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IMPORT DEPENDENT IMPORT SUBSTITUTION

by Gerardo P. ^{ASION}Sicat, 1935-

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Gerardo P. Sicat*

I. Introduction

The main thesis of this paper should be evident from the title. An import substitution policy can lead to high import-dependence in the sense that it may not help bring about an integration of the domestic productive processes so that the maximum gain in national income is not achieved. When this pattern of industrial development occurs, balance of payments difficulties may continue to persist. This is especially more so if in encouraging industry, resources are shifted to favor import substituting activities away from agriculture and the export sector.

Import substitution appears to derive from a very simple idea. In exchange for the exports of primary products, underdeveloped countries import quite a variety of manufactured

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goods. The development of import substituting industries provide the starting basis for industrialization, since the initial market already exists. The first step is to institute measures to assure the establishment of the import substituting industries. [Control on the flow of imports through tariff protection, overvalued foreign exchange rates, fiscal inducements (such as tax exemptions) are employed to favor domestic industries against the competing imports. The initial blanket of protection also includes concessions to import substituting industries in the acquisition of foreign exchange allocations at below-true-market rate in the purchase of capital equipment and of whatever initial foreign inputs required.]

The theoretical bases for such policies may often be twisted to fit any one of the current theories encouraging industrial growth. In the next section, I shall touch on ways in which typical theories can be made to lead to a case where a highly import-dependent import substitution policy becomes a model result.

II. Doctrines Encouraging Import Substitution

It is only until recently that a greater emphasis on the doctrine of comparative advantage in the industrial development policies of the underdeveloped countries has gained greater

audience.¹ The impact of most writings on economic development theory has been to encourage import substituting industries. It need not be the case that particular theories, or their authors, did not pay attention to the idea of choice of industries along comparative advantage or along certain rules of choice of techniques emphasizing economic efficiency.² Rather, the main themes of the theories or doctrines have encouraged an undue emphasis on the superiority of import substitution as a means of promoting industrial development.

On the basic truth of the importance of import substitution, there is really little quarrel. So Kindleberger has reminded us that import substitution is an "entirely natural process in the course of economic growth."³ Nonetheless, I shall try to show how some of the theories, especially when interpreted by industrial development conscious policy-makers, may emphasize an import substitution policy that tends to be highly import dependent.

¹For instance, see Hollis Chenery, "Comparative Advantage and Development Policy," American Economic Review, vol. 51 no. 1 (March 1961), pp. 18-51; the papers and discussion on "Comparative Costs and Economic Development," American Economic Review, vol. 54, no. 3 (May 1964), pp. 390-436; and United Nations, World Economic Survey: 1962, Part I: The Developing Countries in World Trade (New York, 1963).

²A notable example is the paper by Chenery, op. cit. which reviewed development policy in the light of rules of choice of techniques and of industries.

³C.P. Kindleberger, Foreign Trade and the National Economy (New York & London, Yale University Press, 1962), p. 186.

III. Balanced Growth

The economic development literature on balanced growth is extensive and need not be summarized here. The essential ingredients may however be spelled out in order to arrive at the implications on import substitution policies. As originally inspired by earlier writings,⁴ the prescriptive doctrine of balanced growth is based largely on a strategy for making investment decisions in an underdeveloped economy. The size of the market is made to assume a key role. An investment policy balanced along several sectors or industries will not only exploit the possibilities of external economies in production but also expand the size of the market. In the agriculture-industry dichotomy of sectors in the economy, an investment policy emphasizing balance on both fronts will lead to a fast rate of economic development. The agricultural sector's surplus output is not only able to supply the needs of industry for primary inputs and of industrial labor for agricultural output, but its growth also provides complementary demand on the goods produced by industry.

⁴P.N. Rosenstein-Rodan, "Problems of Industrialization of Eastern and South-Eastern Europe," Economic Journal, vol. 53, (June-September, 1943), pp. 205-16; a much later statement of the basic ideas of the same author is contained in his "Notes on the Theory of the Big Push," Economic Development for Latin America, ed. by Howard S. Ellis (London, Macmillan and Co., 1961), Chapter 3.

In Nurkse's own restatement, "balanced growth" may just be a name for "diversified output expansion in accordance with domestic income elasticities" of demand for certain products.⁵ The link between balanced growth and import substitution is evident in discussions involving world trade and the prospects of the primary exporting countries. Export demand elasticity or terms of trade pessimism typified by Raul Prebisch⁶ and Nurkse,⁷ among others, has led to the conclusion that import substitution is the only powerful tool of promoting industrial growth. Nurkse has even contrasted balanced growth as defined by him above with "'growth through trade' which is specialized in accordance with international comparative advantage."⁸

Consider the following potentially import substituting industries x_1, x_2, x_3, \dots , etc. and their respective (assumed) income elasticities e_1, e_2, e_3, \dots , etc. Any anticipated

⁵R. Nurkse, Patterns of Trade and Development, The Wick-sell Lectures (1959) reprinted in his collected works, Equilibrium and Growth in the World Economy, edited by Gottfried Haberler (Cambridge, Mass., Harvard University Press, 1962), p. 318.

⁶Raul Prebisch, "Commercial Policy in Underdeveloped Countries," American Economic Review, vol. 49, no. 2 (May, 1959), pp. 251-273. This article is a re-statement of the Prebisch position on industrial policy, made famous in his earlier papers written at the United Nations Economic Commission for Latin America.

⁷Op. cit. We are aware that Nurkse prefers the more general term, "home market expansion" to "import substitution." Such a term would include expansion of activities which do not enter international trade generally, such as public utilities, social overhead capital, and services.

⁸Ibid.

knowledge about the relative values of the income elasticities will determine the emphasis of balanced growth based on an import substitution policy. In accordance with the doctrine, an encouragement of investment allocation adjusted in accordance with these income elasticities would be desirable. Now, import substitution takes the form of replacing the consumer goods imports by producing the goods, x_1 , or by shifting import allocations from final goods imports to capital goods with the use of income elasticity patterns as guidelines.⁹ Such choice of industries can become independent of efficiency considerations. It may be that x_1 is preferable to x_2 from the standpoint of efficiency even when $e_1 < e_2$. Balanced growth would imply that more investment resources would be devoted to x_2 whereas devoting investment resources to x_1 would be preferable for economic considerations. Consider also the case where $e_1 < e_2 < e_3$. This implies that investment resources will be allocated to import substituting industries x_1, x_2, x_3 in increasing relative importance as we move from industry 1 to 3.¹⁰ It may well

⁹This description of import substitution fits Nurkse's (*ibid.*). Prebisch's definition of the term is as follows: "an increase in the proportion of goods that is supplied from domestic sources and not necessarily as a reduction in the ratio of imports to total income." *Op. cit.*

¹⁰Note that we assume for simplicity that the capital per unit of output is the same for the industries under consideration. This can easily be removed, but the order of investment allocation may be adjusted in accordance with capital intensities of the different industries.

be, however, that x_1 and x_3 , if produced domestically can lead to high repercussions on the balance of payments in the sense that to produce them would require, in addition to imports of capital, sizable inputs and that x_2 has less dependence on foreign inputs. To divert scarce resources into the establishment of the other two industries could lead to less total potential output than if x_2 is given more encouragement in production. The essence of reasoning along comparative advantage in the context of import substitution is therefore to serve as the countercheck to inefficient choices of industries. The pattern of industrial development suggested by the balanced growth doctrine along the income elasticity approach (in the context of this last example) is to promote a relatively import dependent pattern of import substitution.

IV. Unbalanced Growth

The attack on the balanced growth doctrine is based essentially on the fact that the critical resources to be used in an investment program designed to achieve a balanced economic growth are scarce. The alternative proposal is to direct resources into selected industries on the assumption that once bottlenecks are created, attention is given to their solution. This is the general theme of the unbalanced growth strategy

proposed by Hirschman.¹¹ The policies affecting investment decisions for economic development move away from emphasis on "balance" based on (expected) income elasticities for different goods to a study of "critical" sectors or industries. For this purpose, the concept of linkages becomes essential. A sector or industry buys its inputs from other industries, combines these inputs to produce a certain output, and then sells this output to other sectors. The extent of the industry's purchase of inputs from other sectors may be called its backward linkage, and the extent of its sales to other sectors its forward linkage. To give empirical content to this, such linkages have to be measured. The measurements were derived from Leontief input-output matrices.¹²

In examining potential import substituting industries, linkages serve as the guide. Therefore, those industries which display high degrees of backward and forward linkages

¹¹A.O. Hirschman, The Strategy of Economic Development (New Haven, Yale University Press, 1957).

¹²Ibid., pp. 104-8. A crude measure employed was to get the ratio of total interindustry purchases to total output (backward linkage) and the ratio of interindustry sales to total demand (forward linkage). These were based on H.B. Chenery and T. Watanabe, "International Comparisons of the Structure of Production," Econometrica, vol. 28 (October, 1958). A more sophisticated measure which Hirschman recognizes is based on the inverse Leontief matrix which allows the estimation of direct and indirect repercussions on other sectors in the economy. This is based on the work of P.N. Rasmussen, Studies in Inter-Sectoral Relations (Copenhagen, 1956).

should take precedence over those with low. The unfortunate thing about this is that the measures are based almost always on the interindustry tables computed for the highly industrialized countries. Any measures of linkage repercussions are biased towards the highly industrialized structures of these economies.¹³ It is therefore a very likely possibility that the country wishing to apply import substitution policies will have a strong bias in favor of those industries which have high backward and forward linkages, like iron and steel, paper and paper products, and chemical products; or those which display high backward linkages,¹⁴ like most final consumer goods -- processed foods -- and lumber and wood products.

That this can lead to a highly import dependent import substitution can be seen by the following. Suppose the industry established is based largely on the expectation that (together with the initial capital imports) the inputs to productive

¹³This is the brunt of the criticism on a recent paper utilizing these measures. See W. Baer and I. Kerstenetzky, "Import Substitution and Industrialization in Brazil", American Economic Review, vol. 54, no. 3 (May, 1964), pp. 411-25 and the discussions by A.O. Hirschman and W.F. Stolper, pp. 426-34. Baer and Kerstenetzky used the Rasmussen measures of linkages (repercussions) from the US inverse Leontief matrix, not on a Brazilian table which has not yet been constructed.

¹⁴Hirschman has in fact indicated that backward linkages are more important. Op. cit., pp. 113-9.

processes can also be imported. If the industry has high linkage coefficients, in accordance with the known measures (not usually for this economy in question), it is to be expected that, once the industry is established, the linkage effects will work themselves out. To encourage such import substitution, internal price changes have to be established via restrictions on the import goods being replaced, either through high tariffs or other means of controls, especially on foreign exchange allocations or on imports. The initial results of this would favor the domestic import substituting industry. But it may be that the substantial inputs imported by industry will not get established because of either serious technological bottlenecks, impediments due to the scale of the market, or their unavailability to the economy. The failure to establish the expected linkages is the continuing reliance on the foreign sector to supply the foreign inputs.

If the aim of the policy is import replacement, the industries established may be dependent largely on a highly protective setting, which can nurture even the inefficient firms. The danger here lies in the fact that once established, such firms are able to exert influence in government circles to continue the protection rendered to them, and therefore the economy bears the economic costs. Thus, foreign inputs continue to get imported.

I follow a model of an economy composed of many sectors, x_1, x_2, x_3 , etc. Chenery and Watanabe¹⁵ have shown in a comparative study of input-output statistics of four industrial countries that patterns of production are largely of the "triangular matrix" type.¹⁶ Industries can be so arranged that the interindustry purchases form roughly a triangular matrix. Industry x_1 sells to no industry except itself but buys from all or most of the remaining industries. Industry x_2 sells to industry x_1 and only to itself but buys from the remaining industries, x_3 , and so on. The last industry, x_n , sells to all the other industries and to itself but buys from no other. It can be shown that industry x_1 has the highest backward linkage and industry x_n the highest forward linkage. Alternatively, x_1 has zero forward linkage and x_n zero backward linkage. The industries between these two industries at both extremes exhibit varying linkages.

Consider the economy which uses the unbalanced growth technique in the context of this structure of production. Suppose the industry with a high backward linkage were desired

¹⁵"International Comparisons of the Structure of Production," Econometrica, vol. 28 (October, 1958), pp. 487-521.

¹⁶It is interesting to note here that Hirschman's discussion of linkages were based primarily on the Chenery-Watanabe study. Hirschman, op. cit., pp. 104-19.

by policy considerations on the basis of the high potentials promised by such coefficient. With import replacement being considered, an increase in demand for the output of the domestic industry occurs. This will generate a chain of demand for the products of all the other industries, depending of course on the value of the input coefficients. If the remaining industries are not able to supply the pressure of their output, possibly because they are still nonexistent or they have capacity limits, or the costs of producing this is nowhere near to supplying the inputs required at prices which are competitive with substitute foreign inputs, there will be feedbacks on the balance of payments. There is an increased demand for the output of the import replacing industry due to other policy inducements (import restrictions on the imported commodity). But the desired demand for inputs from the foreign sector makes the import replacing industry highly import dependent.

If import replacing industries are encouraged independently of considerations of comparative advantage, the above result is more than likely. However, if the import replacing industry are at the same time planned out to generate new exports, perhaps high import dependence even when it results, will not be an economic burden on the nation. A highly import dependent industry can be described alternatively as

one with high backward linkage to the foreign sector. In general, such a situation makes the industry subject to the vagaries of balance of payments conditions. But this will not be true in general if the industry is at the same time producing for exports. For if this were the case, the foreign exchange used are re-earned through export earnings. When the exportables are in manufacturing, then the industry under consideration may have greater capacity to generate a high growth rate because, in the absence of subsidies, it is likely to be more efficient, being exposed as it is to world market forces.

V. Import Substitution and Resource Allocations in Export Industries and Agriculture.

Import substitution industries promoted by conscious policy are often confined in manufacturing. To achieve the necessary reallocation of resources, a policy of attraction into manufacturing is of prime consideration. The financial resources of the economy, including foreign exchange, are channeled into favored industries. In many countries, controls on the allocation of foreign exchange and the shift of the country's savings into manufacturing are but a natural effect of contrived import substitution.

The allocation of the most scarce resources for competing sectors of the economy, particularly the export and the agricultural sectors, are as a result adversely affected. The extent to which this happens depends, of course, on the vigor of the

drive on the industrial front. If the import replacing industries do not become producers of exportables, the country's industrial effort however can suffer. An examination of the price signals of a designed import substitution policy will illustrate this point. Suppose that without concerted efforts, entrepreneurs are guided solely by the profitability of import replacing industries on the one hand and export industries on the other. Entrepreneurs will allocate their investible resources by weighing the respective profitabilities of import substituting industries against the export industries with adjustments being made for the riskiness of the ventures. Where a vigorous drive to tilt the balance in favor of import replacement, entrepreneurial resources are induced into the import replacing industries. Thus, export expansion suffers.

The case of agriculture is often cited. While the problem of transforming agriculture into a modern, highly productive sector is an important requirement of sustained economic development, a highly favorable industrial policy for import replacing industries may likewise attract economic resources away from agricultural development. The pitfall is quite common. And it is no exaggeration to add that the recent growth of interest in modernizing agriculture is the result of earlier neglect of so vital a sector in the overall strategy of achieving a high rate of economic development.

If the resulting import substituting industries display the characteristics of high import dependence described already, the diversion of resources away from agriculture and export industries becomes, as a matter of fact, more costly.

VI. Conclusion

In the above I point out how an industrial policy of import substitution can encourage a highly import dependent manufacturing structure. Certain comments are directed especially to the two conflicting prescriptive policies for rapid economic development -- the balanced as against the unbalanced growth strategies of development. While this should not be considered as an attack on either strategies, it stresses that a well-intentioned program of promoting rapid import substitution, argued in either line of strategies, can lead to high import dependence on the part of the established industries. While income elasticities can serve as a guide in showing the long-run pattern of demand for output in a given economy, to work out a pattern of investment based mainly on identifying industries along this guideline can lead to a neglect of more basic considerations, such as export creation. Heavy preoccupation with linkages can also have similar results. Very often, too, the desire to promote vigorous import substitution may misallocate resources away from industries with potential exportables and from modernizing the agricultural sector.