have unde-

sirable "side-effects". Subsidy (or tax) is to be preferred

to protection in cases where the problem is to remedy

an inefficient allocation of domestic resources, that is,

when t ere is distortion in domestic production, primarily

because protection is not only an uncertain remedy in

this case, but it also imposes additional "consumption cost"

on the economy that can be avoided if a direct subsidy

is given on domestic production.

However, even a subsidy on domestic production may be

inefficient if the distortion occurs in factor-use. In this

case the subsidy has to be confined to the factor in the

use of which the "distortion" occurs. It will be shown in

this section that these conclusions are valid even when

we are considering the "dynamic" arguments for protection.

As appointed out in the introductory part of this

paper, a genuine growth argument for protection should

[30] On this point see, Fritz Machlup/83/, where he argues
that the value of a theory depends on how realistic are
the conclusions that it points to, and not on the
assumptions on which it is based. Assumptions being
simplifications of reality are inevitably unrealistic.

be promised on a differential in the rate of discount
applied by a private enterpreneure and b the state to
certain projects. This may make it desirable for the [31/]
state to intervene. The classic case where such differen-
tial is relevant is the infant-industry argument for
protection.

But before we come to an examination of dynamic
argument of this sort, let us first consider the arguments
for protection advanced by Myrdal, Nurkse, Hirschman, and
Fleming. These authors consider import restrictions as a [32/]
necessary pre-condition of economic growth. The central
point of these arguments is that import restrictions by
creating an excess domestic demand for these goods generate
powerful incentives to produce them at home. According to
Myrdal, "..... import restrictions.... create a sizeable
internal demand for a specific commodity, without the
necessity of awaiting for the slow and difficult growth
of the entire economy." Hirschman, harping on the same [33/]
theme, provides another reason why import restrictions
should be used to ignite the industrialization process:
"Imports still provide the safest, incontrovertible proof
that the market is there... imports thus reconnoitre and
map out the country's demand.... thereby bringing closer
the point at which domestic production can be economically
started. (Italics mine).
Hirschman
The /argument is obviously fallacious. For to
prove that the "market is there" is not to establish the

31/ The reason why we use the word "may" instead of "should"
is that a project does not necessarily become socially
desirable just because private investors do not con-
sider that project profitable.
32/ For the relevant literature on the subject see Myrdal
/ 32_7 Nurkse / 33_7, Hirschman / 15_7 and Fleming / 26_7
33/ Hirschman / 15_7, p.121; Myrdal / 32_7, p.776.

case for the domestic production of imported goods. It may well
be that the country may have a long-run comparative disadvantage
in producing that good domestically.

Nurkse, Lewis, Fleming, have further elaborated on this
theme. One of the important obstacles bedeviling the home-produc-
tion of import-substitutes is the limited size of the domestic
market. As a spur for the expansion of the domestic market,
these authors have suggested the simultaneous setting up of
related industries, [34/] which should provide effective demand for
each other's products. It follows from this that protection must
be given to a large number of related industries simulteneously.

The hidden premise on which this argument is based should,
however, be noted. It is that capital is available in unlimited
supply. This is clearly a highly unrealistic premise, for the
shortage of capital is clearly one of the central problems fac-
ing underdeveloped countries and the acceleration of the rate of
capital formation is the central objective of development
policy in these countries.

Two more important variations on this theme should be
mentioned. It has been argued that heavier protection should be
given to capital-goods industries to maximize saving and invest-
ment as well as to reduce dependence on imports. In India this
view was put forward by Mahalanobis [25]. The reason why the
development of heavy capital-goods industries increases savings
is that, since these goods cannot be directly consumed, the
consumer is forced to save--a variant of the "forced-saving"
argument. Furthermore, this argument postulates that the ratio
of investment is an increasing function of the level of domestic
production of capital goods. Thus, protection accorded capital-
goods industries will promote saving and investment.

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[34/] While Nurkse and Lewis advocate the setting up of
horizontally-related industries, Hirschman and Fleming
emphasize vertically-related industries. Their respective
approaches to the process of economic growth are referred
to as the "Balanced Growth" and "Unbalanced Growth" doctrin-
-es, a pointless distinction that has led to much useless
debate, reminiscent of the wasteful controversy on the
equality of saving and investment in the late 30's.

Galenson and Leibenstein/1_7 have also advocated protec-
tion to increase savings. Assuming that the capitalist class does
almost all the saving, a larger part of the national income should
accrue to this class to maximize saving and investmet(capitalists
are also assumed to reinvest the major part of their income).
Protection is recommended to achieve this objective. For,accord-
ing to a standard theorem in international-trade theory,protec-
tion will tend to increase the relative and absolute shares of
the gains from trade accruing to capital in a capital source
country _even if_ protection lowers national income by making
resource allocation less efficient. [35]

The first point to note about these arguments is that of
"misplaced orientation". The burden of these arguments is the
augmentation of savings, but they focus on production allocation
instead. In other words, the error is to try to get growth by
choice of what to produce instead of operating on savings. This
is the Mahalanobis error and springs from using a Marxian growth
model. Secondly, this argument admits the possibility that tariffs
may promote inefficiency in resource allocation. It is obviously
hardly worthwhile to try to increase savings at the expense of
efficiency in resource-use.

Further-more, the whole approach that reliese on investment
in heavy capital-goods industries to increase saving and invest-
ment is of doubtful validity because it is based on the un-
realistic assumption that fiscal policy is totally ineffective
in extracting savings or taxes from wages. [36] Now, quite a few of
the underdeveloped countries, li e Pakistan and India, have a
fairly effective fiscal machineries. The problem of promoting saving
and investment is, therefore, best taken care of by means of
subsidies on domestic income and output. It will be a wasteful
tour de force to achieve this result by setting up inefficient
industries through protection - like swinging a sledge-hammer in
the hope that the nut will insert itself under it.

35/It will be recognized that this is a direct application of the
   Stolper-Sameulson Theorem:Tariffs tend to increase both the
   relative and the _absolute_ reward of the country's scarce factor.
   See Stolper-Samuelson /_37_7.
36/Galenson and Leibenstein explicitly make this assumption.

Infant - Industry Argument for Protection

The infant-industry case has generally been accepted as providing a valid (growth) argument for protection.[37] Essentially the argument is that these industries, because of initial high costs of production, cannot withstand foreign competition. Protection is advocated because future benefits from the establishment of such industries are assumed to be substantial.

There is a strong case for state intervention since the private investors tend to discount future benefits at a higher cost than the society. As a result present losses weigh more heavily in their investment decisions. The private and social rates of transformation will then be different.[38] The net effect of the differential in the private and social rates of transformation is that private investors may find these industries unprofitable. However, on the other hand, because of the external economies that these industries generate, the establishment of such industries becomes socially desirable.

The general principles regarding optimal government intervention when the distortion is domestic are applicable here also - that is, a subsidy on domestic production is the optimal policy in order to remove the distortion caused by a differential in the private and social rates of transformation.

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[37] However, Johnson /16, 18_7 and Bhagwati and Krishnaswami /5_7 have challenged this argument. The discussion on this section is based on the writings of these authors.

[38] The private and social rates of transformation may also differ because the setting up of infant industries may generate external economies that cannot be appropriated by the private investors but are socially desirable. The supply of skilled labor, for instance, may eventually increase because of the establishment of such infant industries. The infant-industry argument has sometimes been confused with the external-economies argument. However, as Johnson has pointed out / 18_7 the two arguments are logically distinct. Whereas the external-economies argument involves a "permanent" distortion and hence permanent state intervention, the "distortion" in the infant-industry case is temporary and hence state intervention is also temporary. Moreover, the infant-industry argument is "dynamic" whereas the external-economies argument is static.

Let us consider the nature of this distortion in domestic production. The initial high domestic cost of production will cause t domestic marginal rate of transformation to differ from the foreign/rate of transformation. However, the domestic rate of substitution in consumption, unequal to domestic rate of transformation, will be equal to the foreign rate of transformation in production.

Now a tariff on imports may equalize the domestic and foreign rates of transformations but will disrupt the pre-existing equality between the domestic marginal rate of substitution and the foreign marginal rate of transformation. Hence protection is a sub-optimal policy. On the other hand, subsidy on domestic production, set at the right rate, will remove the inequality between the domestic/foreign social marginal rates of transformation, without disturbing the pre-existing equality between the domestic marginal rate of/ substitution and the foreign marginal rate of transformation

Thus subsidy and not protection is the optimal policy to help set up the socially desirable infant industries. However, this subsidy may not be given on domestic production. If the private rate of transformation differs from the social rate of transformation because these industries require heavy investment in on-the-job training/labor, [39]/ the subsidy should take the form of setting up of labor-training centers.

There is an important case for protection which should be now noted. [40]/ It is that protection may lead the foreign supplier of the imported goods, who has been denied access to the domestic market, to set up manufacturing units within the country in collaboration with domestic investors. This may also lead to additional inflow of foreign capital./brings net gains to provided that this inflow of foreign capital the country, protection may serve a useful purpose.

39/ Since the setting up of initially high-cost industries in the hope of future benefits is essentially a kind of investment, resource allocation will be socially suboptimal - i.e., a "distortion" will occur in domestic investment if these industries are not set up. See Johnson /¯18_/.

40/ See Bhagwati /¯7_/.

Summary, Qualifications and Conclusion

The preceding discussion shows that arguments for using protection as a <u>primary</u> instrument to remove domestic distortion, arising either from external economies, monopoly elements in production or a rural-urban wage differential, or from a differential in the social and private rates of discount, are in effect arguments for providing subsidies (or taxes) on domestic production. We have also seen that protection is a wasteful policy in order to promote saving and investment. It is pure commonsense that, instead of promoting saving by setting up possibly inefficient industries, it is far better to achieve this objective more directly by using appropriate fiscal policies. Furthermore, in developing countries, which operate large investment programs, protection is not required to exert "pressures" on private investors to invest. Also, foreign competition is, after all, only one factor influencing investment decisions; availability of investible funds, skill and entre- preneurial talents are perhaps more important. Moreover, when domestic production cannot expand readily in response to price incentives, protection may become a bottleneck both on the demand side as well as on the supply side. On the one hand, by raising the domestic prices of inputs used in domestic industries, protection will raise domestic cost of production. However under certain conditions protection, by attracting foreign investors to set up joint projects in the country, may prove beneficial.

This is not to condemn protection <u>per</u> <u>se.</u> For this is not a case for free trade either. It has been shown that, when domestic "distortion" exists, free trade is not the optimal policy. What in effect has been argued is that, although the "failure" of the free-trade solution because of domestic distortion does/not follow that this should necessarily constitute a case for state intervention, it does take the form of protection. The form that this intervention takes should rather be decided by a comparison of <u>all</u> the alternative policy instruments available to the government.

It is just a question of the relativity of the various available policy instruments with respect to the social policy goals.

The reason why protection turned out to be an inferior policy instrument in our discussion is that it was considered in relation to problems that could be best taken care of by other policy instruments. Of course, our conclusions would have been of a completely "academic" interest if a country were so underdeveloped that it had no other policy instrument, except protection, "strong" enough to do the job. Moreover, in such a case protection as a policy instrument may not have so many defects - that is, it may be equal to a "general" tax. It appears that it is some such economy (most African countries will fall in this group) that economists, who advocate protection, may have conjured up when writing about these problems. Our discussion is not a criticism of their judgement, but it only warns the reader that these arguments should not be accepted uncritically in the context of countries like Pakistan and India, where other equally strong policy instruments are also available to the government. In these countries suitable tax-cum-subsidy policies (or investment policies) influence domestic production more directly. This, however, does not preclude the imposition of import taxes as a part of the tax program instituted to finance subsidies.

There are two very important issues that we have not discussed so far.

The first question relates to the cost of financing the subsidy. In arguing that optimal government intervention to remove domestic distortion should take the form of subsidies (or taxes) on production or on factor-use, we made the implicit assumption that subsidies do not impose a cost on the economy. Subsidies may have to be financed through additional taxation. No doubt protection also involves a cost, but these costs are not visible. Thus, if only for political reasons, governments may use protection instead of giving subsidies. However, this argument is fallacious because the effect of a subsidy to a

particular industry can also be secured by taxing other
industries more heavily; or alternatively by exempting from
tax the industry in question, while retaining taxes on other
industries.

The cost of financing the subsidy, however, raises
deeper issues regarding the validity of our argument. This is
the question of the "neutrality" of taxes and subsidies with
respect to its effects on the allocation of domestic resources.
Suppose a "partial" excise tax is levied. It is well known that
such a tax imposes an "excess burden"[41/] on the economy because it
enters as a wedge between the price paid and the price received,
thereby destroying the equality either between cost of pro-
duction and the gross price paid by the consumer in the product
market, or the equality between cost of factor purchase and the
proceeds from factor sales in the factor market. The resulting
changes in prices may lead to substitutions in the purchase
(or sale) of products and factors. As a result, the cost of
public services to the public may be greater than it would have
been if taxes were raised in a manner not causing the two sorts
of interferences in the allocation mechanism referred to above.
Thus partial excise taxes, imposed to finance the subsidy,
may themselves introduce distortions in the form of an "excess
burden" (defined in the previous sentence). If it were not
possible to levy taxes to finance production subsidies without
imposing an "excess burden" on the economy then, according to
the General Theorem of the Second Best, there would have been
no a priori reason to prefer a subsidy over protection, for
both remove a set of "distortions" at the expense of introducing
another.

However, this objection applies only to a "partial"
excise tax. A truly "general"[42/] tax is free from this objection.

41/ For a discussion of the "excess burden" imposed by excise
    taxes see Musgrave / 29 7.

42/ The "generality" of a tax has been defined as follows:
    "A tax is made more general if its coverage is extended over
    a wide range of economic choices of the same type, of choices
    that may be substituted more or less readily such as alter-
    native opportunities or alternative investment outlets."
    Musgrave and Peggy Pechman /30 7.

Such a tax will cover all commodities that can be readily
substituted for one another. Now, since imports are the most
direct substitutes for domestically-produced goods, a tax on
imports may be a part of the taxes imposed to finance a subsidy.
In this way taxes on imports, having _incidental_ protection
effects, may form an integral part of the policy of tax-cum-
subsidy on production.

It is, however, important to differentiate the present
case where a tax on imports is a part of the _tax_ policy to
finance a subsidy to domestic production from the case (envisaged
by protectionists) when import taxes (tariffs) are considered
to be a _primary_ instrument for encouraging the home production
of import substitutes.

There is yet another related issue that we have not
touched upon so far. We have advocated using several policy
instruments to achieve various policy targets. This raises the
question of the possibility of some conflict in the use of
various policy instruments. For instance, import restrictions
fall most heavily on "non-essential" consumer goods. This
happens _primarily_ because, faced with the problem of allocating
limited foreign exchange among various uses, "non-essential"
imports are the obvious victims. However this policy, by raising
the domestic prices of these goods (assuming that the elasticity
of supply of domestic import-substitutes is greater than unity),
may induce greater private investment in the home-production of
these goods. Yet an increased production and consumption of
these goods may conflict with the plan objective of discouraging
the consumption of such goods. On the other hand, liberal
imports of capital goods may repel domestic investment from these
areas (again assuming that home production of these goods is
possible). This may conflict with the Government's policy of
encouraging investment in such lines. What, then, can be done
to remove this "inconsistency" in the use of policy instruments?

The usual answer has been that heavier protection should
be accorded the home production of capital goods. But such a

policy can be very harmful, if the domestic production of such
goods cannot be readily expanded. What should, then, be done?

My view is that in such a situation various policy
instruments have to be used in an _offsetting_ fashion, to some
extent. For instance, the incentive to invest in the production
of "non-essential" goods, caused by the restriction of their
domestic production should be offset by increased taxes on their
domestic production. And, if the government fails to do this,
then "fault" is that of fiscal policy.

It follows that a consistent use of the various policy
instruments does not mean that _all_ policy instruments point in
the same direction; what it should mean is that, _on_ **balance**, the
policy instruments should be used in such a fashion as to promote
the socially optimal pattern of investment.

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