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THE THEORY OF THE COSTS AND BENEFITS
FROM FOREIGN INVESTMENT AND
ECONOMIC INTEGRATION

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THE THEORY OF THE COSTS AND BENEFITS FROM FOREIGN INVESTMENT

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In recent years there has been a substantial increase in the number of studies concerned with Foreign Direct Investment (FDI) and multinational corporations. Several of these studies have pointed out the importance of various trade policies, especially tariff restrictions, in stimulating Foreign Direct Investment in import substituting manufacturing sectors. Therefore, it comes as no surprise that the formation of common markets with tariff restrictions on non-member countries and trade liberalization among the partner countries has been a chief factor explaining the expansion of multinational corporations in the last decade. The best example of the importance of that factor is the expansion of FDI induced by the creation of the European Common Market.

Most of the academic studies on this topic focus on the magnitude of FDI, the industries in which it concentrates, and the particular characteristics of the firms that invest abroad. Much less attention has been given to the analysis of costs and benefits of different volumes of FDI for the receiving or host countries, especially the less developed ones. Such an analysis is essential for host countries designing policies to maximize their national welfare.

The purpose of this paper is to survey the main theoretical approaches that have been proposed in the literature to analyze the costs and benefits of FDI, and examine their usefulness in the study of those FDI costs and benefits resulting from economic integration. After laying out some basic distinctions and assumptions in Section 1, in Section 2, we consider the classical Mac Dougall one sector model which concentrates on changes in the stock of capital and its marginal productivity. Although this approach presents several important limitations for the analysis of the effects of integration and of modern direct investment by multinational corporations, it is a good starting point which allows us to demonstrate a few crucial propositions. Section 3 examines a more rigorous, but abstract, general equilibrium model of the effects of integration on the gains or losses from FDI. Finally, Section 4 summarizes the main insights about the problem captured by these models as well as the model's limitations.

1. General assumptions

The foreign investment process has many different dimensions and can be analyzed from different points of view. Hence, it is important to make explicit which aspects of the investment process we choose to study here.

First, one may be concerned with the aggregate gains or losses of the whole group of integrating countries, or gains and losses for each individual country and/or its distribution among them. In this study we shall be concerned ultimately with aggregate gains or losses. Thus, we implicity assume that the social welfare function of the partner countries can be added and that there are other policy instruments available to redistribute costs and benefits among the countries involved.

Second, the analysis can be carried out under several alternative assumptions about foreign capital mobility. Although the analysis would be greatly simplified by supposing immobility, for the sake of greater generality and realism we shall assume perfect mobility in the long run, especially allowing old foreign capital to leave or new capital to enter the common market. Within it, we also assume perfect mobility, but we shall emphasize that within the particular sector where foreign capital concentrates.

Third, the assumptions about capital mobility are related to the period of time being considered in the analysis. In this study we will be concerned with the long run effects after integration is completed. This implies that supply functions are elastic and the size of existing plants may be varied. Time is crucial in the process of foreign investment in a second sense. Since capital is invested at a given moment of time, while revenues are generated over a number of years into the future, then, obviously, the relevant way of measuring the effects of FDI is considering their present value. Although we shall not be repeating this throughout the study, _all_ revenues and costs, supply and demand functions, etc., are assumed to be discounted into the present at the relevant discount rate (which may be different for the investor and the host country). Finally, our analysis will be static. That is, we shall be comparing a given situation _before_ integration with another _after_ integration. In the real world, however, and in particular within the Andean model, the transition towards the formation of a common market is gradual. But our assumption implies no loss of generality, provided that the relevant rigidities or

flexibilities in the transformation of the economies from the initial to the final situation are captured by the elasticities of the corresponding variables.

Fourth, economic integration affects FDI in several different ways. One of these is through the simple trade liberalization within the common market. This not only implies the possibility of trading freely within a broader market protected from third country imports by a common external tariff, but it also implies changes in the national market structures of different industries.

Markets which were monopolistic before integration may become competitive as a consequence of the "entrance" of new producers from the other member countries or viceversa. In general the market relations and established "modus vivendis" of local national or foreign oligopolies may be drastically upset by regional trade liberalization. A second way in which integration affects FDI --and especially the gains or losses derived from it by the host countries --is through the change in each country's tariff structure in order to adopt a Common External Tariff (CET). Thirdly integration affects FDI through the adoption of other exogenous common policies, such as the Andean Common Treatment of Foreign Capital.

The theoretical part of this study concentrates on the effects of trade liberalization alone, assuming that FDI is not affected by the imposition of a common external tariff. The analysis of the isolated impact of regional trade liberalization per se is a prerequisite to the development of optimal (welfare maximizing) host country policies towards

foreign capital and firms.

2. The capital market in a one sector model

In general, the gains or losses from FDI for the host countries
will depend on three main factors: (a) the change in the productivity of
foreign capital induced by economic integration; (b) the change in rents
or profits earned by that capital; and (c) the changes in the stock of
foreign capital. Changes in productivity induce changes in the income
earned by capital (profits) which in the case of that owned by foreigners
is likely to imply a redistribution of income between the host country
and the foreign investors as well as generate new capital inflows or
outflows.

One very simple model that can be used to study the relations
between the variables mentioned above is the one suggested by MacDougall
in his classic 1960 article. [1] The basic limitation of his approach,
however, is that he assumes only one sector or only one bundle of
commodities produced in fixed proportions, while integration implies
essentially a change in relative prices and levels of production between
at least two sectors or groups of commodities. Nevertheless, a one sector
model may still yield useful insights into the character of economic integration

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[1] Reproduced in Bhagwati (1969), pp. 391-69 and Caves and Johnson's
(1968) readings in international economics. Additional useful
extensions of the model have been made by Jones (1962a and 1962b),
Cohen (1972) and Pitchford (1976). Each of them will be briefly
considered below.

as a <u>kind of "technical" change</u> that increases the productivity of all the resources available. MacDougall's simple model is particularly useful in detailing the costs and benefits accruing to host countries from the interrelated changes in rents, profits and levels of foreign capital. This implies focusing on the <u>supply</u> of foreign capital, while--for the moment--the productivity of capital must be assumed to change exogenously, due to the impossibility of distinguishing between the different commodities or sectors affected by economic integration.

A second limitation of this model is that it assumes that foreign capital is identical to or a perfect substitute for domestic capital, so both can be simply added to obtain the total supply of capital in the economy. Moreover, foreign investment is not used specifically to produce some particular commodities, and there is no room in this model for any difference between national and foreign "firms".

The core of MacDougall's approach can be presented with the aid of his graphical analysis reproduced here in Figure II-1. The horizontal axis in Figure II-1 measures the stock of national and foreign capital in the whole group of countries engaged in the formation of a custom union. The vertical axis measures the values of their marginal products and the profit rate earned by capital. The line MP_o relates the quantity of capital used to the value of its marginal product in the whole <u>group</u> of countries before integration, given the supply of the other factors of production. Line MP_o is downward sloping for the conventional reasons and here it is drawn as a straight line only for simplicity.

Marginal
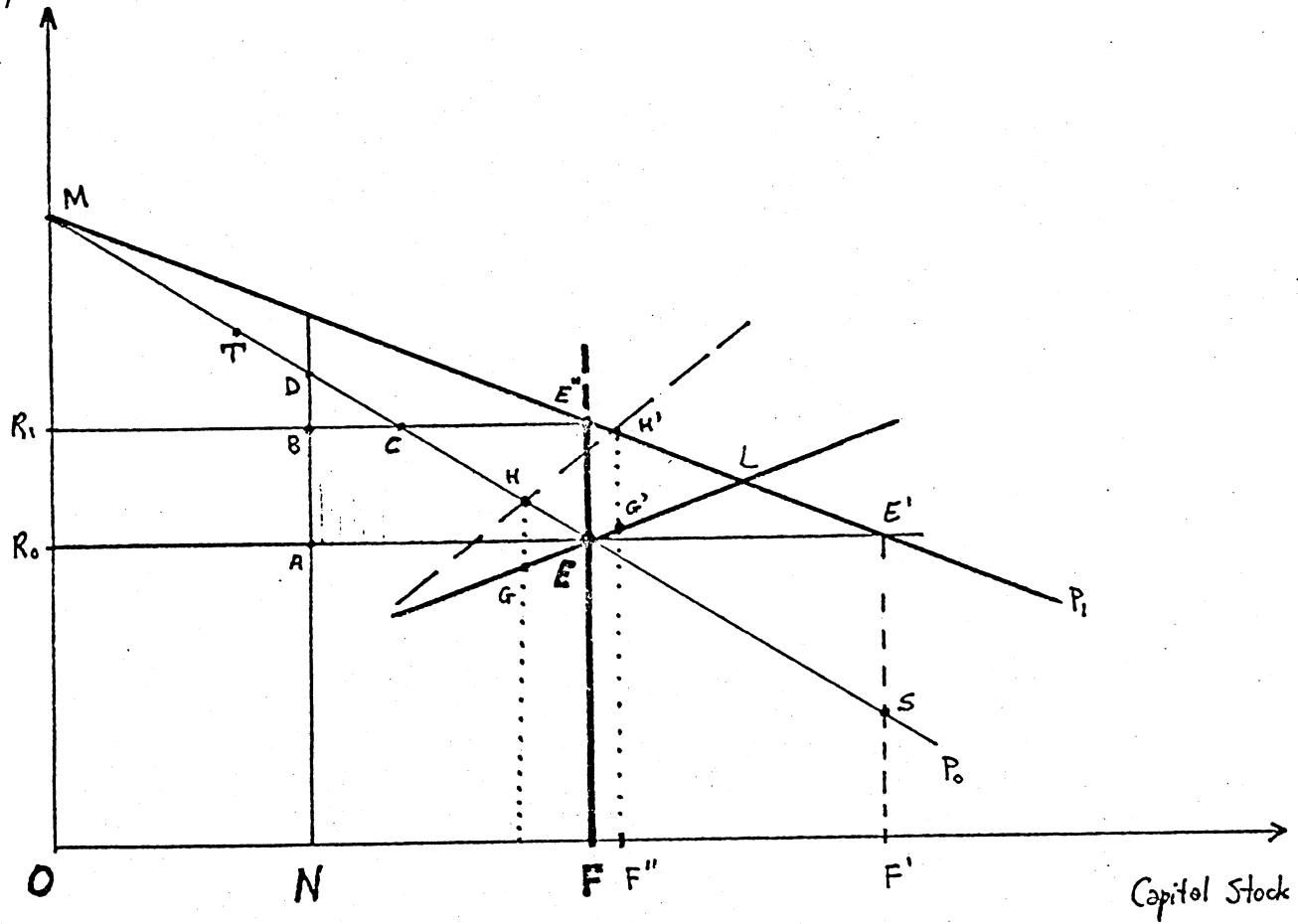Productivity
of capital
and profit
rates.

Figure II-1.

Capitol Stock

Assuming that social (or shadow) and private (market) prices are always identical [2] and that the total stock of capital before integration is OF in Figure II-1, the competitive equilibrium in this economy will be at point E. The profit rate earned by capital will be equal to OR_o, so the area $OFER_o$ is the total income captured by capital, the area R_oEM is the income earned by the other domestic factors of production and OFEM is the total Gross Domestic Product.

If the amount NF of capital corresponds to foreign capital investment before integration, then the area NFEA is the value of profits paid abroad. Since the gross "social contribution" of that capital is NFED, the net benefits from FDI already being used by the host countries before integration is equivalent to the area AED. Hence, the countries National Product will be equal to the total Domestic Product less the profits remitted abroad; that is, the area ONAEM.

The impact of economic integration within this model can be represented in general as a positive shift in the social value of the marginal productivity of capital; a movement of line MPo to, say, MP_1. The main limitation of this model, which was mentioned above, is that the

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2/   Note, this implies that tariffs do not introduce distortionary
       differences between domestic market and social (shadow) prices. Later,
       the introduction of a general equilibrium model will allow us to
       relax this assumption. In addition, this model implies no external-
       ities, no taxes and full employment; also balance of payment prob-
       lems and changes in the terms of trade are all dealt with optimally.

relative price changes remain "hidden" in the apparently simple shifting of the value of the marginal product of aggregate capital. [3]

If the trade effects of integration are to benefit the partner countries at all, their gross domestic income should increase. Given their initial factor endowment, the area OFE"M will be larger than OFEM. Whether revenues earned by capital will increase by more or less than that of non-capital factors (labor, for instance) depends on the factor intensity of production after integration, which in this model would be represented by the exact position of the MP_1 line. If the marginal productivity of capital falls in the new equilibrium position, i.e. if MP_1 were to cut the vertical line FE" below E (not drawn in Fig. II-I), capital's revenue will fall; if it cuts it above E (as drawn in the diagram) it will rise. The consideration of this phenomenon in isolation leads to our first important result.

Proposition 1: The economic gains from a customs union in the presence of foreign capital supplied inelastically to the integrating countries will be smaller, the higher is the capital intensity of production after compared to before integration and the higher is, therefore,

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[3] Before integration, the set of commodities produced were valued at a given set of relative prices, which were influenced by the tariffs imposed uniformly on imports from the partner and third countries. After forming the customs union, however, tariffs among partners are eliminated, so relative prices change and a different discrepancy arises between the union and world relative prices. In the model we are considering the shift in the aggregate marginal productivity of capital depends on the relative intensity with which it is used in producing the commodities whose domestic price and production change. Production changes of each good, in turn, depend on whether they are subject to trade creation and diversion effects, which cannot be considered explicit in this one sector model. This is the disaggregate analysis which requires at least a two sector general equilibrium model to consider.

the increase in the marginal productivity of capital due to integration.

Figure II-1 illustrates this proposition. Under the assumption that the supply of foreign capital is absolutely inelastic, i.e. it remains constant at OF, if the marginal productivity of capital rises, the competitive equilibrium after integration will move from E to a point such as E". Hence, there will be an increase in the rate of profit on capital to OR_1. But in the presence of foreign capital, the change in profits implies both an internal redistribution of income due to integration as well as a redistribution between the host countries and the foreign investors. Specifically, Gross Domestic Income after integration will be OFE"M; an increase equivalent to the area MEE". But profits paid to foreign capital will now be NFE"B; an increase equivalent to the shaded rectangle AEE"B. Therefore, the increase in the host countries National Product will be equal to the difference between MEE" and AEE"B (equivalent to AECB - MCE").

If, on the contrary, the capital intensity of production and, thus, the marginal productivity of that factor falls, so the competitive equilibrium moves to a point below E on line E"F, then integration will induce a redistribution of income in favor of the host country and against the foreign investors.

It is certainly more reasonable to expect that in equilibrium the marginal productivity of capital will rise rather than fall. First, because a fall would imply that more than all the gains from integration

will accrue to non-capital factors, i.e. mainly labor. Second, if the

supply of capital has some elasticity, that fall in marginal productivity

would imply that after integration the capital stock would also fall. The

two last results are clearly hard to believe. Finally, a rise in the

capital intensity of production and the marginal productivity of capital

should be expected from the use of more capital intensive plants in the

enlarged common market than in the smaller national market.

Those plants are likely to be more capital intensive because they

have been developed in and for larger and more advanced capital-abundant

countries. Therefore, in the analysis that follows, we shall assume that

integration at least increases somewhat the marginal productivity of capital

so all factors gain something (in absolute terms) from integration.

Proposition 2: In the absence of a specific policy towards FDI, the

host country gains from economic integration in the presence of foreign

capital will be smaller the more inelastic is the supply of foreign

capital in response to an increase in its productivity.

To demonstrate this proposition, simply compare the result obtained

previously when the supply of foreign capital was perfectly inelastic

with the opposite extreme case in which it is perfectly elastic.

With a horizontal supply of foreign capital such as line RoE', the

positive shift in its marginal productivity moves the competitive equilib-

rium in the capital market to point E'. The rate of profit in the economy

remains constant, and the domestic product after integration will be OF'E'M. If all the additional capital invested is foreign, profits remitted abroad will now amount to OF'E'Ro so the National Product of the partner/host countries will increase by MEE', rather than by only MEE" - AEE"B as in the case of a perfectly inelastic supply.[4]

The crucial characteristic of the case of a perfectly elastic supply is that since the profit rate per unit of capital remains constant there is no redistribution of income from the host country to the foreign investors resulting from the initial capital holdings of the latter.

It seems more reasonable, however, to assume that the supply of foreign capital has some elasticity. This would stem not only from traditional imperfections in the capital markets, but mainly from the peculiarities of modern foreign <u>direct</u> investment. First, the risks of expropriation or stiff regulations on FDI may be higher when foreign capital becomes a larger proportion of the total capital stock in the country or of a particular industry within it. The most important means available to foreign businessmen to reduce those risks is to repatriate their capital faster, and this implies <u>ceteris paribus</u> requiring a higher profit rate on capital as more is invested in a given country.

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[4] Since foreign and domestic capital are identical and indistinguishable in this model, there is no way of rigorously determining the expansion of output that is "attributable" or made possible by existing national or foreign capital. The <u>additional</u> entrance of foreign investment due to economic integration, however, (equivalent to FF') implies a net contribution to the host countries' national income equal to the triangle EE'E".

Second, modern FDI by multinational corporations involves the transfer of capital together with a whole package of different assets, such as technological know-how and patents, entrepreneurial ability, brand names and other specific factors. By definition, those factors have an inelastic supply and indeed earn rents or quasi-rents. Therefore, if "foreign capital" is more realistically defined as a composite factor of production including those specific factors, then it is reasonable to assume that it has a relatively inelastic supply.

When capital stocks vary as a consequence of integration it becomes difficult to distinguish between the economic gains for the host countries attributable to the customs unions per se and to the participation of foreign capital in the countries. [5] The most reasonable way to consider the distribution of integration gains is to compare the overall situations after and before integration. We have so far implicity shown that those gains can be distributed unevenly between host countries and foreign investors. When capital is constant, for example, and, thus, the gains from integration are more simple to interpret, the host country's gross benefits were equivalent to the area of the triangle MEE" in Fig. II-1 while those of the foreign investors were equal to the rectangle AEE"B. We are now in a position to show an additional result: that in the absence of an appropriate FDI policy, the redistribution effect of integration in favor of foreign capital can be so strong as to imply negative net gains from integration for the host countries.

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[5] In general, this is a consequence that the changes in host country and foreign investors' gains do not involve a zero-num game: the gains for one are not simply the difference between the total gains and those captured by the other.

Proposition 3: In the absence of an optimal compensating FDI policy, given a sufficiently high share of foreign capital supplied with a sufficiently low elasticity, the formation of a customs union in the presence of foreign capital may imply absolute losses for the integrating host countries.

The demonstration of this proposition involves the comparisons of the increase in the host countries domestic income after integration (the area MEE" in Fig. II-1) and the redistribution of that income to foreign investors (the area AEE"B), assuming a perfectly inelastic foreign capital supply. For some minimum initial stock of capital (such as NF) and supply elasticity, the area MEE" can be larger than AEE"B or, what amounts to exactly the same thing, the area MCE" can be larger than AECB. Clearly, if the initial stock of capital is smaller, ceteris paribus, the loss for the host countries will be smaller.[6]

The other two main variables determining the net gains for the countries from integration in the presence of foreign capital are the factor intensity of production in the new situation and the elasticity of capital supply. The former has been already analyzed, so we shall briefly

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[6]   Note that this result does not depend on a zero elasticity of capital; given a sufficiently high initial foreign capital stock, that elasticity could be positive and the host countries would still lose from integration.

consider the latter.[7]

As can be seen from an examination of Figure II-1, the lower the elasticity of the foreign capital supply, the smaller will be the gain (or greater the losses) from integration in the presence of foreign capital assuming no compensatory policy of taxing foreign profits. The reason for this result is that the increase in the profit rate on capital will be higher than when the supply is more elastic. Thus, differences in foreign capital supply elasticities have important policy implications on which we shall concentrate.

Proposition 4: If the supply of foreign capital is inelastic, the host countries will maximize their gains, or avoid losing, from economic integration in the presence of foreign capital if and only if they levy an optimal differential tax on the stock of all foreign direct investment.

This is an application of a proposition originally introduced by Kemp (1962a and 1962b). He also derived the optimum tax as a function of the elasticity of supply of capital and of its marginal productivity. The

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[7] Notice that if economic integration implies using even more capital intensive techniques, the gains for the host countries will become smaller (or the losses greater). This may be seen by twisting the new marginal productivity of capital function (MP), in such a way that it would cut the function MPo in figure II-1 at a point such as T and cut the prolongation of the vertical line FE" at a point above E" (not drawn here). This case has been analyzed in detail by Cohen (1972) in relation to changes in technology introduced by foreign investment, without considering the effects of integration, and therefore, we shall not repeat his analysis here.

idea behind Proposition 4 is that the government of a host country (or
group of countries acting as one maximizing unit) which faces an upward
sloping supply of foreign capital has some monopsonistic power over it.
In this case, the optimal level of "borrowing" by the host country will
be at the point at which the marginal cost of obtaining foreign capital
equals the value of its marginal product, and not where the latter equals
the (lower) average cost of borrowing given by the investor's supply curve.
In Fig. II-1, with a supply of foreign capital such as line S, the national
income maximizing level of foreign capital before forming the customs union
would have been at point H rather than E, achieved with an optimal tax on
foreign profits equivalent to HG. Point H and the optimal tax GH is
obtained at the point in which the marginal "cost" of foreign capital
for the host countries (represented in Fig. II-1 as line S') intersects
the value of the marginal product of capital function. Naturally, a shift
of the latter function caused by economic integration changes the optimal
tax rate. The optimal tax after integration, given the foreign capital
supply function S, would be H'G', determining implying an optimal level
of capital equal to OF". In general, the simple effect of this policy
is to reduce or tax away the redistribution effect of integration in favor
of foreign investors.

There is a last result worth studying with this simple model. It is
related with the possibility of a change in the relevant elasticity of
supply of foreign capital faced by the host countries before and after
integration. Since the supply faced by each of them before uniting is an excess
supply, if the elasticity for the group as a whole is less than infinite,[8]

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[8]   If all the member countries are still very small in relation to the
       total supply of foreign capital, they would also face a perfectly
       elastic supply after integrating.

then it will be more inelastic than the supply faced in isolation by each

individual country. Therefore before integrating it may have been

optimal for each isolated country to levy a low or no differential

tax on foreign capital; but afterwards it would become optimal to levy

a positive or high tax.[9]

A less than perfectly elastic supply of foreign capital is the notion

than lies behind the popular argument that host countries can improve

their economic position after integration by excercising their greater

"bargaining power" vis à vis the foreign investor.[10] But we have shown

that this is not the only argument for implementing a special foreign

investment policy in order to maximize the countries' gains or avoid losing

from economic integration.[11]

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[9]   In terms of Fig. II-1, if before integration each country was facing
       the horizontal supply curve RoE, they should have had an optimal zero
       tax. If after integration they face as a group the supply S, there
       would be an optimal positive tax H'G' which maximizes their national
       income.

[10]   It should not, however, be confused, with the argument merely in
       favor of a common policy towards FDI. It is an argument for a
       common and stricter policy than that followed independently by each
       country before integration. The basic argument for a common FDI
       policy is to avoid the competition among partner countries to attract
       foreign capital by offering special concessions or, inversely, to
       avoid an increase in the investor's bargaining power after they can
       sell in all the common markets by investing in the country that offers
       most favorable conditions.

[11]   Notice also, that these potential benefits from integration do not
       depend on the increase in the productivity of capital and, hence, in
       trade liberalization per se. Some benefits could be obtained even
       if capital productivity remains constant.

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We conclude this section with a few general remarks about policy measures. First, the <u>change</u> in foreign capital stock induced by economic integration, that is, increases or decreases in the <u>inflow</u> of capital, are only one--and not necessarily the most important--of the several variables affecting the costs and benefits derived from the presence of foreign firms. Other, probably more important variables, include the conditions under which the original foreign capital is operating both prior to and following integration, and the profit rate it earns.

The second general remark, with important policy implications, is that <u>quantitative</u> restrictions or absolute prohibitions of additional inflows of FDI do very little or nothing to tranfer more of the benefits from integration to the host countries. In general, host country policy <u>vis</u> à <u>vis</u> foreign capital should principally address the <u>conditions</u> under which foreign capital is employed. Taxes on all foreign profits, and taxes and tariffs on commodities produced by foreign capital (to be discussed below) are examples of required regulatory measures.[12]

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[12]   If, for instance, to avoid the "loss" expected from the free entry of foreign capital up to point G', the additional inflow of foreign capital from points L to G' is forbidden, the losses for the host countries become greater because the profits on already existing foreign capital increase to AEE"B, and the gross gains LG'E" are forgone. If, on the contrary, an optimal tax on <u>all</u> foreign capital is levied, an optimal inflow up to point H' will be reached and the host countries' national income will be maximized.

But in our analysis so far, we have assumed that the increase in foreign capital was responding to a _social_ productivity increase; in other words, the physical productivity of capital was supposed to be valued by the shadow or social price of commodities produced with foreign capital. Integration, however, by definition, implies the presence of tariffs which introduce "distortionary" differentials between the domestic market or _private_ prices of some commodities and their shadow or social prices (which would normally be given by their CIF world price). This phenomena introduces an _additional_ source of gains or losses for the host countries from integration in the presence of foreign capital. Even if profit rates on established capital do not change because the supply of foreign capital is perfectly elastic, domestic and foreign resources may be pulled into the "wrong" sectors or industries.

In the next section we analyze these additional effects within a two sector general equilibrium model.

3. A general equilibrium analysis

The formation of a customs union entails increasing trade among the member countries by eliminating tariffs and other restrictions on partner imports while setting a common external tariff with respect to imports from third countries. These structural changes will result in a new set of relative prices faced by consumers and producers as well as changes in the composition of production and consumption. To analyze in more detail the effects of integration it is, therefore, convenient to use a two sector general equilibrium model.

The formation of a common market has trade creation and trade diversion effects. A trade creation effect results from the elimination of tariff protection of domestic producers from their counterpart in the partner countries, and a trade diversion effect results from the increased protection granted to domestic producers vis à vis third country producers through the extension of their protected market to the partner countries. The net trade gain from integration depends on the relative strength of those two forces, i.e. of the "size" of the trade creation and diversion effects. [13]

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[13]   The concepts of trade creation and diversion were first introduced and defined by Viner (1950) and considerable controversy has arisen about their correct interpretation and usefulness. We shall not get into that discussion here and simply follow the generic meaning of the terms defined in the text. For a survey on that controversy see Krauss (1972).

In the presence of foreign capital or foreign companies located in the member countries there are additional effects to consider in arriving at the net gains of integration for the host/partner countries. We have already considered in the one sector model those net gains related to aggregate changes in profits and stocks of foreign capital. But those aggregate changes are the result of several interrelated changes, sometimes in opposite directions, going on in individual sectors or industries. Within a two sector two country model of a common market, trade creation implies both "foreign investment diversion" in the country importing one commodity (i.e. a fall in the stock of foreign capital in the industry producing that commodity), and as "investment creation" in the partner country exporting that same commodity. The elimination of tariff protection on imports from the partner reduces the domestic price and, hence, profits, domestic production and capital investment in the industry whose imports from the partners increase after integration. The opposite occurs in that same industry in the exporting partner country. On the other hand, diversion of trade formerly carried out with third countries will normally imply foreign investment creation in each country.

One's initial intuition is that if there is a net foreign investment creation effect, i.e. net increase in the stock of capital, there will be a gain for the host countries. A rigorous analysis of the problem in a disaggregated model, however, shows that this is not necessarily true, even assuming a constant rate of profit or a perfectly elastic supply of foreign capital. The essential reason is that the foreign capital inflow is being invested in tariff protected industries: we

are in a second best economy whose initial distortions do not necessarily
assure a welfare improvement from additional capital. Bhagwati (1973) and
H.G. Johnson (1967) have analyzed similar problems; in their language,
foreign capital inflow may entail "immiserizing growth".[14]

Immiserization can occur even without considering the profits that
are "paid" by the host country to obtain foreign capital. We can call this
a pure immiserization effect, analogous to that resulting from technolog-
ical change occuring in a tariff distorted industry (Johnson, 1967). The
changes in profits or rents earned by foreign factors already located in
the host countries which were analyzed above in a one sector model
constitute an additional variable affecting the overall gains from FDI in
the process of economic integration. To concentrate on the "immiseriza-
tion" phenomenon we shall assume first that there was no foreign capital
being used in the borrowing countries before forming the customs union,
and consider only the trade diversion force within a customs union which
induces an inflow of capital.

The situation of a union producing two commodities X and Y, with
given fixed supplies of two factors of production —say, capital and labor-
is illustrated in Figure II-2. The production possibilities curve of the
integrating countries taken together after forming the customs union but
before any trade diversion and foreign investment creation (capital inflow)
occurs is assumed to be represented by CC. Assume that production of Y is relatively
capital intensive and that of X is labor intensive. In the diagram we allow some

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14/ The concept was originally introduced by Bhagwati (1958) in relation to
a different phenomenon, but it was later generalized by him —Bhagwati
(1968)-and applied to the case of tariff-induced capital inflows.

trade to exist with third countries even after the formation of the union, but
before any trade diversion. World terms of trade are given by line PoCo
and the regional or common market price ratio is given by line RR; the joint
competitive equilibrium in production will be at point Po and consumption
at Co. Exports of X to third-countries before trade diversion would amount
to APo and imports of Y amount to ACo.

The trade diversion effect alone (still not allowing for foreign
investment inflows) moves production from point Po to point P_1 and consump-
tion to point C_1. The new equilibrium points imply less trade with third
countries; in particular, it implies an extension of protection to commod-
ity Y, which was formerly imported from third countries. [15/]

We now consider the welfare effects of foreign investment creation
induced by the customs union trade diversion. Following Bhagwati's (1973)
analytical framework, we distinguish three main welfare effects as a
protected common market with no initial foreign capital proceeds to get
an inflow of foreign capital under tariff protection:

15/   The movement from point Co to C_1 implies a reduction in the coun-
tries joint welfare, but this does not necessarily mean that
the formation of the customs union as a whole does the same. We
are concentrating here only on the trade diversion aspect. Trade
creation, i.e. the gains resulting from duty free regional trade
are not explicitly considered in this analysis. Within this model,
the latter could be represented as a movement from a point like B
inside the joint production possibility curve cum regional trade
towards point Po on that curve.

1) The tariff (i.e. regional protection from third country imports) implies a production and a consumption <u>loss</u> by distorting the prices faced by producers and consumers.

2) The foreign capital inflow implies "growth" at the constant tariff-inclusive domestic (regional) prices faced by producers. This "growth" may imply a welfare <u>gain</u> or <u>loss</u> for the host countries.

3) The tariff-induced capital inflow earns rentals or profits which must be considered a cost and hence a welfare <u>loss</u> to the integrating countries.

These welfare components are illustrated in Figure II-2. The pre-foreign capital inflow production is at P_1. With the additional capital stock the production possibility curve shifts from $CP_1 C$ to $C'P_1'C'$; domestic production moves to P_1' and consumption to C_1'; welfare is reduced from U_1 to U_1'. This is a <u>pure</u> "immiserizing growth effect" since it arises from the distorted use of the additional resources even before considering the value paid in rentals on foreign capital. In other words, it arises from effects (1) and (2) mentioned above, without considering effect (3). The common sense explanation of this result is that "growth" takes place in the "wrong" industry: the import-competing industry.[16]

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[15] A necessary and sufficient condition for this effect to occur is that foreign capital is ultra biased in the production of the importable good in the common market as a whole. This will happen if the importable good uses the foreign factor of production relatively intensively. In that case, based on the Rybczynsky (1955) theorem, the output of the importable will increase at constant tariff inclusive prices, while the output of the exportable commodity must fall. Strictly speaking, the necessary and sufficient condition for immiserization is that the Rybczynsky line P_1P_1' be less steep than the international price ratio P_1C_1. (Bhagwati, 1973, p. 51).
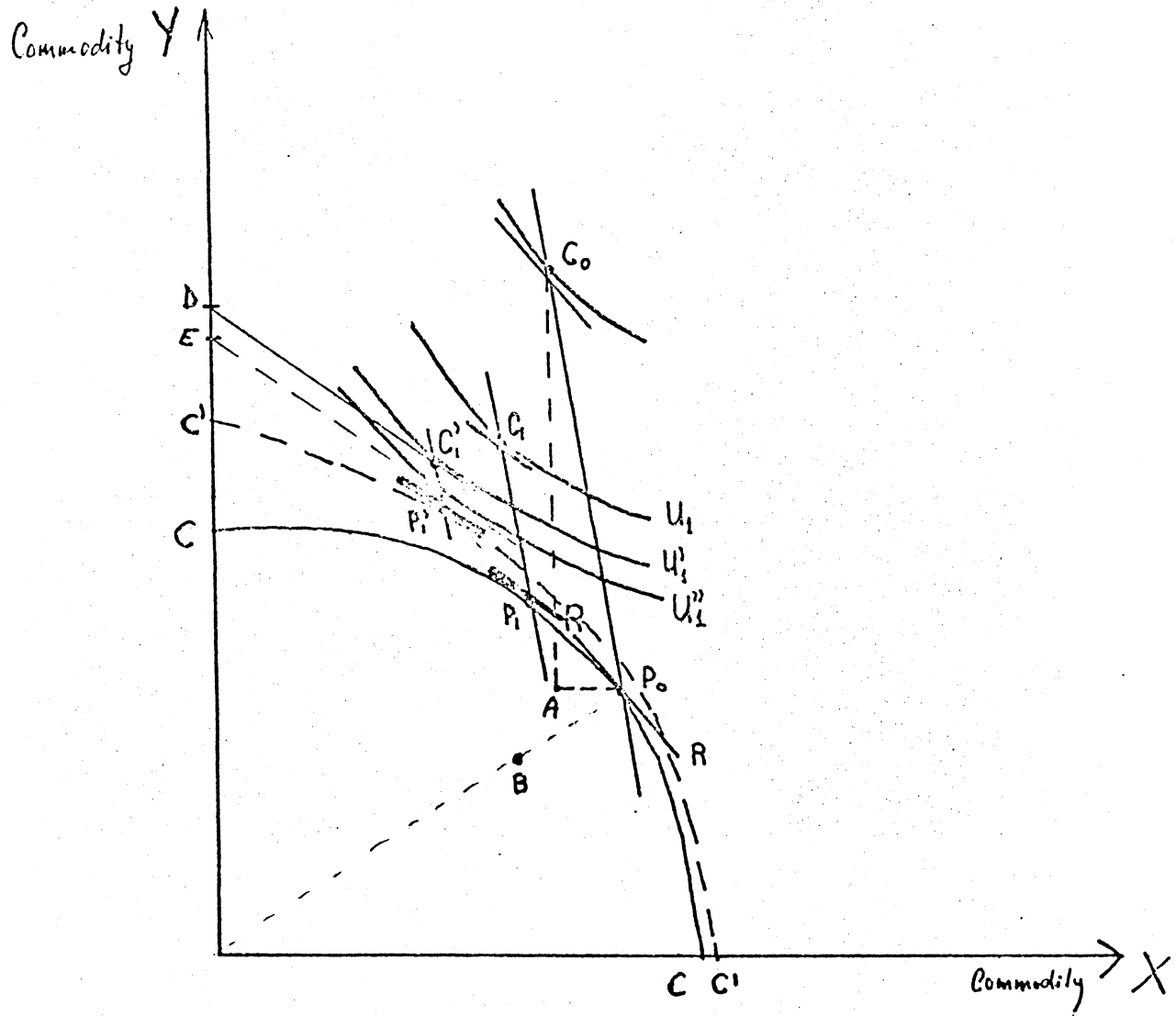
FIGURE II-2

In the case drawn in Figure II-2, the consideration of the payment for the foreign factors further reduces the host countries' welfare. If the return to foreign capital amounts to DE in terms of the quantity of the importable good Y at domestic prices, then the host countries' welfare will fall to U"1 in figure II-2.

Naturally, for a given positive or negative pure "immiserizing growth" - type effect of FDI, the gain (loss) for the host countries will be lower (greater) the higher the profits or rents "paid" for foreign capital. The rent per unit of foreign capital is systematically related to the increase in the stock of capital invested; this relationship is expressed by the elasticity of supply of foreign capital, as was examined in the one sector model above. Within the general equilibrium framework we have been using, the payment to foreign capital can be derived graphically by using a technique developed by Johnson (1959) to study the distribution of income among factors of production from the production possibility curve.

It is not necessary to repeat Johnson's derivation here. His result can be summarized in his "income-distribution" curve (labeled FK in our Figure II-3) which lies uniformly inside the production possibility frontier, C'C', for commodities X and Y. The curve FK is derived in such a way that it intersects the vectors from the origin of Figure II-3 to any point on the tranformation curve in the ratio in which income is divided between foreign capital and domestic labor and capital.[17]

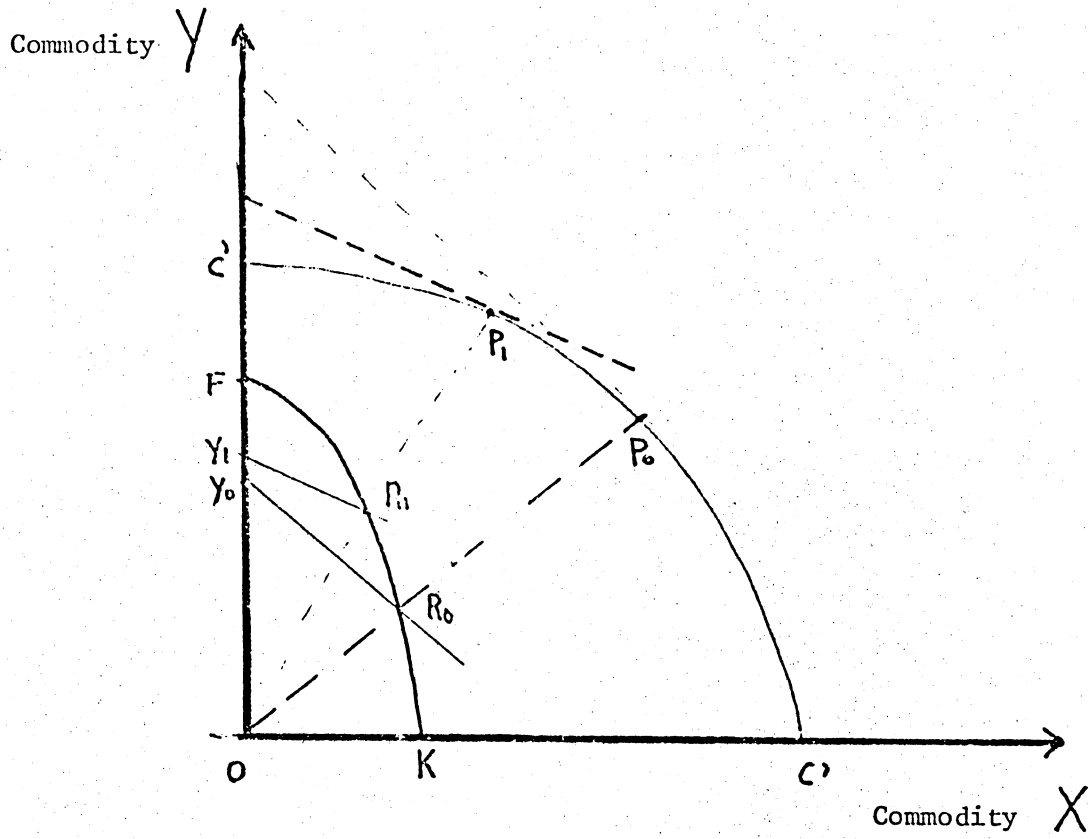17/   For example, if production is at Po and the intersection at Ro, foreign capital's share is ORo/OPo.

FIGURE II-3

The income actually received by foreign capital in terms of the imported commodity Y is obtained by drawing the "budget line" through Ro parallel to the tangent to the production possibility curve at the corresponding point Po. [18]

With this simple extension of the Bhagwati model it is not only possible to derive exactly the value of income paid abroad for foreign factors (the difference between Domestic and National income or the distance DE in Figure II-2) but also to consider the unions' effect on rents paid for capital invested in a group of countries prior to integration.

Assuming that the original stock of capital located in the integrating countries remains in these countries, the changes in commodity prices brought about by the union will affect the profits or rents on the original stock of foreign capital depending on the relative intensity with which it is used in producing the commodities affected by integration.

If the formation of the customs union increases the domestic relative price of the commodity (Y) which employs the fixed foreign factors of

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[18] Since commodity Y is assumed to be the relatively capital intensive commodity in our analysis, the income-distribution curve is tilted towards the Y-axis, so any budget line through a point to the left of Ro must lie outside of the budget line passing through Ro. See Johnson (1959), pp. 37.

production (say, capital) relatively intensively, then integration will imply an income transfer away from the host country; this welfare loss must be subtracted from the gains from regional trade and specialization.[19]

To conclude, it is worth stating the phenomenon arising with immiserizing growth in a different form and relating to our simple one sector model. The essence of the problem is that tariff protection is introducing a domestic market or private (tariff protected) value of the marginal productivity of capital higher than that productivity valued at social or shadow prices of commodities produced with foreign capital (assumed to be the CIF international price of these goods). Thus, tariffs are not only introducing a distortion, but imply paying an implicit "subsidy" on foreign capital used to produce a commodity which "should not be produced domestically in the first place". That is the reason why the countries may end worse off except if a compensating FDI policy is implemented.[20]

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[19] In terms of Figure II-3, a movement of production from point Po to P_1 would raise the income earned by foreign capital from OYo to OY_1, measured in units of the import commodity. The exact increase in the profit rate earned by capital (the shape of the FK function in figure II-3) is given by the elasticity of supply of foreign capital considered in the previous action. A rigurous mathematical analysis of the results arising from the assumption of different capital intensities and degrees of capital mobility has been made by Kemps (1966), Jones (1967) and Gehrels (1971).

[20] If we modify the definition of the new marginal productivity of capital function after integration (MP_1 in Fig. II-1) so as to reflect indeed the private or market domestic value of the productivity of capital in the common market, while MP_0 remains measuring that function in social terms, then, even assuming a perfectly elastic foreign capital supply, the host countries' domestic income measures at social prices will increase by an amount equivalent to the area ESF'F. Foreign profits, however, will still amount to FE'F'E. Therefore, the countries will really lose the equivalent of ESE'.

4. <u>Further implications and limitations of the theory</u>

With respect to foreign investment induced by economic integration, the main
lesson derived from the analysis of immiserizing growth is that increases
(or reductions) in foreign capital stocks <u>alone</u> do not necessarily imply a
benefit for the host countries. We have examined in detail the case of
welfare reductions arising from an inflow of foreign capital induced by the
trade diversion forces within a customs union. In addition we have isolated
that component of the total welfare loss (gain) due simply to increased
foreign factor rewards. By symmetry, we have also shown the possibility
of a gain from trade creation which induces an outflow of foreign capital
when it was initially immiserizing. The net gains or losses from changes
in stocks of foreign capital <u>per se</u> depend on the "degree" of immiserization;
the "degree" of immiserization depends both on the distortions prevailing
in the economy, especially non optimal tariffs, and the amount of resources
used in the distorted activities.

Since changes in the stocks of foreign capital which occur under
tariff distortions may <u>per se</u> involve no net gain or loss for the host
country, we may pay less attention to those stock variations than to the
changes on foreign profits or rents paid. In other words, since the line
$P_1' C_1'$ in the general   equilibrium model represented in Figure II-2, may
shift only a little either to the left or to the right line $P_1 C_1$ as a result
of a given outward shift of the transformation curve due to a foreign capital
inflow, we may disregard those shifts and focus on the more certain and
unambiguous changes in foreign profits and rents before and after integra-
tion. This result will allow us to later use the traditional partial
equilibrium representation of the welfare effects of trade ,and center
the analysis around specific foreign firms producing in particular industries.

Tariff protection is not the only or main distortion in an economy which can give rise to immiserization. Another very important distortion that is likely to give rise to it is monopoly in the commodity markets. This may be particularly significant for goods produced by foreign firms. Monopoly will introduce a differential between relative prices paid by consumers and relative domestic marginal costs of production, in the same way as tariffs do in competitive industries with respect to the alternative cost of importing the commodities. Thus, for instance, the differential between the slope of lines PoCo and RR in figure II-2 could be due to monopoly rather than to tariffs.[21]

On the other hand, the existence of tariffs _per se_ should not be judged as a "distortion". Tariffs may be a second-best policy for national (presumably "infant") industries,[22] but the same tariff may not be optimal for "non-infant" foreign companies. Thus, a tariff, even if not distortionary in the case of national firms, can be so for foreign firms and hence give rise to immiserization from the inflow of foreign capital.[23] Since tariffs tend normally to be established with national firms in mind, this important qualification should be kept in mind throughout our study.

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[21]   For a digrammatic presentation of monopoly in a general equilibrium trade model as the one used here, see Caves (1974).

[22]   They may even be an optimal (first best) policy if compensated with consumption subsidies.

[23]   Immiserization could only be avoided by levying simultaneously an optimal compensating tax on foreign capital.

Finally, it is worth specifying some general limitations of the
two models we have considered thus far. The main limitation is undoubt-
edly the consideration of foreign investment as a mere transfer of
"homogeneous" capital goods or funds.[24] Modern FDI in manufacturing involves
the "transfer" or use of several intangible assets -such as especial tech-
nologies, know-how, administrative capacity, brand names, etc. - none of
which are sold in any normal market. They are specific not only to produc-
tion in particular industries, but to particular firms which own and use
those assets. One should therefore, be concerned with foreign firms, usually
subsidiaries of multinational corporations (MNCs), rather than with a for-
eign "factor of production" which is paid a price in a market and can be
used indifferently by national or foreign owned firms.

Moreover, the specific factors owned and used by foreign firms
are typically a joint package of inelastically supplied assets (technologies,
know-how, administrative capacity, brand names, etc.) which are normally
indivisible, from which the firms earn pure or quasi-rents. Those rents
depend directly on the price obtained for the finished commodities. This
reason suggests that a more useful approach to studying the implications of
modern FDI in manufacturing by MNCs is to move to a partial equilibrium analy-
sis of the theory of firms earning supra-normal profits or rents from the
ownership and use of specific factors of production.

24/   For a more extensive criticism of this assumption, see J. Robinson (1973).

A second limitation of the models used so far is the implicit assumption that foreign capital is always mobile between sectors in each country. If FDI is indeed quite industry--and even firm--specific, it is likely to be more mobile among countries within the same industries, and especially within subsidiaries of the same multinational corporations. This a second reason for moving into a partial equilibrium analysis of the individual firm behavior under the assumptions briefly suggested here.

To summarize, notwithstanding the limitations of the relatively orthodox or traditional neo-classical models considered so far, they provide a very important insight into the phenomenon of FDI and show the possibility of quite "unorthodox" results. The basic point that has been proven with these models is that the formation of a customs union implies dealing with a problem of income distribution between foreign investors and countries, within a second-best economy, resulting from market and policy imposed distortion.

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