THE BALANCE OF PAYMENTS
AND IMPORT SUBSTITUTING
INDUSTRIALIZATION
IN ARGENTINA,
1945 - 61

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JAMES WILLIAM FOLEY

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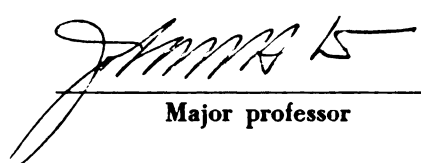This is to certify that the

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ABSTRACT

THE BALANCE OF PAYMENTS AND
IMPORT SUBSTITUTING INDUSTRIALIZATION
IN ARGENTINA, 1945-61

By

James W. Foley

Orthodox economic development theory has viewed balance of payments prob-

lems (pressures) as being detrimental to economic growth. Instability and periodic

scarcity of foreign exchange are alleged to decrease the importation of capital goods

needed for industrialization and thus hinder economic growth. Albert O. Hirschman

has challenged this view, suggesting that balance of payments pressures may induce

import substitution and thus stimulate economic growth.[1] He argues that a country

confronted with balance of payments problems and unable to finance continued im-

portation of a given product may begin to produce locally the previously imported

product. It was the central task of this dissertation to test this hypothesis by examin-

ing the relevant circumstances in Argentina during the period 1945-61. Since the

late nineteen-forties Argentina has suffered continuous balance of payments difficul-

ties and thus was a suitable country for such a test.

In order to test this hypothesis it was first necessary to define operationally a

balance of payments pressure. That is, it was necessary to distinguish between weak

balance of payments pressures supposedly incapable of inducing import substitution

and strong pressures which presumably would compel some sort of remedial action by

the government which might induce import substitution. Two methods based on Argentine institutional arrangements and a priori reasoning were developed for this purpose. Accordingly, 1955-58 were labelled years of strong balance of payments pressures. If the Hirschman hypothesis is correct, import substitution should have occurred concurrently or shortly thereafter. In order to analyze the subsequent phase of import substitution, twenty-nine products were chosen for detailed study. The sample products accounted for more than half of Argentine imports, in dollars, during the mid-nineteen-fifties. Seven of the twenty-nine products did not subsequently experience import substitution. These seven products were quantitatively unimportant, accounting for little more than 3 percent of total imports. The remaining twenty-two products did experience rapid and massive import substitution. Between 1956 and 1962, the dollar cost of these twenty-two products as a percentage of total imports fell from 48.01 to 17.3 percent.

Successful import substitution, by and large, required large-scale foreign investments. Those products that were substituted without foreign participation, were quantitatively unimportant, comprising a small share of total imports. Significantly, their domestication required little or no imported capital.

The quantitatively more important products and groups of products studied (i.e., automobiles, trucks, oils, paper and paper products, iron and steel, and tractors) did require foreign participation in the import substitution process. This resulted from the basic structure of the Argentine economy when balance of payments pressures first were evidenced and import substitution felt to be necessary. By the late nineteen-forties, the stage of easy import substitution, involving technologically simple,

labor-intensive industries, was complete. Remaining to be substituted were the technologically complex, capital-intensive industries, which required for their establishment large amounts of imported capital. Given the prevailing low level of foreign exchange, an import bundle comprised overwhelmingly of non-consumer goods, and a stagnant export sector, foreign investment was necessary to overcome the foreign exchange bottleneck. Accordingly, the Argentine government, in 1958, instituted the Industrial Promotion Laws which welcomed foreign enterprises that contributed to import substitution and/or export expansion.

An examination of the relationship between Argentine balance of payments pressures and import substituting industrialization has demonstrated that the former has had a pronounced effect on the latter. Thus, the Hirschman hypothesis that balance of payments pressures induce import substitution has been supported by the Argentine experience of the late nineteen-fifties and early nineteen-sixties.

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[1]Albert O. Hirschman, The Strategy of Economic Development (New Haven, Connecticut: Yale University Press, 1967), pp. 166-76.

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A THESIS

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CHAPTER I

This chapter initially sets forth the hypothesis to be tested: that balance of

payments pressures induce import substitution. This is followed by a general discus-

sion of import substitution which examines (1) the definition of import substitution;

(2) the process of import substitution as it has historically occurred in Latin America;

(3) the analytical justification of import substitution as a growth strategy; and (4) the

various measures of import substitution. I then discuss the relevance of the basic

hypothesis to development theory. Finally, I outline the scope of this work.

THE HYPOTHESIS[1]

Albert Hirschman has suggested that balance of payments pressures frequently

induce import substitution. This thesis is summarized in the following statement.

> That fluctuations in foreign exchange availability may, up to a
> point, accelerate economic development can be shown in the follow-
> ing way. Take first the years during which foreign exchange earnings
> are ample and import restrictions non-existent. During this period an
> underdeveloped country expands its traditional imports and develops
> a taste, a market, and a need for a number of hitherto unknown and
> unappreciated commodities. As more incentive goods become avail-
> able, backward-sloping supply curves of effort are being "unbent"
> and economic operators become more market-oriented in their work
> habits and production efforts. A number of "thresholds" are being
> crossed, but production is not started because of the opposition of
> the importing interests, the difficulties of competing with them, and
> the lack of interest of public authorities.

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[1]This section examines, in a cursory manner only, the hypothesis to be tested.
For a more detailed discussion of this hypothesis see Chapter III, pp. 63-70.

> Come the lean years and imports are restricted in one way or an-
> other; the entrepreneurs then know from the previous phase that the
> size of the home market for some of these imports warrants the build-
> ing up of domestic manufacturing, and such projects now are strongly
> supported by public opinion because the absence or high price of the
> previously imported commodities is felt as a deprivation; in fact, in
> this phase the domestic importers themselves, or the foreign exporting
> interests, often turn producers of the goods they previously shipped
> into the country.[2]

It is interesting that Hirschman should equate import substitution with the

acceleration of economic development. Whether Hirschman is correct in his assump-

tion will be discussed below, along with other issues relating to import substitution.

THE CONCEPT OF IMPORT SUBSTITUTION

IMPORT SUBSTITUTION DEFINED[3]

Import substitution occurs whenever a country undertakes to produce locally a

good which had previously been imported. Successful substitution requires that the

size of the domestic market be sufficient to support output levels consistent with mini-

mum acceptable profits for the entrepreneur or a high enough level of protection such

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[2]Albert O. Hirschman, The Strategy of Economic Development (New Haven,
Conn.: Yale University Press, 1967), pp. 173-74.

[3]Non-industrial import substitution is excluded from this discussion for two
reasons. First, the historical agrarian orientation of Latin American nations has meant
that subsequent import substitution had to be, by and large, industrial in nature. This
bias in the definition of import substitution is also reflected in the literature which
either explicitly or implicitly rules out agrarian import substitution and, instead, speaks
of import substituting industrialization. See for example Henry J. Bruton, Principles
of Development Economics (Englewood Cliffs, N.J.: Prentice-Hall, Inc.), pp. 343-48;
Alfred Maizels, Industrial Growth and World Trade (Cambridge: Cambridge University
Press, 1963), pp. 148-51; Gerald M. Meier, Leading Issues in Development Economics

that low output levels can be profitable.[4] Initially import substitution almost always requires some form of protection in order that the infant industry might be protected against "unfair" international competition, at least during the industry's incipient stages. In practice, this protection, once instituted, tends to become permanent.[5]

THE PROCESS OF IMPORT SUBSTITUTION

According to the Organization of American States and the United Nations' Economic Commission for Latin America, the process of import substitution typically goes through three stages: the domestication of consumer goods, intermediate goods, and finally capital goods production.[6] Although such a schematic approach is

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(New York: Oxford University Press, 1964), pp. 297-303; and Hollis B. Chenery, "Patterns of Industrial Growth,"American Economic Review, Sept. 1960, pp. 624-54.

[4]It should go without saying that also required are technical and entrepreneurial expertise, and in general, the appropriate resource endowment.

[5]The high level of industrial protection, generally prevalent in Latin American countries, has helped to foster gross inefficiencies in Latin American industries. Firms, finding themselves protected from international competition, are under no compulsion to modernize or make more efficient their present mode of operation. The resulting inefficiencies, coupled with narrow domestic markets, have aggravated the typical historical pattern of low-volume, high unit costs, and high prices. For an excellent discussion of the inefficiencies of Latin American industries, see David Felix, "Monetarists, Structuralists, and Import Substitution Industrialization: A Critical Appraisal," Inflation and Growth in Latin America, eds. Werner Baer and Isaac Kerstenetsky (Homewood, Ill.: Richard D. Irwin, Inc., 1964), pp. 370-401.

[6]Pan American Union, General Secretariat of the Organization of American States, Economic Survey of Latin America, 1962 (Baltimore: The Johns Hopkins Press, 1964), p. 420.

analytically useful and substantially correct, I find it more helpful to envision im-
port substitution as a two-stage process. The first stage might well be labeled that
of "easy import substitution." In this, substitution occurs for those products which
can be manufactured by relatively simple production techniques which are relatively
labor intensive.[7] That this stage should come first is completely logical. Easier
tasks are naturally undertaken first; later as a nation's expertise develops, more ven-
turesome and complex projects are undertaken. The second stage can be described
as the phase of "difficult import substitution." During this stage, the production of
consumer durables, intermediate, and capital goods is domesticated. Typically such
goods have sophisticated production techniques and relatively high capital require-
ments. Moreover, profitable production may require an output level greater than the
domestic economy can support. In short, this stage is difficult because a country may
lack one or more of the following: the ability to mobilize domestic savings for invest-
ment purposes, sufficient foreign exchange to finance the import component of poten-
tial investment, the appropriate "know-how," and a sufficiently large domestic
market.[8]

This two-stage approach to the process of import substitution seems to be what
Raul Prebisch, former head of the Economic Commission for Latin America, had in

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[7]United Nations, Economic Commission for Latin America, "The Growth and
Decline of Import Substitution in Brazil," Economic Bulletin for Latin America,
March, 1964, p. 5.

[8]It should be noted that the above variables would also be lacking during the
"easy" import substitution stage. At that time, however, they are not of critical im-
portance. For example, the ability to mobilize investment funds and/or foreign
exchange is, by definition, not as critical during the non-capital intensive phase of
import substitution as it is during the capital intensive phase.

mind when he made the following salient comments about Latin American develop-

ment.

> In fact, the stage of easy substitution is past. It was relatively
> simple to substitute domestic production for imports of industrial items
> of current consumption and of some durable and capital goods, and
> there is little margin for substitution in this field in most of Latin
> America. We are now moving into the stage of import substitution in
> respect of intermediate goods or durable consumer or capital goods,
> which, besides being difficult to manufacture, require markets much
> larger than those of the individual Latin American countries. More-
> over, there are some intermediate goods for which substitution possi-
> bilities are few, or simply non-existent, because of the shortage or
> total lack of natural resources.[9]

If Prebisch is correct, the more imperative it becomes that future import sub-

stitution (both in terms of projects undertaken and projects advocated) be well justi-

fied. The following section discusses some of the more important justifications given

for import substitution as a growth strategy.

ANALYTICAL JUSTIFICATIONS OF IMPORT SUBSTITUTION[10]

(1) Import substitution industrialization is often supported for the simple and

pragmatic reason that many people in underdeveloped countries prefer industrial

activity to agricultural activity. These people are convinced that it is somehow more

prestigious (or perhaps more to their own and their country's economic advantage) to

be engaged in manufacturing instead of agriculture. Often this view is reflected by

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[9]United Nations, Towards a Dynamic Development Policy for Latin Americans
(New York, 1963), pp. 69-70.

[10]The basic framework of this section has been drawn from a review article by
Gerald Meier. See Gerald M. Meier, "Import Substitution and Industrial Protection
--Note," Leading Issues in Development Economics, op. cit., pp. 297-303.

the government which therefore plunges headlong into industrial projects which have little or no economic justification.[11] Fortunately, industrialization may also be supported for more logical reasons. Many economists have noted and discussed the close and positive relationship that exists between the level of industrialization and the level of per capita income.[12] Since the two variables are closely related, it is easy (though statistically invalid) to assume that the variables are causally related. Proponents of import substitution industrialization (who base their advocacy on the above relationship) are implicitly assuming that the line of causation runs from an increase in industrialization to an increase in per capita income, rather than <u>vice versa.</u> Obviously, this assumption is open to severe criticism. It may well be that an increase in income leads to an increased demand for manufactured goods, and thus to an increase in industrial activity. Since the line of causation is not known, any such statistical "proof" of the virtue of import substitution is, at best, a somewhat dubious and shaky basis for development strategy.

If, however, it is assumed that industrialization is desirable, then it seems clear that import substitution will play a major role in this process. In a recent study, Hollis Chenery calculated the relative importance of import substitution in stimulating industrialization. Chenery shows that for forty countries, an increase in income

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[11]In this case, the belief in industrialization becomes an article of faith and for this reason, a systematic analysis of potential projects is not deemed necessary.

[12]For an excellent list of references on this point, see Hollis Chenery, "Patterns of Industrial Growth," American Economic Review, op. cit., p. 624 and pp. 653-54. Also see Bruce M. Russett, et al., World Handbook of Political and Social Indicators (New Haven, Conn.: Yale University Press, 1964), p. 280. Here the authors have correlated per capita gross national product with employment in industry

accounted for only one-third of the increase in industrial output, and that the remaining two-thirds of the increase in industrial output was due to import substitution.[13]

(2) The well known Prebisch-Singer thesis is frequently used to support import substitution as a growth strategy.[14] According to this thesis, Latin American exporting countries are increasingly going to be disadvantaged in their trade with the already developed nations. Prebisch argues that the income elasticity of Latin American exports (consisting mostly of primary products) is less than the income elasticity of Latin American imports (mainly manufactured products) from the advanced countries of Europe and North America. The greater market control which industries (and workers) in advanced countries enjoy also tends to work to the detriment of Latin American countries. Prebisch asserts that productivity gains in advanced countries are reflected in higher wages and/or profits, but only rarely in lower prices. This is due to the price control which firms in an oligopolistic industry can maintain and to the bargaining ability of powerful labor unions. In underdeveloped countries such market power is alleged to be lacking, and as a result, increased productivity leads to lower prices. The net result of these factors is that the commodity terms of trade have progressively

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as a percentage of working age population. The resulting correlation coefficient, based on data from 77 countries, is a high .79, thus tending to confirm the thesis that industrialization is positively associated with high per capita income.

[13]Chenery, op. cit., p. 641.

[14]See H.W. Singer, "The Distribution of Gains between Investing and Borrowing Countries," American Economic Review (May, 1950), pp. 473-85. For Prebisch's views see United Nations, Economic Commission for Latin America, The Economic Development of Latin America and Its Principle Problems (Lake Success, N.Y.: United Nations, 1950). Because of the obvious significance for Latin America, I will rely on the views of Prebisch in discussing this point.

moved against Latin American countries; thus a given amount of exports has progressively purchased less imports. In support of his contentions, Prebisch cites the British terms of trade for the period 1876-80 to 1946-47.[15] This data and the generalizations drawn from them have been criticized extensively.[16] Nevertheless. the main argument of declining terms of trade is valid, at least for certain products. This, however, is not nearly so important as the fact that the universal validity of the Prebisch view is widely believed in Latin America. The result has been an almost mystical faith in the efficacy of import substitution. In this regard Wendell Gordon has stated:

> The import-substitution mentality that has dominated Latin American thinking in recent years seems to conceive that any new production facility is good, almost regardless of cost, provided it turns out a product that can substitute for some imports. At times one gets the impression that the Latin American commitment to the principle of import substitution is so strong as to justify domestic production regardless of cost. And in giving the protection that is necessary for the high-cost industries, the Latin American governments will concede almost any tariff rate that the domestic manufacturers ask for.[17]

(3) Import substituting industrialization is also supported for the purportedly dynamic effect which it has upon the economy of an underdeveloped country. One variant of this view stresses the role of linkages,[18] in the development process.

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[15]United Nations, op. cit., p. 9.

[16]For a good review of the Prebisch-Singer thesis and the criticism directed toward it see Benjamin Higgins, Economic Development (New York: W.W. Norton and Company, 1959), pp. 357-74 and Meier, op. cit.

[17]Wendell C. Gordon, The Political Economy of Latin America (New York: Columbia University Press, 1966), pp. 319-20.

[18]A distinction is usually made between forward and backward linkages. In this regard Hirschman asserts that "every nonprimary economic activity will induce attempts to supply through domestic production the inputs needed in that activity."

Hirschman places special emphasis upon the importance of backward linkages. He

argues that the establishment of a final-stage industry (i.e., an industry or industries

that "perform the 'final touches' on almost-finished industrial products imported from

abroad")[19] encourages the subsequent establishing of industries supplying inputs for

the final-stage industries. Once an industry is established, a continued supply of

inputs is necessary for its viability. Knowing this, potential domestic producers of

inputs are much less reluctant to begin production, even though they may have to

compete with imported inputs. Moreover, the final-stage industry itself may overtly

encourage domestic production of inputs. This is particularly true if the final-stage

industry fears a serious decline in the capacity to import, which will imperil a con-

tinued supply of imported inputs. Hirschman goes on to state that forward linkages

are far less compelling inducement mechanisms and are therefore inferior (or less

powerful) to backward linkages.[20] This is particularly true for agricultural and min-

ing activities. Once the assumption of the superiority (or greater likelihood) of back-

ward linkages is granted, then it follows, by definition, that growth strategies should

stress import substituting industrialization as opposed to primary-export activity.

Another variant of this theme points out the substantial benefits to be derived

from an industrially trained labor force; these benefits are said to be lacking in other

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This he labels a backward linkage. He further states that "every activity that does not by its nature cater exclusively to final demands, will induce attempts to utilize its outputs as inputs in some new activities." This he labels a forward linkage. Source: Alfred O. Hirschman, op. cit., p. 100.

[19]Ibid., p. 111.

[20]Ibid., p. 109.

forms of activity. Proponents of this argument emphasize the technical training which industrial labor receives, the gradual inculcation of rational modes of thinking and action which hopefully will permeate the society, and the acceptance of industrial discipline as a necessary concomitant of a modern economy. Certainly such "resources" are badly lacking in many underdeveloped countries.

(4) Many Latin American countries find themselves heavily dependent on the outside world for all sorts of imports ranging from frivolous consumer goods to badly needed intermediate and capital goods. To finance these imports, export earnings are needed.[21] Unfortunately, many countries in Latin America find that their export earnings are subject to frequent and often violent fluctuations, for reasons largely beyond their own control.[22] This pattern is particularly typical if exports are oriented primarily towards one product, if price elasticity of demand is low, and if supply is internationally rather than monopolistically determined. The above description fits most Latin American countries. For example, typically, tin represents over 90 percent of Bolivian exports; petroleum, over 90 percent of Venezuelan exports; coffee, two-thirds and four-fifths of Colombian and Brazilian exports, respectively; sugar, over 80 percent of Cuban exports and one-half of Dominican exports; bananas, nearly

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[21]Although the various forms of external financing as well as foreign exchange reserves can be used to finance imports, in the long run import financing is determined by export earnings.

[22]For a complete discussion of the problem of export instability and its effects see Alasdair I. MacBean, Export Instability and Economic Development (Cambridge: Mass.: Harvard University Press, 1966).

two-thirds of Ecuadorian exports; and copper, almost 70 percent of Chilean exports.[23]

These products typically have low price elasticities and a supply which is interna-

tionally determined. The combination of the above factors can and does lead to

export instability.

Short term fluctuations in export earnings can wreak havoc upon an underde-

veloped economy, particularly if the import bundle is composed mainly of inputs needed

for already established domestic industries. In this case, short-term fluctuations result

in local industry grinding to a halt not because of insufficient demand, but rather be-

cause of an inability to finance the import of needed inputs.[24] David Felix calls this

a quasi-Keynesian state.[25] Besides unemployment, fluctuations in exports also cause

uncertainty as to the future availability of foreign exchange (needed for the financing

of imported inputs). This uncertainty tends to decrease the volume of investment and

tends to make "the suppliers of capital and credit charge higher interest rates and im-

pose more stringent conditions,"[26] thus diminishing investment even more.

One of the solutions to the problem is to attempt to stabilize prices by means

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[23]Committee for Economic Development, Regional Integration and the Trade of Latin America (New York: Committee for Economic Development, 1968), p. 24.

[24]I am here assuming that foreign exchange reserves are not managed counter-cyclically; that is, it is assumed that the authorities do not "save" foreign exchange during an export boom and instead allow reserves to be used to finance increased imports.

[25]David Felix, "Beyond Import Substitution: A Latin American Dilemma," A paper presented to the Seminar on Strategy for the Foreign Sector and Economic Development, Buenos Aires, September 7 to September 10, 1966 (Buenos Aires: Center of Economic Research, Di Tella Institute, 1966), p. 6.

[26]MacBean, op. cit., p. 29.

of some sort of international commodity agreement. Already there are or have been various agreements involving wheat, sugar, tin and coffee.[27] As with any such arrangement, the incentive for "cheating" is great and as a result, such agreements often "break down," and even an initial agreement may be difficult or impossible to obtain. Another approach to the problem is one of import substitution industrialization; that is, production of essential products locally and thus elimination of dependence on the outside world. This solution, however, is not as easy as it would first appear. To be economically profitable, industries producing certain products (for example, steel and automobiles) must operate at sufficient output levels so as to take advantage of economies of scale. If the domestic market is too small to support such output levels, the result will be either unprofitable operations, exceedingly high-priced products, or in some cases, both. This particular problem would be partially alleviated if the Latin American Free Trade Area ever becomes effective.

(5) Another justification of import substituting industrialization is closely related to the eventual goal of a Latin American Free Trade Area. In 1960, most of the more important countries of Latin America (Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru and Uruguay) established an organization known as the Latin American Free Trade Association. The treaty (of establishment), signed in 1960, proposed an 8 percent yearly reduction in tariffs over a 12 year period, so that by 1973, tariffs would be almost eliminated between the participating nations. Unfortunately, there is nothing mandatory about this proposal and as a result little agreement has

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[27]L. Baronyai and J.C. Mills, International Commodity Agreements (México: Centro de Estudios Monetarios Latinoamericanos, 1963).

been reached concerning the implementation of this program.[28] If, however,

L.A.F.T.A. ever becomes effective, those countries with already existing productive

facilities for certain products will in all probability be selected to specialize in the

production of those products, supplying not just themselves, but all or much of Latin

America. Indeed, such a program of national specialization is precisely what the

original planners of L.A.F.T.A. hoped would develop. Thus, those countries which

substitute for imports now, even as a high real cost, may well benefit greatly in the

future.[29] Of course, this approach to development (i.e., import substitution even at

high real cost in the hope of eventual integration) is highly speculative and risky, but

as with all risky ventures, the "pay-off," if there is one, could be substantial.

(6) The final justification for import substitution is really a special case which

is relevant to Argentina and which may now or in the future apply to other Latin Ameri-

can countries. Assume that a country has a growth rate closely tied to the growth of

exports. This does not necessarily imply the standard case of export-led growth. In

Argentina, exports are necessary only to the extent that they finance the import of

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[28]This is not the place to go into a discussion of the mechanics of L.A.F.T.A.; however, for a brief discussion of the concept of and the problems facing L.A.F.T.A. see Gordon, op. cit., pp. 328-34. For a more extensive discussion, see Bela Balassa, Economic Development and Integration (México: Centro de Estudios Monetarios Latin-americanos, 1965). Also see Roy Blough and Jack N. Behrman, "Problems of Regional Integration in Latin America," Regional Integration and the Trade of Latin America, op. cit.

[29]I am here following a Latin American bias and am assuming that industrial-ization is the most potent growth strategy available and feasible in Latin America.

inputs needed for the expansion of existing industry.[30] In such a case, exports would not be necessary at all (for growth to take place) if foreign exchange reserves were sufficient to finance the import of needed inputs over long periods of time. But if reserves are not plentiful (as inevitably they cannot be over long periods of time) and if foreign investment is lagging, then an expanding export sector is necessary for the expansion of already established industries. If, however, the export sector is stagnant and cannot be stimulated, either for political or economic reasons,[31] then import substituting industrialization becomes the appropriate and indeed the only development strategy open to development planners.[32]

MEASURES OF IMPORT SUBSTITUTION

Import substitution as a growth process is intuitively understood by all development scholars. The concept, however, has no single agreed-upon definition or measure. In this regard, the Economic Commission for Latin America has stated:

> The concept of import substitution itself gives room for various interpretations. It can be taken to mean either the equivalent of a decrease in the absolute volume of imports; or the difference between the potential import demand which would have existed if the import

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[30]Export earnings are also necessary to finance external debt service requirements. Argentine debt service requirements in 1964, for example, were $481.3 million. Total exports in 1964 were $1,410.3 million. Source: Argentina Económica y Financiera (Buenos Aires: Oficina de Estudios para la Colaboración Económica Internacional, 1966), p. 302 and p. 281.

[31]See Chapter II, pp. 44-50.

[32]If the products which are potentially substitutable use production technique requiring still more imported inputs, then it will be necessary to import substitute by means of foreign investment. See Chapter II, pp. 49-50.

coefficient had remained constant, and the imports actually effected; or a similar difference, but in respect of a potential demand estimated on the assumption of a measure of elasticity--generally exceeding unity--of import demand in relation to the total product.[33]

Since the concept of import substitution is subject to "various interpretations," the number of theoretical measures is large. Basically, though, all measures of import substitution stress certain variables. Accordingly, this section will not review all the variant measures but will instead discuss the basic ones.

The simplest measure of import substitution compares total imports as a percentage of aggregate national income (gross national product, for example) between two points of time.[34] If the import coefficient declines, then this is taken as a rough measure of import substitution. With this measure, "substitution does not necessarily entail a contraction in the absolute volume of imports, but simply means that they increase more slowly than the total product,"[35] thus causing a decline in the import coefficient. A variant of this technique is used for individual products or groups of products.[36] Here the import coefficient is defined as imports of some good or group of goods such as consumer goods) as a percentage of total domestic supply, defined as domestic production plus imports. A decline in this import coefficient is taken as evidence of import substitution. Both of these techniques suffer from similar

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[33]United Nations, Economic Commission for Latin America, The Process of Industrial Development in Latin America (New York: United Nations, 1966), p. 26.

[34]Ibid., pp. 21-34.

[35]Ibid., p.27.

[36]See, for example, United Nations, The Economic Development of Latin America in the Post-War Period (New York: United Nations, 1964), pp. 21-23.

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deficiencies. These are summarized below.

> It is clear that several factors are liable to bring about changes in the import coefficient irrespective of import substitution. It may be modified, for instance, by changes in the composition of domestic investment, in exports or in public expenditure, or again by changes in the structure of production. The import coefficient may also be reduced by direct measures of curtailment or control, without any substitution actually taking place, an eventuality that often occurs in the case of non-complementary imports and, more particularly, durable consumer goods.[37]

Alfred Maizels has developed a simple measure of "gross" import substitution.[38] This method also focuses on the change in the import coefficient over time and thus is subject to the same criticisms as those quoted above. Maizels defines gross import substitution as "the difference between actual imports at the end of the period and what they would then have been had they formed the same proportion of total consumption as at the beginning of the period."[39] This measure can be written as

$$dM = O_1 (m_1 - m_o) \qquad (1)$$

where "dM" is the change in imports between two periods of time,[40] "O_1" is total supply (i.e., the sum of imports and domestic production) of a given good in the terminal year, and "m_1" and "m_o" are import coefficients for the terminal and initial year respectively.

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[37]Ibid., p. 21.

[38]Alfred Maizels, Industrial Growth and World Trade, op. cit., pp. 150-51.

[39]Ibid., p. 150.

[40]The variables may be expressed either in terms of physical units or by some unit of value, such as dollars.

A numerical example will clarify the meaning of this measure. Assume that between the initial and terminal years the import coefficient has fallen from .45 to .30 and that in the terminal year total supply is 180 units. Placing these values in the equation we obtain the following:

$$dM = 180 \ (.30 - .45)$$
$$= 180 \ (-.15)$$
$$= -27$$

If the import coefficient had remained constant, imports of this good would have been 27 units higher in the terminal year than they in fact were.[41]

One of the weaknesses of the above measure is that it gives a misleading impression of the overall trend of imports during the development process. Development, even by import substitution, does not always cause a decline in imports. The expansion of national income often leads to an increase in the demand for imports. Maizel has developed a measure of the effect of "demand expansion on imports." This is defined as the "difference between imports of manufactures at the beginning of the period and what they would have been at the end had they changed in the same proportion as total consumption of manufactures."[42] This measure of the expansion of imports due to increased domestic demand can be written as

$$dM = m_o \ (O_1 - O_o) \qquad (2)$$

where "dM" is the change in imports between two periods of time, "m_o" is the import

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[41]Maizel's measure of gross import substitution is substantially the same as that used by Chenery, who defines import substitution as $O_1 \ (m_o - m_1)$. See Chenery, op. cit., p. 640.

[42]Maizel, op. cit., pp. 150-51.

coefficient during the initial year, and "O|" and "O$_o$" are total supply for the terminal and initial years, respectively.

A numerical example will clarify this measure. Assume that the total supply of some good has increased from 100 to 180 units between the initial and terminal years, and that the import coefficient during the initial year was .45. Placing these values in the equation gives the following:

$$dM = .45 \ (180 - 100)$$
$$= .45 \ (80)$$
$$= 36$$

This means that if the import coefficient had remained constant, imports would have increased by 36 units due to the expansion of domestic demand.

The total change in imports that occurred between two periods of time can now be expressed by combining equations (1) and (2).

$$dM = O_| \ (m_| - m_o) + m_o \ (O_| - O_o) \tag{3}$$

Using the values given in the previous examples we obtain

$$dM = 180 \ (.30 - .45) + .45 \ (180 - 100)$$
$$= 180 \ (.15) \quad + .45 \ (80)$$
$$= -27 \quad + 36$$

which means that 75 percent of the increase in imports that would have occurred if the import coefficient had remained constant has been substituted. When the absolute value of the first term exceeds the value of the second term, "net" import substitution is said to occur.[43]

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[43]This statement assumes that the import coefficient has declined and that total supply has increased over time. For a more complete discussion of this measure see Chapter III, pp. 76-81.

RELEVANCE OF HYPOTHESIS TO DEVELOPMENT THEORY

Development literature has tended to view export instability as a deterrent to economic growth.[44] The chain of causation is as follows. Export instability causes fluctuations in the capacity to import which in turn necessitates variations in imports. Such variations in imports are alleged to cause instability in investment and real consumption which "clearly has undesirable implications from both social and economic standpoints."[45] In discussing export fluctuations, MacBean flatly asserts that "there can be no doubt what the general opinion is"; they are "a hindrance to the stability and growth of underdeveloped countries."[46] In fundamental contrast, Hirschman views foreign exchange fluctuations as positive agents of change, often inducing import substitution.[47] This dissertation does not attempt to settle this controversy as to the overall effect of foreign exchange fluctuations on economic development. It does, however, evaluate the efficacy of foreign exchange fluctuations in inducing import substitution.

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[44]For a brief review of the alleged adverse effects of export instability on economic growth see pages 10-12 of this chapter. For a more extensive discussion of this point, see MacBean, op. cit., pp. 23-33.

[45]Meier, op. cit., p. 392.

[46]MacBean, op. cit., p. 31.

[47]See Chapter III, pp. 63-65.

OUTLINE OF DISSERTATION

Chapter I has been concerned with the general concept of import substitution and with the hypothesis that import substitution is induced by balance of payments pressures. Since this basic hypothesis is to be tested for Argentina, Chapter II discusses the general economic situation in Argentina from an historical perspective. Chapter III examines in detail the hypothesis that balance of payments pressures induce import substitution and presents a method of analysis for testing this hypothesis. Chapter IV tests the basic hypothesis and discusses the structure of import substitution that occurred in the late nineteen-fifties. Chapter V summarizes the main conclusions and implications of the dissertation.

CHAPTER II

This chapter seeks to acquaint the reader with the fundamental characteristics of the Argentine economy. Accordingly, it begins with a brief examination of the factor endowment of Argentina. This is followed by an historical sketch of Argentine economic growth since 1900. The purpose is to explain recent Argentine economic stagnation and to indicate the options faced by Argentina when severe balance of payments pressures began to occur in the nineteen-fifties.

THE FACTOR ENDOWMENT OF ARGENTINA

Argentina is truly an enigma. A country with nearly all the prerequisites for growth, it has, nevertheless, stagnated for the past fifteen years. This stagnation is, at least, partially responsible for the political chaos and social confusion which have plagued the country since the overthrow of Juan Perón. Despite these problems, Argentina remains the most highly developed country in Latin America. Its 1965 per capita gross domestic product (at factor cost)[1] ranked second in Latin America

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[1]Gross national product and gross domestic product (and their net variants) are used throughout the dissertation as measures of aggregate national income. Gross national product "is identically equal to the sum of consumption expenditures and gross domestic capital formation, private and public, and the net exports of goods and services, plus the net factor incomes received from abroad." United Nations, Department of Economic and Social Affairs, Yearbook of National Accounts Statistics: 1965 (New York, 1966), p.xi. Gross domestic product is similar to the above except that net factor incomes received from abroad are excluded. If a nation is neither a net borrower nor a net lender, the two measures are equal. If a nation pays out more (in factor payments) to residents of other nations than it received from other countries, gross domestic will be greater than gross national product.

(excluding Puerto Rico and the Netherland Antilles), $783 versus $916 for Vene-zuela.[2] In terms of other welfare indicators, however, Argentina far surpasses Venezuela and other Latin American countries. Argentina has the highest literacy rate (91.4 percent)[3] and the highest enrollment ratio (defined as the "number of students attending higher educational institutions for each 10,000 of the general population"), 93,[4] in Latin America.[5] The relative importance placed on higher education in Argentina is evidenced by the fact that worldwide Argentina's enroll-ment ratio ranks seventh behind the United States, Puerto Rico, the Philippines, Netherland, Australia and New Zealand.[6]

In terms of health indicators, Argentina also ranks high. The ratio of in-habitants per doctor, 670, and persons per hospital bed, 160, are the lowest in Latin America. Typically, per capita daily caloric intake is above 3,000, or, roughly, the same as that prevailing in the United States, and per capita meat consumption is

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[2]United Nations, Department of Economic and Social Affairs, Yearbook of National Accounts Statistics, 1966 (New York, 1967), p. 726.

[3]Hubert Herring, A History of Latin America (3rd ed.; New York: Alfred A. Knopf, 1968), p. 961.

[4]Harold R.W. Benjamin, Higher Education in the American Republics (New York: McGraw-Hill Book Company, 1965), p. 197.

[5]A partial reason for this high score may be the age distribution of the Argen-tine population. Nevertheless, in view of the large spread between the enrollment ratio of Argentina and second place Uruguay, 93 versus 48, it seems safe to conclude that Argentina is indeed the quantitative leader in higher education in Latin America.

[6]Bruce M. Russett et al., World Handbook of Political and Social Indicators (New Haven, Conn.: Yale University Press, 1964), p. 214.

slightly higher than in the United States.[7] Partially for these reasons, life expec-

tancy (females at age zero, 1955-1960) is long, 65.0 years. In Latin America this

ranks second only to Uruguay where life expectancy is 66.5 years.[8] Moreover, the

crude death rate of 8.5 per thousand is not only the lowest in Latin America but is

lower than the United States rate of 9.4, as well.[9]

Argentina is also bountifully endowed with natural resources. In area it is

the eighth largest country in the world, behind the U.S.S.R., Canada, China, the

United States, Brazil, Australia, and India.[10] With approximately 21 million inhabi-

tants, Argentina's population density per square mile is 19, compared with a ratio of

25 for Latin America as a whole, and 48 for the United States.[11] The climate ap-

proximates that of the United States in its general temperate nature and its diversity.[12]

Almost all minerals and fuels needed for development are to be found in abundance,

with the exception of coal and iron ore. The fertility of the soil is legendary; indeed,

T.W. Schultz has noted that "parts of Argentina are comparable to the best of Iowa."[13]

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[7]Stephen Enke, Economics for Development (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1963), p. 20.

[8]Russett, op. cit., p. 197.

[9]Ibid., pp. 40-41.

[10]Ibid., p. 139.

[11]Committee for Economic Development, Cooperation for Progress in Latin America (New York: Committee for Economic Development, 1961), p. 1.

[12]Gilbert J. Butland, Latin America: A Regional Geography (2nd ed.; New York: John Wiley and Sons, Inc., 1966), pp. 255-91.

[13]Theodore W. Schultz, Transforming Traditional Agriculture (New Haven,

Knowledge about the quality and quantity of entrepreneurial ability in Argentina is scarce, often impressionistic, frequently contradictory, and, at best, highly tentative. David McClelland, a clinical psychologist, maintains that a high level of achievement motivation is closely associated with entrepreneurial behavior. On the basis of an analysis of such motivation in forty-one countries (including the United States and most of the developed world) Argentina ranks second worldwide and first in the Americas.[14] Moreover, Everett Hagen has noted that entrepreneurs are frequently drawn from the immigrant population. On the basis of sociological theory, Hagen argues that immigrants often suffer withdrawal of status respect and compensate for this by vigorous entrepreneurial effort.[15] And in view of the fact that, traditionally, a large proportion of the Argentine population (12.8 percent in 1960)[16] has been foreign born, one would expect that this would tend to supply a steady stream of entrepreneurs.[17]

Conn.: Yale University Press, 1964), p. 20.

[14]David C. McClelland, The Achieving Society (New York: The Free Press, 1967), pp. 461-62.

[15]Everett E. Hagen, On the Theory of Social Change (Homewood, Ill.: The Dorsey Press, Inc., 1962), pp. 190-92.

[16]Aldo Ferrer and E.L. Wheelwright, Industrialization in Argentina and Australia: A Comparative Study, Center of Economic Research, DiTella Institute (Buenos Aires: DiTella Institute, 1966), 1.9.

[17]It is interesting to note that a recent study of Argentine entrepreneurs supports Hagen's contention on this point. According to Eduardo Zalduendo, Argentine immigrants have augmented the supply of entrepreneurs in far greater proportion than their number alone would suggest; see Eduardo Zalduendo, El Empresario Industrial en Argentina, Center of Economic Research, DiTella Institute (Buenos Aires: DiTella Institute, 1966).

Nevertheless, it is by no means certain that things are as sanguine as the

above would tend to indicate. Tomás Fillol suggests that latent entrepreneurial abil-

ities are being stifled by certain unfortunate characteristics of the basic Argentine

national personality.[18] He argues that excessive achievement motivation has mani-

fested itself in the form of high need-aggression (i.e., need for aggression) and that

this, coupled with a predominant authoritarian personality type, has stifled the

cooperative element needed for successful entrepreneurial effort. Thus Fillol con-

cludes that Argentina's recent economic problems are, primarily, not due to economic

variables, but rather are the result of unfortunate cultural and social forces. In this

regard Fillol states:

> An analysis of the Argentine "national character," based on a
> study of the value-orientation profile of the Argentine society,
> will demonstrate that some cultural traits of the bulk of the popu-
> lation are inimical to the emergence of social relationships
> which would enable individuals to act concertedly in the pursuit
> of common goals and interests.
>
> . . . .
>
> Regardless of the social layer to which they belong, the problem
> is precisely that Argentines are unable to cooperate in the further-
> ance of their common interest.[19]

Fillol's arguments are persuasive and many individuals would agree with him

that cooperative ventures are not the forte of the Argentine people. Nevertheless,

I reject the notion that Argentina's recent stagnation is due to social and cultural

factors, narrowly defined. In a recent study, Irma Adelman and Cynthia Taft Morris

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[18]Tomás Roberto Fillol, Social Factors in Economic Development: The Argen-
tine Case (Cambridge, Mass.: The M.I.T. Press, 1961).

[19]Ibid., pp. 3-4.

analyzed seventy-four underdeveloped non-communist countries and ranked them according to forty social, economic, and political indicators, which theoretically are significant in affecting economic development.[20] Of the forty variables, Argentina received high rankings (i.e., the nature of the variable in Argentina was conducive to economic development) on twenty-five and low rankings on but eight; (1) the degree of social tension; (2) the degree of centralization of political power; (3) extent of leadership commitment to economic development; (4) rate of growth of per capita GNP 1950/51--1963/64; (5) improvement in agricultural productivity since 1950; (6) the degree of improvement in the tax system since 1950; (7) the degree of improvement in financial institutions since 1950; and (8) export diversification.[21] On the basis of a composite index of all forty socio-economic variables, Argentina ranked first among the seventy-four countries studied.[22] These data suggest that the environment has permitted economic development although not without problems.

Finally, it should be noted that Argentina's rate of capital formation also appears to have been satisfactory.[23] From 1900 to 1961, investment as a percentage

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[20]Irma Adelman and Cynthia Taft Morris, Society, Politics and Economic Development: A Quantitative Approach (Baltimore: The Johns Hopkins Press, 1967).

[21]It should be noted that the low scores Argentina received on variables four through seven are misleading. Despite little recent improvement in these variables, their absolute magnitude remains high. For example, even though there has been little increase in agricultural productivity since 1950, the absolute level of productivity remains high.

[22]Ibid., p. 170.

[23]This statement is intended to apply only to the quantity of capital formation not the quality.

of gross national product has exceeded 20 percent in all but two periods: 1915-1919, when it was 15.0 percent, and 1940-1944, when it was 19.4 percent.[24]

In short, Argentina seems to have been endowed with the basic prerequisites for economic growth; large land area, diverse weather conditions, a healthy and educated labor force, abundant natural resources, a satisfactory rate of investment, and a sociological, political milieu not unfavorable to individual initiative and economic development. Yet the fact remains, Argentina has stagnated for fifteen years. An examination of the economic growth of Argentina since 1900 will enable the reader to understand the reasons for this stagnation. Following the lead of Díaz Alejandro I have divided the period into two parts, 1900 to 1930, when Argentina's development was chiefly agricultural and export-oriented, and 1930 to the present, when the country derived its main stimulus from industrialization.[25]

1900-1930: THE PERIOD OF EXPORT-ORIENTED GROWTH

During this period several important structural changes occurred in the economy, changes which combined to establish the "preconditions for take-off."[26] First,

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[24]Balance de Pagos de la Argentina (Buenos Aires: Oficina de Estudios para la Colaboración Económica Internacional, 1963).

[25]Carlos F. Díaz Alejandro, Stages in the Industrialization of Argentina, Center of Economic Research, DiTella Institute (Buenos Aires: DiTella Institute, 1966).

[26]The terms "take-off" and "preconditions for take-off" were coined by W.W. Rostow in his The Stages of Economic Growth (Cambridge: Cambridge University Press, 1960). This analysis of economic growth has proved to be controversial both from a theoretical and empirical standpoint. For an excellent summary of his views and of the criticisms they have fostered, see Gerald M. Meier, Leading Issues in Development Economics (New York: Oxford University Press, 1964), pp. 3-47. In using these

the population increased enormously, particularly between 1895 and 1914, when it increased from 4,000,000 to 8,000,000;[27] by 1930 the population had reached a level of 11,900,000.[28] Much of this phenomenal increase was the result of immigration which had several important effects. Since rural land ownership was largely closed to immigrants, most of them chose or were forced to live in the cities. As a result, Argentina was transformed overnight from a rural to an urban society. In 1895, only 37 percent of the people lived in urban areas (defined as a town of 2,000 or more in population) whereas by 1914 over 53 percent lived in urban areas.[29] The immigrants were particularly attracted to the port cities, and "by 1910 three out of every four adults in Buenos Aires were European-born and the proportion was only slightly lower in Rosario and Bahía Blanca."[30] This new influx of people affected Argentina's social structure decisively. Before 1880, only two classes existed: the upper, or wealthy, class, and the lower poor class. Vast numbers of immigrants, equipped with desire, talent, and even some savings, were soon able to form a

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terms I am following the approach used by DiTella and Zymelman in their analysis of Argentine economic growth. See Guido DiTella and Manuel Zymelman, Etapas del Desarrollo Económico Argentino, Center for Economic Research, DiTella Institute (Buenos Aires: DiTella Institute, 1961). This use does not necessarily imply acceptance of the Rostow stage approach.

[27]James R. Scobie, Argentina: A City and a Nation (New York: Oxford University Press, 1964), p.176.

[28]Importaciones, Industrialización, Desarrollo Económico en la Argentina (Buenos Aires: Oficina de Estudios para la Colaboración Económica Internacional, 1963), Volume I, p. 222.

[29]Scobie, loc. cit.

[30]Ibid., p. 134.

prosperous new middle class and this new bridge greatly increased vertical social mobility.[31] This new social mobility undoubtedly acted as a positive agent for change in Argentina, increasing the social reward for effort, thereby stimulating economic development.

Immigrants served partially to alleviate the largely unsatisfied demand for labor (particularly manual labor) prevalent during this period.[32] Immigrants were an important source of entrepreneurial effort.[33] This should not be so surprising. Latin Americans generally view manual labor and business as unfitting and improper for a gentleman. The immigrant, rejected by traditional society and holding few of the values of the traditional sector, was not so psychologically impeded in his quest for betterment and was, therefore, able to develop any latent entrepreneurial talents which he possessed.[34] Finally, immigration provided the population base which is helpful (in providing aggregate demand and labor supply) in stimulating industrialization.

The second important structural change that occurred in this period was the rapid development of the railway system. Between 1900-04 and 1910-14, the railroad network increased from 17,700 kilometers to 31,100 kilometers[35] and by 1917

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[31]Ibid., pp. 174-75.

[32]Ibid., p. 132.

[33]Zalduendo, loc. cit., and Díaz Alejandro, op. cit., pp. 15-20.

[34]Of course, this is only one of many explanations given for the large element of foreign born entrepreneurs in Latin America; see W. Paul Strassmann, "The Industrialist," Continuity and Change in Latin America, ed. John J. Johnson (Stanford, Calif.: Stanford University Press, 1964), pp. 161-85.

[35]Guido DiTella and Manuel Zymelman, Etapas del Desarrollo Económico

over 68 percent of the present system of railways had been constructed.[36]

It is clear that the building of the railroads was an important factor in help-

ing Argentina to achieve export-oriented growth in this period and in establishing

Buenos Aires as the economic center of the country, then and now. In this regard

Scobie has noted:

> Railroads provided the single most effective force in focusing the
> Argentine economy on the production of raw materials and in draw-
> ing the whole country toward the coast and the city of Buenos Aires.
> The basic structure of the railroad system emerged during the period
> 1880 to 1910 and subsequent additions and modifications, even the
> nationalization of the lines in 1947, failed to change the orienta-
> tion of those formative decades. Foreign capital, mostly British,
> built the pampas system as a commercial venture and left to the Ar-
> gentine government the task of establishing and managing the un-
> profitable lines north of Tucuman and south of Bahia Blanca needed
> for national unity and defense.[37]

It should be noted that the regional inequality of transportation facilities is

partially responsible for the large regional income disparities which plague present-

day Argentina. For example, "Metropolitan Buenos Aires generated 42.6% of GNP

(1959), and contained 34.6% of the 1960 total population in 0.13% of the total "

geographic area in Argentina.[38]

Argentino, Center of Economic Research, DiTella Institute (Buenos Aires: DiTella In-
stitute, 1961), p. 13.

[36]Argentina Económica y Financiera (Buenos Aires: Oficina de Estudios para
la Colaboración Económica Internacional, 1966), p. 260.

[37]Scobie, op. cit., p. 137.

[38]Mario S. Brodersohn, Regional Development and Industrial Location Policy
in Argentina, Center of Economic Research, DiTella Institute (Buenos Aires: DiTella
Institute, 1967), p. 107.

It seems clear that the present transportation system must be modified if regional income differences are to be narrowed. Patagónia, for example, with "50% of the hydroelectric resources of the country, 99% of coal reserves, 70% of petroleum reserves, 60% of natural gas reserves, 70% of iron reserves,"[39] is unable to develop these resources because of inadequate social overhead, particularly transportation. Thus Patagónia with roughly one-third of the geographic area of the country, has only 2.7 percent of the population (1960) and receives only 3.1 percent of the gross national product (1959).[40]

Perhaps the most important structural change was the remarkable increase in investment during the period 1900-1910. The absolute volume of gross fixed investment increased from 2.398 million pesos (1950 pesos) in 1900 to 10.230 million pesos in 1910.[41] Gross fixed investment as a percentage of gross domestic product increased from 25 percent in 1900 to a phenomenal 54 percent in 1910.[42] Of this amount 29 percent was generated domestically, and 25 percent from foreign investment.[43] Thus, during the period 1900-1914, the capital base needed for subsequent economic growth

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[39]Ibid., p. 86.

[40]Ibid., pp. 86-88.

[41]Naciones Unidas, Consejo Económico y Social, Comisión Económica para América Latina, El Desarrollo Económico de la Argentina: Anexo (Santiago de Chile, 1958), p. 81.

[42]Ibid., p. 3 and p. 81. My computations. It has been suggested that these investment ratios are unrealistically high and that perhaps this is due to the poor quality of data on Argentina for the early part of the twentieth century. This is possible since official national income accounts were not begun until 1945 and ex post reconstruction of such data is particularly hazardous.

[43]DiTella and Zymelman, op. cit., p. 64.

was established. Table 1 demonstrates the behavior of the investment coefficient for the period 1910-1935. Several facts should be noted. First, although the coefficient declined after 1914, it nevertheless remained relatively high. In subsequent years this investment habit has apparently remained and investment as a percentage of GNP has averaged around 20 percent.[44]

Secondly, the precipitous decline in foreign investment that occurred after 1914 should be noted. It is only recently (since 1958) that foreign capital has contributed substantially to Argentine economic growth. World War I, the world depression of the nineteen-thirties, and World War II, were responsible for most of this decline in foreign investment. Moreover, the antagonistic attitude of the Perón regime, during the late nineteen-forties and early nineteen-fifties, scarcely provided a favorable climate for foreign investment.

As a final point, it should be noted that World War I created powerful nationalistic forces,[45] which later manifested themselves in a desire and demand for economic

[44]For the period 1950-1959, gross domestic capital formation as a percentage of GNP averaged 19.3 percent in Argentina. This placed Argentina ahead of such developed countries as Denmark (18.9 percent), France (18.8 percent), the United States (17.8 percent), Belgium (16.2 percent), and the United Kingdom (15.2 percent). In Latin America, Argentina was fourth (among 18 countries surveyed) behind Venezuela (30.4 percent), Peru (26.6 percent), Jamaica (20.3 percent) and Costa Rica (20.0 percent). Russett, op. cit., pp. 168-69.

[45]Joseph Tulchin, "La Primera Guerra Mundial como Catalizador del Nacionalismo Argentino." Unpublished Seminar Paper, DiTella Institute, May 5, 1967.

TABLE 1

INVESTMENT AS A PERCENTAGE OF GROSS NATIONAL PRODUCT

Years	Five Year Averages			
	Total	National	Foreign	Depreciation
1910-14	42.2	21.4	20.8	12.3
1915-20	13.0	9.6	3.4	16.1
1920-25	26.4	22.8	3.6	13.5
1925-30	33.3	28.5	4.8	15.7
1930-35	22.2	19.0	3.2	18.5

Source: Guido DiTella and Manuel Zymelman, Etapas del Desarrollo Económico Argentino, Center of Economic Research, DiTella Institute (Buenos Aires: DiTella Institute, 1961), p. 13.

development and industrialization.[46] All of the above factors helped to establish the

preconditions for the Argentine "take-off."[47]

Argentine economic historians have labeled 1900 to 1930, the period of ex-

ternally oriented growth. During this period the driving force of the economy was the

growth of export markets. Gross national product grew at a rate of 5.4 percent and

for the entire period export earnings accounted for 28 percent of the gross national

product.[48] Although the manufacturing sector grew at a faster rate than gross national

product (5.4 percent vs. 4.5 percent), this was "not enough to make a significant

dent in the ratio of imports to GDP, given an income elasticity in the demand for

manufacturing products of more than one."[49] As a result, the import coefficient

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[46]It should be noted that nationalism is not an unmixed blessing. Initially, it may be useful in stimulating sectionally-oriented groups to "pull-together" for the purpose of achieving national objectives such as economic development. If national- ism is excessive, however, antagonisms toward foreign investment may develop when it and its concomitant advantages may be a necessary or easily obtainable ingredient for growth. This appears to have happened in Argentina, particularly during the Peronist regime. For informative discussions of the general attitude toward foreign investment in Latin America and Argentina see Raymond Vernon (ed.), How Latin America Views the U.S. Investor (New York: Frederick A. Praeger, Publishers, 1966), and Marvin D. Bernstein (ed.), Foreign Investment in Latin America:Cases and Atti- tudes (New York: Alfred A. Knopf, 1966).

[47]Guido DiTella and Manuel Zymelman classify the stages of Argentine econ- omic development as follows: before 1853--the traditional period; 1853 to 1880--the transitional period; 1880 to 1914--the period in which the preconditions for develop- ment were established; 1914 to 1933--the period of procrastination or delay; 1933 to 1952--the period of self-sustained growth; 1952 to the present--the period of read- justment. See DiTella and Zymelman, op. cit., p. 23. Rostow places the date of take-off as 1935. See Rostow, op. cit., p. 38.

[48]Brodersohn, op. cit., p. 8.

[49]Díaz Alejandro, op. cit., p. 10.

(i.e., imports to gross domestic product) declined only slightly from 26 percent in 1900-04, to 25 percent in 1925-29.[50]

Export earnings also grew at a faster rate than gross national product (5 percent vs. 4.5 percent).[51] Exports were primarily agricultural; in fact, agricultural products accounted for over 96 percent of total export earnings. In this period, the agricultural sector employed 35 percent of the labor force and 25 percent of the existing capital.[52]

One of the striking characteristics of Argentine manufacturing during this period was its rather unsophisticated nature. In this regard Díaz Alejandro has stated:

> Food processing, clothing, wood and leather-working represented 66 percent of all value added in manufacturing in 1900-04 and 51 percent in 1925-29. Even within those branches of manufacturing which could be expected to provide the more technically complex plants (such as the metallurgical industries), the bulk of production was carried out in small establishments (i.e., railroad repair shops).[53]

The structure of the manufacturing sector can best be shown by Table 2. As noted above, by 1925-29, the simpler branches of manufacturing still predominated although the relative importance of heavy industries increased. It is interesting to note that the growth of these industries does not seem to have been limited by demand

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[50]Ibid.

[51]Aldo Ferrer, La Economía Argentina (Mexico City: Fondo de Cultura Económica, 1963), p. 116.

[52]Ibid., p. 122.

[53]Díaz Alejandro, op. cit., p. 14.

TABLE 2

STRUCTURE OF THE VALUE ADDED IN MANUFACTURING IN ARGENTINA
(Percentages of total value added in manufacturing)

	1900-02	1925-29
Food, Beverages and Tobacco	34.3	27.7
Textiles	4.1	4.5
Clothing	14.9	10.2
Wood Products	11.4	7.7
Paper and Cardboard	2.0	3.0
Printing and Publishing	2.2	8.6
Leather Products	5.1	5.2
Rubber Products	---	0.1
Chemicals, Pharmaceutical and Petroleum Refining	6.7	9.4
Stone, Glass, and Ceramics	13.9	8.6
Metals and Machinery, Equipment and Appliances	3.4	12.9
Other	2.0	2.1

Source: Carlos F. Díaz Alejandro, Stages in the Industrialization of Argentina, Center of Economic Research, DiTella Institute (Buenos Aires: DiTella Institute, 1966), p. 15.

factors. With the exception of foodstuffs, beverages, and tobacco, all branches of manufacturing were importing at least 26 percent of the total supply available domestically. Table 3 demonstrates this point succinctly.

Given that demand factors did not seem to have stifled the growth of manufacturing, why then did domestic industrialization not increase at a faster pace? The generally accepted answer is that the power structure, the landed aristocracy, dominant in the government, producing primarily for external markets, was not eager to see created a new "power class" which might compete with it for prestige and influence. Thus, it is argued by some that "the tariff structure was such that its net effect was one of discouraging domestic manufacturing, as often the tariff rate applied to imports of raw materials and intermediate products was higher than that applied to the finished products embodying the heavily taxed intermediate products."[54] Such a view may be too extreme, but it is clear that the level of protection was low and "that the authorities showed very little enthusiasm for attempting to make of the tariff an instrument of industrial promotion, choosing to view it primarily as a producer of revenue regardless of its impact on industrialization."[55] Guido DiTella and Manuel Zymelman come to much the same conclusions stating that "the history of the tariffs during this period is a clear indication of the anti-industrial attitude" of the

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[54]Ibid., p. 21. In a recent study Díaz Alejandro has tested this assertion and has found it to be generally invalid. To be sure, there were cases of negative effective protection for certain goods, but such cases have been "grossly exaggerated" and were by no means representative of the overall level of protection. See Carlos F. Díaz Alejandro, "The Argentine Tariff, 1906-1940," Oxford Economic Papers, Vol. 19, No. 1, March, 1967.

[55]Ibid., p. 24.

TABLE 3

IMPORTS AS A PERCENTAGE OF THE VALUE OF DOMESTIC PRODUCTION PLUS IMPORTS: SELECTED MANUFACTURING PRODUCTS

	1900-04	1925-29
Foodstuffs, Beverages and Tobacco	6	5
Textiles and Clothing	55	42
Wood Products	39	34
Paper and Cardboard	25	31
Chemicals and Pharmaceutical Products	45	35
Petroleum Refining	100	52
Rubber Products	100	92
Stone, Glass and Ceramics	15	26
Metals	87	61
Machinery, Vehicles and Equipment Excluding Electrical	92	70
Electrical Machinery and Appliances	100	98

Source: Carlos F. Díaz Alejandro, Stages in the Industrialization of Argentina, op. cit., p. 12.

government.[56]

GROWTH SINCE 1930

With the advent of the world depression in the nineteen-thirties (and subsequently World War II) Argentina suffered a precipitous decline in the demand for its exports. As export earning declined, its balance of payments position deteriorated and the country found itself without sufficient foreign exchange to finance the import of manufactured goods. Faced with this situation, the government, in an effort to protect its balance of payments, instituted various exchange controls and quantitative restrictions on imports.[57] These measures, along with the depression and the war, served to protect domestic industries and this stimulated a process of import substitution. Thus, after nineteen-thirty, Argentina changed from an open to a closed economy. By 1955, it had progressively become one of the most highly protectionist countries in the world.[58] It was this spurt of import substituting industrialization which generated the Argentine take-off. Thus, between 1932 and 1949, gross domestic product grew at an annual rate of 4.2 percent, population at a rate of 1.8 percent, and per capita income at a rate of 2.4 percent annually.[59]

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[56]DiTella and Zymelman, op. cit., p. 15.

[57]Since 1931 (when controls were first established), the government has relied almost exclusively on exchange controls and quantitative restrictions as its instruments of protection; tariffs have played only a minor role.

[58]Ferrer and Wheelwright, op. cit., pp. 7.4-7.11.

[59]Argentina Económica y Financiera, op. cit., p. 54.

By 1950, the structure of the Argentine economy was far different than it was in 1932. Exports, which had previously generated 25 percent of gross domestic product, were now generating less than 13 percent. The quantum of imports had declined more than 30 percent and imports as a percentage of gross domestic product had decreased from 25 to 13 percent. By 1950, there was little doubt that manufacturing was the "leading sector" of the economy.[60]

It is important to note that the industrialization that occurred in this period was of a very special type. Generally the domestication of manufacturing centered upon those industries which were technically simple and relatively non-capital intensive. These were the light primary consumer goods industries such as foodstuffs and beverages, tobacco, textiles, clothing, wood products, printing and publishing, and leather products. Together such goods accounted for 58.6 percent of the total increase in value-added manufacturing between 1927-29 and 1948-50.[61] This domestication of light industries, as opposed to intermediate and capital-good industries, was primarily the result of a discriminatory system of protection, which allowed the importation of inputs for already established industries at favorable rates of exchange. In this regard Díaz Alejandro has stated:

> The protectionist system developed before 1945-50 was not well suited to stimulate a smooth transition from one stage of industrialization to another. On the contrary, such a system in effect created powerful vested interests within the manufacturing sector which took a dim view of efforts of import substitution in branches of manufacturing

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[60]Díaz Alejandro, Stages in the Industrialization of Argentina, pp. 28-30.

[61]Ibid., p. 50.

which could provide domestically inputs which they were in the habit of importing at the favorable rate of exchange. Producers of "light" manufactured products feared, with very good reason, that the domestic production of previously imported inputs would result in an increase in their costs of production.[62]

Thus, for much of the period under study, "existing or potential branches of manufacturing devoted to the production of intermediate products (basic metals, some chemicals, etc.) as well as other import substituting activities not in manufacturing (such as oil extraction), were probably subject to <u>negative</u> rates of effective protection."[63]

Because the light industries, by definition, were non-capital-intensive, domestic investment was sufficient to initiate import substitution and provide the growth impetus. Interestingly enough, the take-off occurred with only minor support from foreign investment. Foreign capital as a percentage of aggregate fixed capital declined from 41.8 percent and 34.4 percent in 1920 and 1927, to 27.2 percent, 20.4 percent, and 5.4 percent in 1934, 1940, and 1949, respectively.[64] The rapid decline that occurred between 1945 and 1949 resulted mainly from Perón's nationalization of foreign-owned railroads and public services. Thus, between 1945 and 1949, foreign fixed capital declined from $4.26 billion (1950 prices) to $1.74 billion.[65] Unfortunately, by 1948-50, most of the potential import substitution that could be expected from <u>simple</u>

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[62]Ibid., pp. 50-52.

[63]Ibid., pp. 49-50.

[64]Aldo Ferrer, The Argentine Economy, trans. Marjory M. Urquidi (Berkeley, Calif.: University of California Press, 1967), p. 229.

[65]Ibid.

branches of manufacturing had been exhausted. Further economic growth necessitated either the domestication of the heavy basic goods industries (i.e., machinery, oil, steel, etc.) or a big push in the export sector.

Although imports as a percentage of gross national product had declined from 25 to 13 percent, the Argentine economy was (and still is), if anything, even more dependent on the outside world. More than 90 percent of its imports were raw materials, intermediate, and capital goods, inputs for the Argentine manufacturing sector.[66] In this situation, if the capacity to import (in the long run determined by export earnings) declines or does not keep pace with the growth of the manufacturing sector, then already established industries will be forced to "slow down" and an economic contraction will result. To repeat, if an economy's import bundle consists primarily of inputs, necessary for the continued operation of existing industries, a decrease in the capacity to import can adversely affect the economy, closing down industries not because of insufficient aggregate demand, but rather because of the inability to import strategic inputs in adequate quantities. This is what David Felix calls a quasi-Keynesian state; that is, there is excess labor and underutilized resources--what is lacking is the capacity to import.[67]

Unfortunately, a decrease in the capacity to import did occur in the late

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[66]Plan Nacional de Desarrollo, 1965-69 (Buenos Aires: Consejo Nacional de Desarrollo, 1965), p.28.

[67]David Felix, "Beyond Import Substitution: A Latin American Dilemma," a paper presented to the Seminar on Strategy for the Foreign Sector and Economic Development, Buenos Aires, September 7 to September 10, 1966 (Buenos Aires: Center of Economic Research, DiTella Institute, 1966), p. 6.

nineteen-forties. During 1945-47, exports boomed, primarily due to the demand for

food from a war exhausted Europe. Encouraged by this boom, Juan Perón, in a burst

of nationalism, dissipated foreign exchange reserves by purchasing the railroad and

telephone systems from the British and by buying obsolete battleships and planes for

the Argentine military. Thus, between 1946 and 1952, foreign exchange reserves fell

from a record high of $1.69 billion to a then record low of $0.18 billion.[68] At the

same time, as the agricultural economies of Europe revived, the price of agricultural

commodities in world markets began to decline and consequently, so did Argentine

export earnings. Export earnings which were $1,612 million and $1,624 million in

1947 and 1948 respectively, fell to $1,060 million in 1949.[69] For the period 1951

through 1961, exports averaged only $908.5 million annually.[70] Argentina, which

heretofore had almost always had positive balances in the current account, now began

to have periodic and large deficits.[71] Thus, the ability to create new industries was

severely limited. New industries would have required extensive amounts of new

capital imports and foreign exchange was just not available for such purposes. The

small amount of foreign exchange that was generated by exports was needed to finance

the importation of inputs (raw materials, intermediate goods, etc.) necessary for the

continued operation of the already existing industries. Apparently, the heavy basic

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[68]Argentina Económica y Financiera, op. cit., p. 301.

[69]United Nations, Department of Economic Affairs, Statistical Yearbook 1949-50 (New York, 1950), p. 365.

[70]Plan Nacional de Desarrollo, op. cit., p. 25.

[71]Argentina Económica y Financiera, op. cit., pp. 298-99.

goods industries could not have been established without foreign capital and the foreign exchange which it could provide.

There was, of course, an alternative to direct foreign investment. If the government could have somehow implemented a program to increase the productivity of the agricultural sector and if the generated surplus could have been exported, then the resulting increase in foreign exchange could have been used to finance capital imports for the <u>new</u> industrial sector. And, in fact, starting in 1950, the government (and subsequent governments) did begin to realize the importance of the agricultural sector and instituted measures to stimulate it. The methods suggested and imposed were traditional and what I call "passive"; better prices, easy credit, favorable exchange rates for the importation of agricultural equipment and the encouragement of the immigration of foreign agricultural workers.[72] Thus, beginning in 1950, the internal terms of trade (defined as the ratio of agricultural prices to industrial prices) began to move in favor of the agricultural sector. This trend is shown in Table 4. Although agriculture responded to this stimulus, nevertheless, by 1961, agricultural production (in physical terms) was scarcely above the 1946 level (see Table 5). In fact, between 1935-39 and 1960-64, agricultural output increased by only 0.4 percent per year; with an annual population increase of 1.8 percent, the result was an annual net decline in agricultural product per person of 1.4 percent.[73] Many people have speculated as to the cause of this agricultural stagnation. Wheelwright and

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[72]Javier Villanueva, The Inflationary Process In Argentina, 1943-60, Center of Economic Research, DiTella Institute (Buenos Aires: DiTella Institute, 1966), p. 133.

[73]Ferrer and Wheelwright, op. cit., p. 513.

TABLE 4

INTERNAL TERMS OF TRADE (1950 = 100)

1943	97.0
1944	87.2
1945	101.6
1946	122.6
1947	106.5
1948	100.9
1949	91.3
1950	100.0
1951	111.3
1952	113.2
1953	128.2
1954	111.3
1955	104.0
1956	116.0
1957	125.1
1958	130.2
1959	147.3
1960	145.3

Source: Javier Villanueva, The Inflationary Process in Argentina, 1943-60, op. cit., p. 90.

TABLE 5

INDEX OF AGRICULTURAL PRODUCTION
(Base: 1943 = 100)

Year	Physical Volume of Agricultural Production
1943	100.0
1944	126.9
1945	104.0
1946	180.7
1947	154.0
1948	157.7
1949	126.0
1950	108.8
1951	122.6
1952	99.6
1953	173.9
1954	148.7
1955	152.4
1956	155.3
1957	177.7
1958	202.9
1959	196.2
1960	188.9
1961	184.0

Source: Javier Villanueva, The Inflationary Process in Argentina, 1943-60, op. cit., p. 24.

Ferrer attribute it to multiple factors such as the "drastic and frequent changes in price relationships, the lack of a consistent policy on agricultural research and extension . . . the low usage of fertilizer, pesticides, and mechanical equipment, inadequate marketing, and the land tenure system."[74] Why then did the government not attempt a more vigorous agricultural program? It may be that economic reasons were the basis of this decision. From 1947 to 1957, there was an almost continual decline in the external terms of trade (see Table 6). This alone would tend to work against the success of a growth strategy based upon a dominant agricultural sector. But more than likely, the reluctance to undertake radical agricultural reforms was based upon political factors as well. Any land reform program would have, of course, threatened the still powerful landed aristocracy and apparently Perón and subsequent presidents feared the political repercussions of such a challenge. On the other hand, a concentrated government research and extension effort would have enriched the landed class and this would not have been palatable to the strong labor movement that exists in Argentina.[75] Whatever the logic, Argentine development strategy has not stressed the agricultural sector. Instead, prime emphasis has been placed upon the importance of a growing industrial sector, and as pointed out before, this could only have been accomplished with the aid of direct private foreign investment.

Encouraging the entry of foreign investment is not an easy or popular task for

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[74]Ibid., p. 5.14.

[75]The germs of these ideas were drawn from some observations of David Felix. See David Felix, Industrializacíon Sustitutiva de Importaciones y Exportacíon Industrial en la Argentina, Center of Economic Research, DiTella Institute (Buenos Aires: DiTella Institute, 1965), p. 6.

TABLE 6

INDEXES (1950 = 100) OF EXPORT AND IMPORT PRICES IN U. S. DOLLARS

Year	Export Prices	Import Prices	Terms of Trade Export Prices/ Import Prices
1943	49.1	58.5	83.5
1944	54.1	63.9	84.6
1945	59.7	68.1	87.7
1946	82.4	68.5	120.3
1947	122.1	84.9	143.8
1948	136.7	96.5	141.7
1949	126.2	107.1	117.8
1950	100.0	100.0	100.0
1951	132.1	120.6	109.5
1952	108.2	143.8	75.2
1953	110.7	110.7	100.0
1954	99.4	110.4	90.0
1955	98.8	112.3	88.0
1956	91.8	114.9	76.6
1957	82.4	113.6	72.5
1958	78.2	102.1	76.6
1959	77.1	95.2	81.0
1960	82.4	97.2	84.5

Source: Javier Villanueva, The Inflationary Process in Argentina, 1943-60, op.cit.,
p. 89.

an Argentine president. The people are intensely nationalistic[76] and terms like "im-

perialism" and "foreign domination and exploitation" are freely tossed around, in all

social and economic levels. So Perón was faced with the following dilemma. He

could have instituted some sort of radical agrarian reform and, therefore, have in-

curred the displeasure of urban labor or the landed aristicracy, or he could have en-

couraged the entry of foreign investment and have incurred the wrath of all segments

of the population. Faced with such a predicament, Perón did what any good politi-

cian would have done--he vacillated and did nothing. Thus, during the period 1950-54,

per capita gross domestic product was virtually constant, falling by three-tenths of one

percent for the period as a whole.[77]

In September of 1955, Perón was relieved of his duties and a military govern-

ment took control until May, 1958, when Arturo Frondizi was elected President.

Upon assuming office, Frondizi found himself faced with nearly the same economic

situation that had confronted Perón in 1949-50. In brief the situation was as follows:

1. Those industries of the manufacturing sector which technically could be

established without imported inputs (i.e., "light," non-capital intensive industries)

had already been established and had exhausted their growth potential.[78]

2. The remaining industries of the manufacturing sector which had not been

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[76]Arthur P. Whitaker, Argentina (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1965), p. 3.

[77]Comments on Argentine Trade, September, 1966, p. 14.

[78]I have defined an industry with "growth potential" as being one that has a growth rate that exceeds that of the GNP.

established or exhausted their growth potential (i.e., the "heavy," basic, capital

intensive industries) required extensive amounts of imported inputs.

3. The domestication of the "input industry" (i.e., machines, special parts,

etc.) required significant amounts of imported capital also.

4. The level of foreign exchange was low; that is, it was not sufficient to

finance new imports on a large scale.

5. The import bundle consisted overwhelmingly of raw materials, intermedi-

ate goods, and other inputs needed for established industries.

6. The foreign exchange generated by the export sector was only sufficient

to finance the import needs of the already established industries.

7. The agriculture-export sector was stagnant and it was thought that it

would remain stagnant, either for economic or political reasons.[79]

Given the above situation, foreign investment becomes the only source of

growth and the attraction of it beomces a necessary but not a sufficient condition for

further development. Once this fact is realized, the subsequent activities of Arturo

Frondizi make sense.

Arturo Frondizi was a life-long, left-wing radical who was known in the

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[79]Of course, it could be argued that even if it were not possible to stimulate agricultural exports, there remained the possibility of exporting "non-traditional" goods (i.e., manufactured goods). Although lip-service was paid to the need for diversification and although some efforts were made in this direction, such was not and has not been a primary objective of Argentine development efforts. Perhaps this is because non-traditional exports have traditionally played such a small role in the export sector. For example in 1956, manufactured exports accounted for little more than 2 percent of total export earnings; see Plan Nacional de Desarrollo, op. cit., p. 26.

United States as "a caterer to Peronistas and communists."[80] Needless to say, he

was viewed with some skepticism and alarm in Washington. Frondizi was intensely

nationalistic and was obviously influenced by Marxist thought. For example, he often

"expressed the convictions that Argentina must be strong, independent, and sovereign;

that the obstacles to this were the foreign imperialist nations and the grasping inter-

national monopolies that were allied with Argentina's traditional oligarchy."[81] Peter

G. Snow gives the following description of the pre-1958, Frondizi social and econ-

omic program:

> According to Frondizi, there should be three elements in the socio-
> economic revolution that he felt was necessary to bring Argentina into
> the community of world powers. The first was agrarian reform--"without
> agrarian reform there is no possibility of solving our economic problems."
> He was somewhat hesitant as to the shape this reform should take. On
> the other hand, he felt that "it is necessary to give access to the land
> immediately to whoever works it," yet he was worried about the inef-
> ficiency of a multitude of very small farms. He seemingly would have
> preferred large cooperatives which should greatly increase production,
> but he did not want them forced upon the populace. The second step was
> to be industrialization. This, he thought, was the only way Argentina
> could defeat the designs of the imperialist nations which were trying to
> keep the country a producer of raw materials and a market for their
> industrial products. Frondizi talked a great deal about economic coop-
> eration among all Latin American nations in simultaneous development
> and industrialization. He believed that with sufficient planning and
> cooperation the continent could become virtually self-sufficient, and
> thus deliver itself from the clutches of foreign imperialists. In this in-
> dustrialization phase the government was to play an important role. He
> would have the state direct and/or regulate the nation's economy in
> whatever way was necessary. The third step Frondizi termed "democrat-
> ization of the economy." He would have immediate nationalization,

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[80]Harold F. Peterson, Argentina and the United States, 1810-1960 (New York: University Publishers, Inc., 1964), p. 509.

[81]Robert N. Burr, Our Troubled Hemisphere (Washington: The Brookings Institution, 1967), p. 117.

with just compensation, of all the nation's public services and all monopolies, foreign or domestic. Except for these two areas, however, Frondizi did not favor indiscriminate nationalization. He said it should be undertaken only if it would assure better services or greater production, for "nationalization is not a panacea." In general, the economic program advocated by Frondizi prior to 1958 was quite similar to that of Haya de la Torre, the Peruvian Aprista leader, whom he once referred to as the number one citizen of America.[82]

Nevertheless, within months of assuming the Presidency, Frondizi changed his economic philosophy, became a confirmed proponent of "laissez faire" capitalism, welcomed and encouraged foreign investment, and became "the most pro-American president in Argentine history."[83]

One of Frondizi's first acts as President was to sign petroleum exploration and exploitation contracts with the following foreign oil companies: Ohio Oil, Continental Oil, Esso, Shell, Union Oil, Tennessee, Pan American and Banca Loeb.[84] Despite the unpopularity of such a move, Frondizi, apparently, had little choice in the matter; something simply had to be done to alleviate the critical balance of payments situation. In 1957, the deficit in the merchandise account was $336 million and in 1958, $239 million.[85] Moreover, the supply of foreign exchange was extremely low. For 1957, the end-of-year net supply of gold and foreign exchange was $34.8 million. By the end of 1958, the net supply of gold and foreign exchange had suffered

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[82]Peter G. Snow, Argentine Radicalism (Iowa City, University of Iowa Press, 1965), p. 79.

[83]Arthur M. Schlesinger, Jr., A Thousand Days (Greenwich, Conn.: Fawcett Publications, Inc., 1965), p. 168.

[84]Villanueva, op. cit., p. 19.

[85]Plan Nacional de Desarrollo, op. cit., p. 25.

a net loss of $214.2 million for an end-of-year deficit of $179.4 million.[86] Some

sort of program of import substitution had to be undertaken to save foreign exchange

and oil was an obvious candidate. For many years petroleum imports accounted for

approximately one-fifth of the total import bill. By and large, the Frondizi contracts

were successful in saving foreign exchange. In 1957, combustibles and lubricants

accounted for 24.2 percent of the total import bill, but by 1963, this category

accounted for only 5.8 percent. In absolute terms, between 1957 and 1963, the

dollar value of such imports fell from 317.5 million to 57.4 million.[87] It should be

noted that even these impressive figures understate, in two ways, the import substitu-

tion effort that occurred in petroleum. First, the category "combustibles and lubricants"

includes coal, the deposits of which are insignificant in Argentina, and which must,

therefore, be imported. Secondly, "technically Argentina can never be self-suffi-

cient in petroleum products, because the type of oil found in Argentina does not fur-

nish some needed derivatives, and there will always be the need to import some

special kinds of crude oil (especially for lube oil and asphalt)."[88]

In December of 1958, Frondizi announced that the government was instituting

a Stabilization Plan under the "auspices" of the International Monetary Fund. Basically,

the Plan sought to end inflation[89] by orthodox fiscal and monetary restraints.[90] The

[86]Argentina Economica y Financiera, op. cit., p. 301.

[87]Plan Nacional de Desarrollo, op. cit., p. 27.

[88]Herring, op. cit., p. 774.

[89]The cost of living index had increased by 25% in 1957 and by 82% in 1958; see Villanueva, op. cit., p. 71.

[90]Eprime Eshag and Rosemary Thorp, "Economic and Social Consequences of

nucleus of the Plan was to be formed by the following measures:[91]

1. A decrease in the rate of increase of the supply of money, defined as the total amount of currency bills, coin, and bank demand deposits.

2. An abandonment of price controls (except on rents) and subsidies. This was to include also an increase in government owned railway fares, and other government utility rates. The purpose of this was twofold: to balance the federal budget, and to allow market forces a more important role in the allocation of resources.

3. A severe limitation on wage increases, including all cost-of-living escalator clauses.

4. Devaluation of the peso and a return to a freely-fluctuating exchange market. Although all quantitative import restrictions were removed, the government did impose ad valorem surcharges on imports, which varied from zero to 300 percent. Those most essential to the continued operation of the economy were charged either zero, 20, or 40 percent. All other imports were taxed at the rate of 300 percent. In addition, export retentions[92] were placed upon all exports, except manufactured

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Orthodox Economic Policies in Argentina in the Post-War Years," Bulletin of the Oxford University Institute of Economics and Statistics, XXVII (February, 1965).

[91]The following description of the Stabilization Plan was drawn primarily from two sources: Carlos F. Diaz Alejandro, Exchange-Rate Devaluation in a Semi-Industrialized Country (Cambridge, Mass.: The M.I.T. Press, 1965), pp. 145-48, and Villanueva, op. cit., pp. 17-20.

[92]The term "export retention" is an Argentine term for export taxes. During 1959-61, export retentions represented a little more than one-eighth of national government tax receipts. Source: Diaz Alejandro, Exchange Rate Devaluation in a Semi-Industrialized Country, p. 166.

goods. The retentions were either 10 or 20 percent and their purpose was to prevent windfall gains for the export sector.

5. The attraction of foreign capital. Special incentives for investment were to be provided to those industries which would "contribute toward the substitution of imports, the expansion of exports or . . . the rational and balanced growth of the national economy."[93]

Although some of the specific goals of the Plan were realized, for the most part, the global objectives were not attained. To begin with, the inflationary process was scarcely halted: in 1959, the increase in the cost-of-living index was a phenomenal 115 percent and in 1960, 27 percent. It was not until 1961 that the rate of increase was brought down to a still high but tolerable 14 percent.[94] Gross domestic product increased by a modest 7 percent for the period 1958-61, or by little more than 2 percent annually. This was followed by a recession and by 1963, gross domestic product was 4 percent below the level attained in 1958.[95] The results according to the five points mentioned above were as follows.

1. The expansion of the money supply continued at a high rate. In 1959, the rate of increase of the money supply was 43.8 percent, only slightly lower than the pre-Plan rate of 46.2 percent for 1958. In 1960, the rate of increase was 25.7

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[93]Quote from Argentine Law 14.780 (December 4, 1958) on Foreign Investment and Industrial Promotion: see Henry W. Laurant, Factors Affecting Foreign Investment in Argentina (Menlo Park, Calif.: International Development Center, 1963), p. 57.

[94]Villanueva, op. cit., p. 71.

[95]Plan Nacional de Desarrollo, op. cit., p. 16.

percent and it was not until 1961 that it was brought down to 15 percent.[96]

2. Price controls were lifted (except for rents) and public utility rates and fares were increased. These measures were not sufficient to balance the budget but they did help to trim the government deficit from 66.4 billion pesos (1960 pesos) in 1957, to 22.4 billion pesos in 1958, and 11.1 billion in 1959. Nevertheless, by 1962, the government deficit had once again increased to 50.7 billion pesos (1960 pesos).[97]

3. The program to limit wage increases was a success. It, along with the 100 plus percent increase in prices acted to lower labor's share of net domestic product from 57.0 percent in 1958 to 48.7 percent in 1959.[98]

4. The devaluation of the peso was achieved and the surcharges and retentions were instituted.

5. Most importantly, the Plan was successful in attracting foreign investment. By the end of 1960, the government had authorized $350 million of foreign investment in the petroleum industry alone. Of this amount, $205 million was authorized in 1958, and $67 in 1959.[99] Foreign investment in other industries (excluding petroleum) was

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[96]Villanueva, op. cit., p. 9.

[97]Plan Nacional de Desarrollo, op. cit., p. 35.

[98]Argentina: Síntesis Económica y Financiera No. 1 (Buenos Aires: Oficina de Estudios para la Colaboración Económica Internacional, 1961),p.9. It is interesting to note the change in labor's share over time. From 1935 to 1946, labor's functional share was never more than 46.8 percent.However, with the advent of Peron and his pro-labor policies, labor's share increased to 52.4 percent in 1948, and subsequently did not fall below 55.9 percent until 1959.

[99]Laurant, op. cit., p. 18.

a direct result of the new Industrial Promotion Laws, ratified by Congress in December,

1958. These Laws (still operative in mid-1969) provide special incentives for foreign

firms in certain areas of the economy. Enrique Garcia Vazquez gives the following

succinct description of the main features of the Laws:

> The incentives include a series of tax exemptions on facilities and
> profits which are available to enterprises provided that their applica-
> tions are submitted prior to the year 1969. Preferential prices are also
> provided to enterprises for gas, electric power, fuel and transport.
> Capital equipment is given certain tariff and foreign exchange advan-
> tages. And authorization is extended for the entry of foreign personnel
> who are necessary to the development of the enterprises' plans.[100]

Table 7 gives the break-down, by year and by industrial classification, of fore-

ign investment authorizations (excluding petroleum) for the period 1958-63. The imme-

diate effect of the new Laws are of interest. In 1958, when for the most part the

Industrial Promotion Laws were not operative, foreign investment authorizations were

but $16.9 million. In 1959, however, the authorizations were $269 million. It seems

safe to conclude that this increase was due to the new Laws and the concomitant favor-

able change in the entire investment climate. Total authorizations (including petro-

leum) were $336 million in 1959; this represents 2.6 percent of 1958 gross domestic

product.[101]

The industrial break-down of the authorizations for 1958-63, is interesting and

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[100]Enrique Garcia Vazquez, "An Argentine View," How Latin America Views the U.S. Investor, ed. Raymond Vernon (New York: Frederick A. Praeger, Publishers, 1967), p. 59.

[101]Source for gross domestic product, Yearbook of National Accounts Statistics, 1966, op. cit., p. 726.

TABLE 7

FOREIGN INVESTMENT AUTHORIZATION (EXCLUDING PETROLEUM) FOR THE
PERIOD 1958-63, ACCORDING TO INDUSTRIAL CLASSIFICATIONS
(In millions of U.S. dollars)

Industry	1958	1959	1960	1961	1962	1963	Total
Livestock	--	4.7	--	--	1.0	--	5.7
Extractive	--	--	0.5	--	3.5	--	4.0
Foodstuffs & Beverages	1.2	2.7	0.7	--	0.2	0.4	5.2
Textiles	--	2.1	--	0.4	0.8	--	3.3
Construction	--	--	--	--	--	--	--
Wood Products	--	1.4	—	--	--	--	1.4
Paper & Cardboard	--	2.5	0.2	1.2	--	--	3.9
Printing & Publishing	--	0.1	--	--	0.3	--	0.4
Pharmaceutical Products	8.2	3.2	0.4	0.5	1.3	0.5	14.1
Chemical Products	2.5	127.4	0.9	31.6	6.4	--	168.8
Petroleum Derivatives	--	27.3	3.7	2.9	6.7	1.9	42.5
Rubber	--	1.7	1.0	--	0.9	--	3.6
Leather Goods	--	--	--	--	--	--	--
Stone, Glass & Ceramics	--	0.9	--	0.5	--	0.3	1.7
Light Metallurgy	--	1.8	4.4	30.9	42.7	--	79.8
Heavy Metallurgy	2.0	4.2	1.2	5.3	1.3	1.1	15.1
Automobiles & Trucks	--	68.1	1.5	28.0	0.8	5.6	104.0
Tractors	--	4.4	3.1	5.8	2.7	0.2	16.2
Machinery (Non-electrical)	--	9.0	1.4	2.1	2.8	--	15.3
Elec. Machines & Appliances	--	3.5	3.4	11.6	1.6	2.5	22.6
Meat Packing	--	--	--	3.8	--	--	3.8
Public Construction	--	0.7	0.5	0.3	9.4	--	10.9
Marine Shipping	1.4	1.8	10.4	0.4	0.2	--	14.2
Communications	--	0.1	1.4	0.1	0.2	--	1.8
Miscellaneous	1.6	1.4	0.2	0.2	1.4	0.1	4.9
TOTAL	16.9	269.0	34.9	125.6	84.2	12.6	543.2

Source: David Felix, Industrializacion Sustitutiva de Importaciones y Exportacion
Industrial en la Argentina, Center of Economic Research, DiTella Institute
(Buenos Aires: DiTella Institute, 1965), pp. 59-60.

predictable.[102] The bulk of it was for basic, heavy, capital intensive industries.

Four categories, the two types of metallurgy, automobiles and trucks, and chemical

products account for 67.7 percent of the total authorizations, and four other cate-

gories, petroleum derivatives, electrical machinery and appliances, non-electrical

machinery, and tractors, account for an additional 17.8 percent. On completion,

this new investment basically changed the source of growth in the manufacturing sec-

tor. Before 1948-50, the leading sector of the economy was the consumer goods in-

dustries; after 1948-50, the leading sectors were the intermediate and capital goods

sectors. Table 8 shows this quite clearly. Of the total increase in value added in

manufacturing for the period 1948-50 to 1959-61, 86.1 percent of it was derived from

the heavy industries sector. The structure of this investment and its effect on the

Argentine economy will be discussed in greater detail in Chapter IV. Nevertheless,

it should be noted that this new investment did not serve to alleviate Argentina's

economic problems.[103] First, the new capital intensive industries did little to help

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[102]Before a foreign firm can invest in Argentina, it must obtain a permit or authorization, from the national government. This permit allows the foreign firm to invest in some specified sector of the Argentine economy. The fact that an authorization is granted does not necessarily mean that the proposed investment will take place; for, a firm can always decide to postpone the investment or to "scrap" the project entirely. Authorizations, therefore, are only a rough indicator of actual foreign investment. There is, nevertheless, a fairly close relationship between authorizations and subsequent foreign investment. In the period 1958-63, authorizations totalled $543.2 million (see Table 7). In the same period, actual foreign investment equalled $482.7 million. Source: Argentina Económica y Financiera, op. cit., p. 305.

[103]This new investment was successful in establishing or enlarging the productive capacity of many basic industries necessary for future economic growth.

TABLE 8

PARTICIPATION OF BRANCHES OF MANUFACTURING IN THE TOTAL INCREASE
IN VALUE ADDED, 1927-29 TO 1959-61
(Expressed as percentages of the total increase in value added in manufacturing)

	1927-29 to 1948-50	1948-50 to 1959-61
Primarily Consumer Goods Industries	58.6	13.9
Foodstuffs & Beverages	21.6	6.6
Tobacco	3.2	1.5
Textiles	23.5	2.5
Clothing	3.6	0.9
Wood Products	3.1	0.1
Printing & Publishing	-0.4	-0.2
Leather Products	2.8	0.7
Other Manufacturing	1.2	1.8
Primarily Intermediate and Capital Goods Industries	41.3	86.1
Paper & Cardboard	1.0	2.2
Chemicals	4.8	9.4
Petroleum Refining	9.0	12.0
Rubber	2.5	2.9
Stone, Glass & Ceramics	2.4	2.6
Metals	9.0	18.7
Vehicles & Machinery	10.3	26.7
Electrical Machinery & Appliances	2.3	11.6

Source: Carlos F. Díaz Alejandro, Stages in the Industrialization of Argentina, op.
cit., p. 43.

the unemployment situation in the constantly growing urban areas.[104] Of course, this problem is also aggravated by the slow growth in national product. Secondly, it appears that the economy is now no less dependent on the capacity to import than it was in the early nineteen-fifties. In this regard, David Felix has calculated that it required 16 percent more imports to "produce a given level of output in 1960 than in 1953."[105] Apparently, this was due to the fact "that there were sharp changes in the composition of demand favoring the newer import substitutes, and that these would have usually higher import coefficients than the industries whose share of total demand had fallen."[106]

Fortunately, the export sector was somewhat healthier in the early nineteen-sixties than it was during the nineteen-fifties. The volume (in tons) of exports more than doubled from 1961 to 1965, increasing from 7,297 tons to 15,374 tons.[107] Most

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[104]Jorge Katz and Ezequiel Gallo, "The Industrialization of Argentina," Latin America and the Caribbean, ed. Claudio Véliz (New York: Frederick A. Praeger, Publishers, 1968), p. 602.

[105]David Felix, Did Import Substituting Industrialization in Argentina Save Foreign Exchange in 1953-1960? A Report on Some Findings, Center of Economic Research, DiTella Institute (Buenos Aires: DiTella Institute, 1965), p. 19.

[106]Ibid., p. 20. Felix reiterates this point in the following statement. "The proposition that new activities have on balance higher import coefficients is, however, only an empirical hypothesis which could be negated. In our view, it is an almost inevitable occurrence if an import substituting strategy of development is carried on for a considerable length of time in a thin domestic market. For then the composition of output will have to change quite rapidly in order to sustain growth through import substituting types of investments, and this will in time require the introduction progressively of technologically more complex activities which generally tend to have higher import coefficients. The findings of this paper support this hypothesis for Argentina, at least for the period, 1953-60." Ibid., pp. 20-21.

[107]Comments on Argentine Trade, op. cit., p. 17.

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of this increase was at the expense of the Argentine population. As the relative

price of food increased and as the government introduced "meatless days" for two days

per week, per capita food consumption fell, from an average of 3090 calories daily

for the period 1957-59, to 2810 for the period 1960-62, and 2650 for 1962.[108] At

the same time, there was a favorable shift in the external terms of trade, after 1960.

The net results of all this was a significant increase in export earnings. Exports which

had averaged $908.5 million annually for the period 1951-61, averaged $1369.4

million yearly for the period 1962-65.[109] Nevertheless, despite this increase, Argen-

tina remains precariously dependent on the external sector.

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[108]Ferrer and Wheelwright, op. cit., Statistical Appendices, p. 14.

[109]Comments on Argentine Trade, loc. cit.

CHAPTER III

METHOD OF ANALYSIS

This chapter first examines in detail the hypothesis to be tested. This is fol-

lowed by a discussion of the conceptual implications and problems associated with the

test. Finally, I explain the techniques developed for dealing with these problems and

for testing the hypothesis.

THE HYPOTHESIS

Albert Hirschman suggests that balance of payments pressures might induce

import substitution.[1] He argues that a country confronted with balance of payments

problems and unable to finance continued importation of a given product will begin to

produce the previously imported product. The central task of this dissertation is to

test this hypothesis by examining the relevant circumstances in Argentina during the

period 1945-61. Since the late nineteen-forties Argentina has suffered continuous

balance of payments difficulties [2] and thus is a suitable country for such a test. The

initial year was chosen in order to eliminate at least some of the influence of the

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[1]Albert O.Hirschman, The Strategy of Economic Development (New Haven, Connecticut: Yale University Press, 1967).

[2]Balance of payments difficulties are evidenced by the large deficits that have occurred in the current account periodically since the late nineteen-forties (see Table 3, Chapter IV). For the period 1947-67, the current account showed an average

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war, and the terminal year was chosen partly because of data problems and partly for methodological reasons, to be explained later. I was not concerned here with other problems associated with import substitution, such as whether or not import substitution saves foreign exchange or if it is, in fact, as is often alleged, the most efficient development strategy. Rather I concerned myself only with its efficacy, explicitly assuming that import substitution does promote economic growth.

It should be noted that Hirschman's views are somewhat contrary to traditional economic thinking in that he suggests that balance of payments problems might indeed be viewed benignly. He argues that the inability to import a previously imported good tends to set up inducement mechanisms (or forces) which might lead to local production and thus, stimulate economic growth. This is a superficial statement of Hirschman's views, particularly in that it conceals many of his assumptions. First, he assumes that the previously imported product has become part of a "normal" pattern of consumption. Indeed, this is a necessary, but not sufficient, condition for import substitution to take place. In fact, if the previously imported goods "are considered a windfall and an extravagance they will not be judged a firm enough foundation for the building up of domestic industry."[3] Secondly, Hirschman assumes that the domestic market is of sufficient size, so that the production of the good can become economically profitable. Finally, he assumes that the local entrepreneurial propensity is sufficiently developed for domestic production to be undertaken.

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deficit of almost $137 million annually.

[3]Ibid., pp. 173-74.

Hirschman's basic ideas on these points are expressed succinctly in the follow-

ing passage.

> That fluctuations in foreign exchange availability may up to a
> point, accelerate economic development can be shown in the follow-
> ing way. Take first the years during which foreign exchange earnings
> are ample and import restrictions nonexistent. During this period an
> underdeveloped country expands its traditional imports and develops
> a taste, a market, and a need for a number of hitherto unknown and
> unappreciated commodities. As more imported incentive goods become
> available, backward-sloping supply curves of effort are being "unbent"
> and economic operators become more market-oriented in their work
> habits and production efforts. A number of "thresholds" are being
> crossed, but production is not started because of the opposition of the
> importing interests, the difficulties of competing with them, and the
> lack of interest of public authorities.
>
> Come the lean years and imports are restricted in one way or an-
> other; the entrepreneurs then know from the previous phase that the
> size of the home market for some of these imports warrants the build-
> ing up of domestic manufacturing, and such projects now are strongly
> supported by public opinion because the absence or high price of the
> previously imported commodities is felt as a deprivation; in fact, in
> this phase the domestic importers themselves, or the foreign exporting
> interests, often turn producers of the goods they previously shipped
> into the country.[4]

The tools of conventional price theory may be used to clarify this hypothesis.

In Figure 1, D and S represent domestic demand for and domestic supply of an inter-

nationally traded commodity. Initially it is assumed that the international free trade

price is OP_1. Accordingly, domestic firms can and do supply OQ_1 of domestic demand,

with the residual, Q_1Q_2, being filled by imports. It is then assumed that balance of

payments difficulties occur and that the government implements a tariff of P_1P_2 in

order to discourage imports and conserve scarce foreign exchange. The result is to
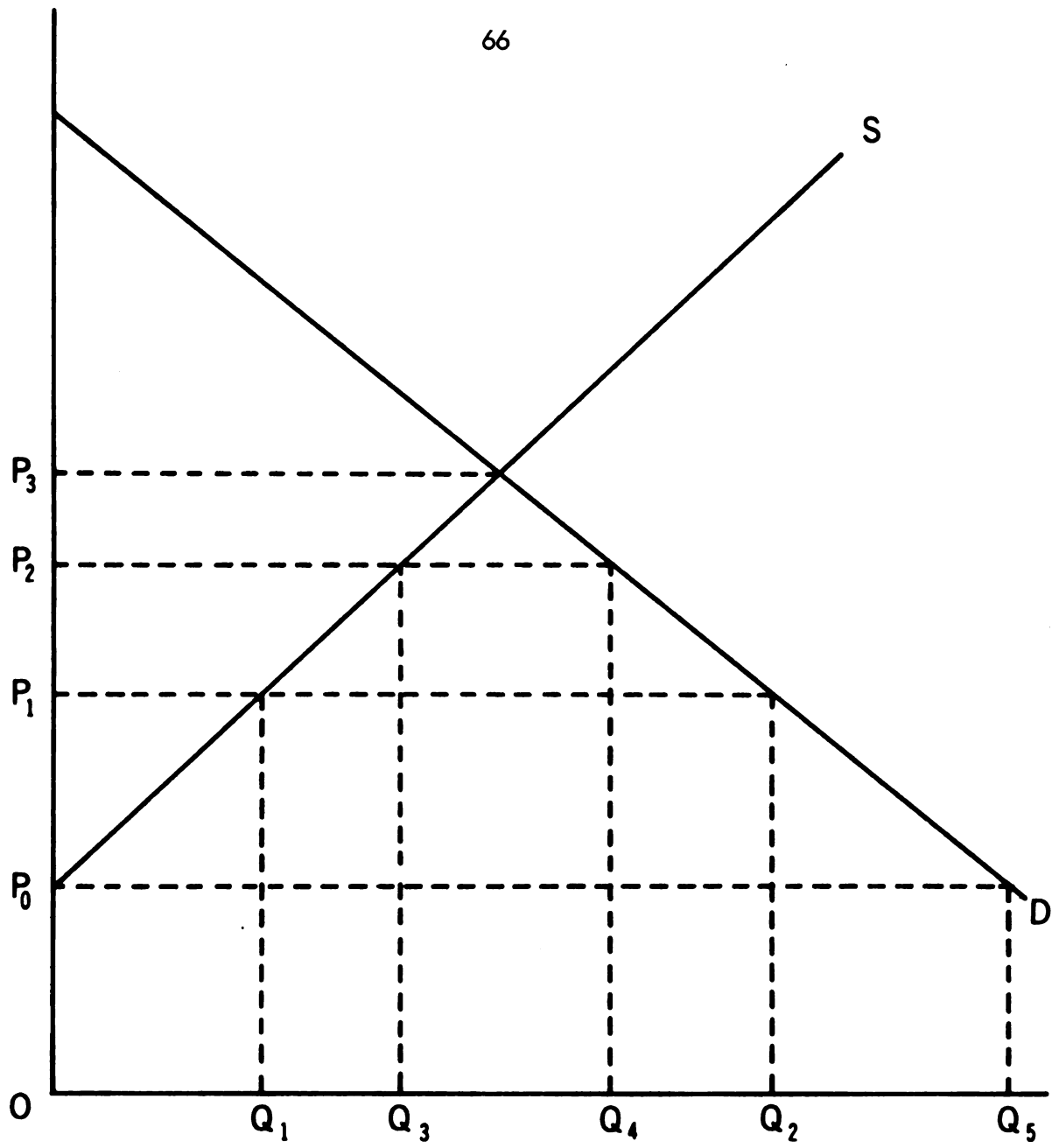
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[4]Ibid.

FIGURE 1:
EFFECTS OF A TARIFF

increase the effective domestic price to OP_2 and to allow domestic producers to expand their output to OQ_3, with the residual of domestic demand, Q_3Q_4, being filled by imports.[5] Here it is assumed that domestic productive capacity already exists and that the tariff allows local suppliers to increase their output. The establishment of an entirely new industry as the result of a tariff can be similarly demonstrated. In Figure 1, a free trade price of OP_o, or below, would mean that potential domestic producers are unable to compete with the lower priced foreign imports and that as a result domestic production cannot profitably take place. A tariff which increases the effective domestic price above OP_o would allow the profitable establishment of domestic productive capacity. A tariff which increases the effective domestic price to OP_3, or above, would eliminate all imports and would enable domestic producers to supply entirely the local market.[6]

Fundamentally, a tariff is a passive governmental action which merely <u>encourages</u> the establishment of a new industry. Potential producers may or may not take advantage of the tariff induced domestic price increase and establish a new industry.

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[5]Figure 1 can also be used to illustrate the effect of quantitative import restrictions. Initially it is assumed that the free trade price is OP_1, with domestic producers supplying OQ_1 and imports of Q_1Q_2 filling domestic demand. If an import quota of Q_3Q_4 is imposed, excess domestic demand equal to $Q_1Q_3 + Q_4Q_2$ will exist. This unsatisfied domestic demand will bid up the domestic price to OP_2 and domestic production will expand to OQ_3; imports will equal Q_3Q_4, the amount of the import quota. In brief, the effect of an import quota of Q_3Q_4 is identical to the effect of a tariff equal to P_1P_2.

[6]The above treatment of protection-induced import substitution is taken from P.T. Ellsworth's The International Economy (Toronto, Canada: The MacMillan Company, 1969), pp. 242-49.

Often a government cannot allow such decisions to rest solely with the private sector

of the economy. If an imported good annually uses large amounts of scarce foreign

exchange and if the imported good is necessary for the continued functioning of the

economy, a government (beset by balance of payments problems) may be forced to

take more direct action and to actively promote import substitution by means of sub-

sidies to potential domestic producers.[7] The effects of a subsidy are illustrated in

Figure 2. Here D and S represent the domestic demand for and supply of an inter-

nationally traded commodity. Initially it is assumed that the free trade price is OP_1.

At this price, domestic producers supply OQ_1, with the residual of domestic demand,

Q_1Q_2, being satisfied by imports. A subsidy to domestic producers lowers their costs

of production and shifts the supply curve to S'. Domestic producers now supply OQ_3

and imports equal to Q_3Q_2 fill domestic demand. Here it is assumed that domestic

producers already exist and that a subsidy allows them to expand their output. The

subsidy-induced establishment of an entirely new industry may similarly be illustrated.

At an assumed free trade price of OP_0, potential producers are unable to compete and

profitable domestic production cannot take place. Instead, imports equal to OQ_5

satisfy domestic demand. A subsidy lowers costs of production to potential producers

and shifts the supply curve from S to S', thus allowing the establishment of domestic

productive capacity. After a subsidy, domestic producers supply OQ_4, with imports

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[7]Oil assumed such strategic importance in Argentina during the late nineteen-
fifties. Typically, one-fifth to one-fourth of total export earnings was used to import
oil, a good clearly necessary to the continued functioning of the Argentine economy.
Accordingly, the Argentine government, confronted with severe balance of payments
difficulties, used subsidies to foreign producers in order to ensure successful import
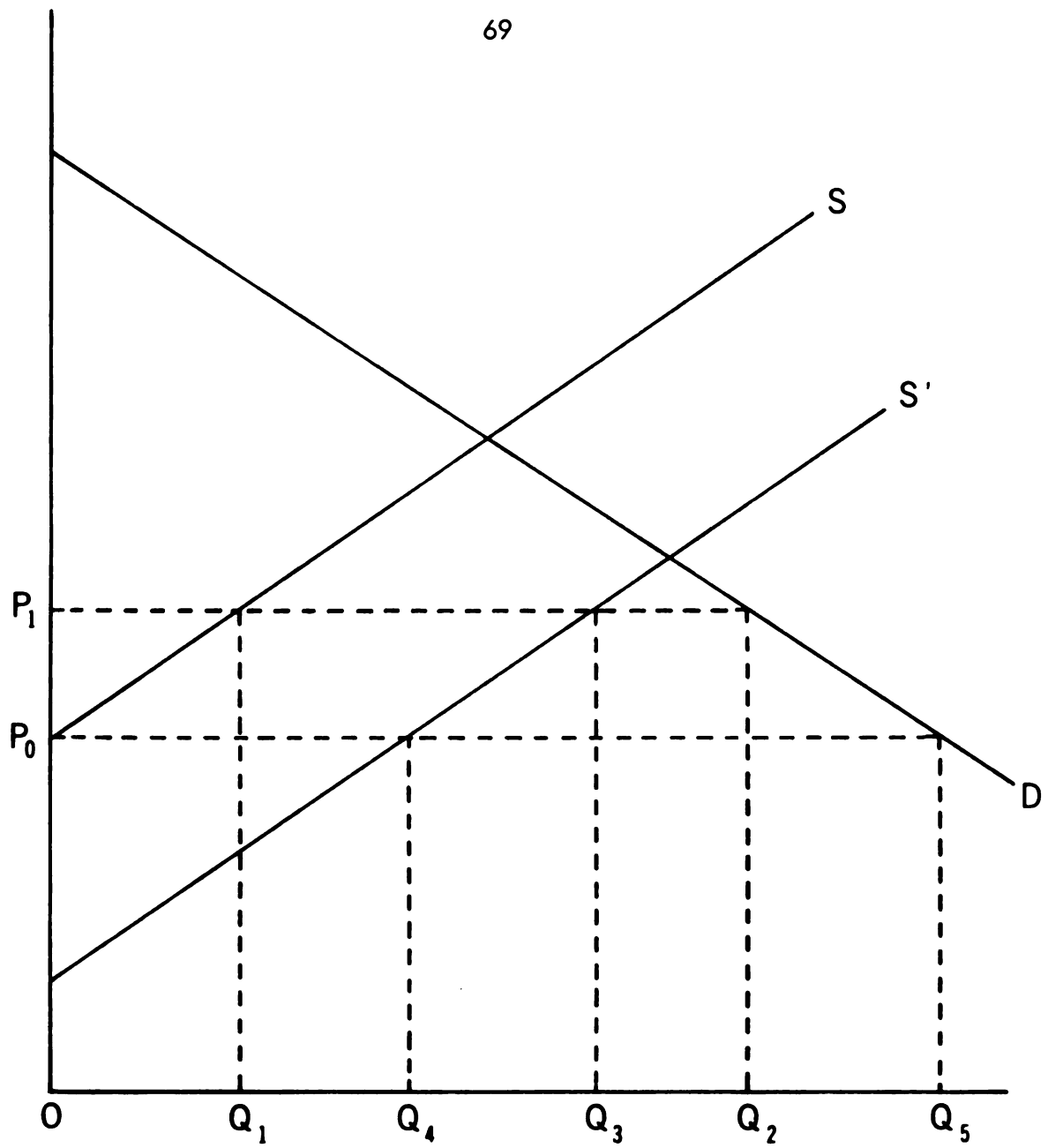substitution.

FIGURE 2:
EFFECTS OF A SUBSIDY

of Q_4Q_5 filling domestic demand.[8] In practice, both protection and subsidies are often used to stimulate import substitution.

Although Hirschman's analysis seems, at first blush, rather simple and obvious, there are real conceptual problems which arise in attempting to test it. In brief, the variables dealt with in the analysis have to be, in some way, operationally defined. Below I discuss these problems and outline solutions.

DEFINING A BALANCE OF PAYMENTS PRESSURE

One of the more difficult facets was defining operationally a "balance of payments pressure." One would be tempted to conduct this kind of analysis entirely in terms of foreign exchange availability. Indeed, this seems to be Hirschman's definition of a "balance of payments pressure."[9] Using simple foreign exchange quantities, however, still requires definition of what is and what is not a "low level" of reserves, i.e., to what level do reserves have to fall before the government becomes concerned and

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[8]Hirschman's treatment of protection and subsidies here should be noted. That a government, confronted with severe balance of payments pressures, will resort to various protective devices, is clearly stated ("Come the lean years and imports are restricted in one way or another." Hirschman, op. cit., 173.) but not analyzed in detail. That this protection will tend to induce import substitution is also clearly stated but again not analyzed in detail. In this regard he cites a 1952 Department of Commerce study which "showed that two out of five companies had started their foreign operations in order to maintain a market in which they had become established, mainly when loss of this market was threatened by tariffs or other import barriers." (Italics mine, Hirschman, op. cit., p.174.) That governments will use subsidies to implement import substitution is nowhere suggested by Hirschman. Nevertheless, the above brief discussion of subsidies is warranted for the sake of analytical completeness.

[9]Hirschman, op. cit., pp. 173-74.

takes some form of remedial action.[10] Fortunately, Argentine institutional arrange-

ments suggested a pragmatic solution to this problem. A discussion with Eduardo A.

Zalduendo, a former vice president of the Argentine Central Bank, disclosed that

Argentine banking authorities generally do not become greatly concerned as long as

the foreign exchange level (defined as the net supply of foreign exchange)[11] is suffi-

cient to pay for three months of annual imports.[12] Therefore, as long as the end-of-

year net supply of foreign exchange equalled, at least, 25 percent of annual imports,

a strong pressure was not felt by the authorities and, hence, did not exist. This is not

to say that there were no balance of payments difficulties in these years. In fact, from

1948 to the present, Argentina has suffered continuous balance of payments problems,

in terms of declining foreign exchange reserves, deficits in the current and capital

accounts, etc., but such problems do not necessarily create strong pressures. For

example, a declining level of foreign exchange is not a strong pressure if the absolute

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[10]I am assuming that other means of financing imports are not available; that
is, that the net inflow of private and official capital is negative, small, nonexistent
and/or erratic, and that the export sector is stagnant. (This seems to be a fairly ac-
curate description of the Argentine balance of payments picture in the nineteen-fif-
ties.) In this situation, the absolute amount of foreign exchange on hand becomes
the key determinant of the "capacity to import" and, therefore, it is movements in
this variable which will induce government action. For a good but brief definition of
the "capacity to import," see Pan American Union, General Secretariat of the Organ-
ization of American States, Latin America: Problems and Perspectives of Economic
Development, 1963-64 (Baltimore: The Johns Hopkins Press, 1966), p. 33.

[11]The net supply of foreign exchange is defined as the algebraic sum of Central
Bank holdings of gold, foreign exchange, and assets convertible into foreign exchange
minus claims on foreign exchange. For a more complete definition, see Table 1 in
Chapter IV.

[12]In Argentina, foreign exchange reserves at the end of the year are typically
higher than at other times of the year. This is primarily the result of the uneven timing

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amount of foreign exchange is high. By the same token, a deficit in the current or

capital account is not a strong pressure if foreign exchange is plentiful. What we

were looking for were strong pressures which virtually compelled some sort of reme-

dial action by the government which might give rise to import substitution inducement

mechanisms.

In order to obtain a measure of such pressure, I divided the end-of-year net

supply of foreign exchange by total imports for the same year. This yielded a coeffi-

cient which indicated a period of strong pressure whenever it dipped below the 25

percent level.[13]

It would have been clearly unwise, however, to have slavishly applied the "25

percent rule"; that is, to have labelled a year with a 24 percent coefficient as a year

of strong pressures and one with a 26 percent coefficient as a period of weak pressures

would have been excessively arbitrary. Accordingly, it was helpful to develop another

measure of balance of payments pressures in order to test the first measure. Agreement

of the two measures gives greater confidence in the "labelling system" for years of

strong and weak pressures. Clearly, such items as the merchandise account balance,

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of export sales. Foreign exchange from meat exports is forthcoming throughout the en-
tire year. But export income from wool and grain is mainly received in the Argentine
spring and summer, respectively. Thus, experience has demonstrated that year-end
foreign exchange reserves should be equal to at least 25 percent of annual imports in
order to insure sufficient foreign exchange during the lean months of June, July and
August when export earnings are at their lowest level.

[13]Certainly, the use of monthly foreign exchange data instead of year-end data
would have resulted in greater precision in the timing of the "pressure periods." Gener-
ally, such data (in pesos only) are published in the monthly Statistical Bulletin of the
Central Bank. Unfortunately, this publication did not appear from August, 1948 to
January, 1957--a lapse covering the greater part of my period of interest. Since results
are not expected to be precise, the use of year-end data is acceptable.

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the current account balance and the capital account balance were, and ought to have been, of some interest, as they are all indicative of balance of payments pressures. Therefore, I have compared the current account balance with the year-end foreign exchange level. I chose the current account for two reasons. First, the current account includes the merchandise account, and the latter is, therefore, not overlooked. I did not examine the capital account mainly on the advice of Eduardo Zalduendo, who explained that the Argentine banking authorities typically do not use the capital account as a basis for their decision-making. The capital account includes autonomous capital movements and it has been found that in Argentina such movements are too erratic to be used as a basis for prediction and meaningful economic analysis.

Once again I was faced with the problem of delineating between strong pressures (capable of inducing import substitution) and weak pressures (supposedly incapable of inducing such substitution). Certainly, the occurrence of an active (positive) balance on the current account posed little difficulty. This would not contribute to a pressure and is, in fact, indicative of a lack of pressure. The difficulty arose in trying to determine the relative strengths of passive (negative) balances. For example, at first blush, a deficit of $200 million is more serious than one of $20 million. Suppose, however, that the $200 million deficit occurs in a year in which the foreign exchange stock is $400 million and that the $20 million deficit occurs when foreign exchange holdings are $15 million. Which is the more serious situation? Which is more likely to induce some sort of governmental action which would encourage import substitution? This somehow had to be decided. As a solution to this problem, I labelled those years in which the deficit was maintainable, as years of weak balance of payments pressures,

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and those years in which the deficit was <u>not</u> maintainable, as years of strong pressures. If, for example, the annual deficit were $200 million and if year-end foreign exchange reserves were equal to or in excess of this figure, then this would mean that the country could have endured a deficit of the same magnitude the following year, without obliterating foreign exchange holdings; thus <u>strong</u> pressures did not exist. (Here again, what I was looking for was not just pressures but rather <u>strong</u> pressures.) On the other hand, it would seem that when a negative current account balance is <u>not</u> maintainable for another year, <u>strong</u> pressures can be said to exist. Stating this another way, assume that in year 1, the deficit in the current account is $200 million and that the remaining reserves (i.e., after financing the deficit) are $220 million. This would mean that the year 1 deficit could be maintained in year 2 and that at the end of year 2, $20 million in reserves would remain. It may be asked what would be the reaction of the authorities at the end of year 1? Will they allow another $200 million deficit to occur or will they take action immediately? It is indeed quite possible that remedial action will be taken immediately. But the point is that they <u>do not have</u> to take action now, whereas, when the deficit is greater than year-end reserves, they are forced to take action. It is well known in Argentina that political factors are frequently more important than economic factors when such decision making takes place. When the deficit is not maintainable, however, economic factors assume more importance, political considerations notwithstanding.[14] To reiterate that which has been said before,

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[14]My approach assumes that authorities wait for pressures to develop and then react to eliminate them. On the other hand, it could be argued that the authorities carefully examine trends in the external sector, anticipate pressures, and act to eliminate them before they in fact occur. The later behavioral hypothesis does not

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the analysis attempts to isolate not just periods of pressure, but rather, periods of

strong pressure that force action on the part of the government.

Import substituting industrialization is often undertaken for a number of rea-

sons. For example, in the late nineteen-forties and early nineteen-fifties, Perón en-

couraged substitution in an attempt to increase job opportunities for the "shirtless"

masses in order to solidify and expand his political power base. Other governments,

throughout Latin America, have stimulated import substitution in the belief that "in-

dustrialization" is the same thing as "economic growth." What I tried to do was to

select those periods in which the economic forces predominated, and in which the re-

sulting pressures were of such a magnitude as to force government action toward a sub-

stitution policy, justified not as just a political desire, or expediency, but rather

justified because of economic contingencies. This attempt at defining pressures opera-

tionally leads us into as yet uncharted areas.[15]

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seem acceptable for several reasons. First, it assumes an ability to predict that is very
likely beyond the capability of contemporary social scientists. Secondly, if such be-
havior were common in Argentina, then it would be difficult to account for the large
deficits in the current account that periodically occurred in the 1947-61 period.
Finally, such a behavioral assumption overlooks the political ramifications of such
actions. A decision-maker who acts on the basis of a yet-to-be-evident balance of
payments pressure opens himself to political attacks from those individuals adversely
affected by his actions; and, since the balance of payment pressure is not yet evident,
their attacks may seem warranted and place the decision-maker in a difficult position.
On the other hand, a decision-maker who simply reacts to an already overt balance of
payments pressure is in a much less precarious position since clearly something must be
done to alleviate the situation.

[15]My techniques are related to Fritz Machlup's descriptive discussion of the
difference between the "need" for monetary reserves and the "desire" for reserves. As
Machlup notes, banking authorities typically "desire" as many reserves as it is possible
to obtain. In my model which seeks to quantify Machlup's descriptive approach, the

MEASURING IMPORT SUBSTITUTION

In order to measure import substitution I relied on the following equation from

Alfred Maizels' Industrial Growth and World Trade.[16]

$$dM = O_1 (m_1 - m_0) + m_0 (O_1 - O_0)$$

Here "dM" is the change in imports between two points in time. Physical units were

used to avoid valuation problems. "O" is total supply (i.e., the sum of imports and

domestic production of some good, "m" is the import component of total supply ex-

pressed as a percentage, and subscripts "1" and "o" refer to time periods.

In this equation, $m_0 (O_1 - O_0)$ measures the total increase in imports that

would have occurred, from the increase in domestic use, if the import coefficient had

remained constant. On the other hand, $O_1 (m_1 - m_0)$ shows the decrease in imports

arising from gross import substitution. When this term is divided by the former term,

an index number is obtained which can be used to ascertain whether or not there has

been net import substitution.

A simple numerical example will clarify this technique. Assume that in year

"o" total supply is 100 units (i.e., $O_0 = 100$) and that of this amount, 50 units are

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authorities would desire a level of reserves many times greater than annual imports. But if reserves were only 100 percent of imports no dire consequences would result. A "need," on the other hand, implies that an undesirable consequence will result if the need is not fulfilled. In my model, the obtaining of foreign exchange equal to at least 25 percent of annual imports is necessary to prevent the undesirable conse- quence of not being able to pay for imports in the lean months of June, July and August. For a discussion of the difficulties of measuring the "need" for reserves, see Fritz Machlup, "The Need for Monetary Reserves," Reprints in International Finance, No. 5 (October, 1966), Princeton University Press.

[16]Alfred Maizels, Industrial Growth and World Trade (Cambridge: Cambridge University Press, 1963), p. 151.

imported (thus, m_o = .50). Further assume that in year 1 total supply increases to 120

units (i.e., O_1 = 120) and that of this amount, 54 units are imported (note: m_1 has

declined to a value of .45). Placing these values in the equation we obtain the

following:

$$
\begin{aligned}
dM &= 120 \ (.45 - .50) + .50 \ (120 - 100) \\
&= 120 \ (\quad\ - .05) + .50 \ (80) \\
+4 &= \ -6 \qquad\qquad\quad + \ \ 10
\end{aligned}
$$

Thus, if the import coefficient had remained constant, imports would have

increased by 10 units. In fact, imports only increased by 4 units. Thus -6 is the

amount of import substitution that occurred in physical terms between years "o" and

"1." Dividing -6 by 10, a ratio of -60 percent is obtained; which is to say that 60

percent of the increase in imports (which would have occurred if the import coeffi-

cient had remained constant) was replaced by domestic production. Referring to a

-.6 coefficient as being indicative of positive import substitution is mathematically

correct, but needlessly confusing. Therefore, in subsequent use, I have changed the

sign and have used a positive coefficient to indicate positive import substitution.

(This procedure is analogous to the convention of ignoring signs when computing

price elasticity of demand coefficients.) Where negative import substitution occurred,

no attempt was made to measure it and it is simply denoted by the word "negative."

There are certain characteristics of this method which are explained more

fully below.

1. When the substitution coefficient has surpassed 100 percent, not only has

the import ratio declined, but the absolute volume of imports has declined as well.

In other words, it is only when the ratio exceeds 100 percent, that net import sub-

stitution has occurred.

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2. A negative ratio signifies that the import ratio has risen and, therefore, negative import substitution has occurred.

3. If the total supply has declined between year "o" and year "1," it is economically meaningless to calculate a substitution coefficient. An example will explain why. Assume that in year "o," imports = 60 units, domestic production = 40 units, and total supply = 100 units. Thus, our equation values are O_o = 100 and m_o = .60. Now assume that in year "1" domestic production stays constant at 40 units, imports decline to 10 units and that total supply is 50 units. Here our equation values are O_1 = 50 and m_1 = .20. Note that although the import coefficient has fallen, there has been no increase in domestic production and, therefore, no "real" import substitution has occurred. Thus, when there was a decrease in supply from year "o" to year "1," no attempt was made to measure substitution. Rather, the substitution coefficient was computed for a longer period of time during which the supply increased. For example, if total supply were 100 for year "o," 50 for year "1," and 110 in year "2," then I did not compute the substitution coefficient for period "o - 1," and instead, "bridged" year "1" and computed the coefficient for the period "o - 2."

4. This index of substitution is subject to certain biases inherent to all index numbers. Of crucial importance are the base and terminal year values. Taking first the problem of terminal year values, it can be shown that this measure of substitution is not independent of the level of domestic demand prevailing in the terminal year. Assume that the values (for some good) for the base year variables are O_o = 100, and m_o = .55. Assume that in the terminal year the domestic industry is producing at capacity and that at capacity 108 units are produced. If a high level of domestic demand

requires the importation of 72 additional units, the relevant terminal year values are

O_1 = 180 units, and m_1 = .40. Placing these values in the equation we obtain the

following:

$$dM = 180 (.40 - .55) + .55 (180 - 100)$$
$$= 180 (\quad - .15) + .55 (80)$$
$$= -27 \qquad + \quad 44$$

Dividing the first term by the latter yields a substitution coefficient of 61.36 percent.

If, however, the terminal year demand had been less buoyant so that only 52 imported

units were required, then the relevant terminal year values are O_1 = 160, and

m_1 = .325. With these values we obtain:

$$dM = 160 (.325 - .55) + .55 (160 - 100)$$
$$= 160 (\quad - .225) + .55 (60)$$
$$= -36 \qquad + \quad 33$$

These values yield a higher substitution coefficient (109.09 percent) despite the fact

that domestic production is the same in both cases.

Neither is the substitution coefficient independent of the level of demand in

the base year. Assume that in the base year domestic production (at capacity) is 45

units and that 55 units are imported. Base year values are now O_0 = 100, and m_0

= .55. Let the terminal year values be O_1= 220, and m_1 = .40. Placing these val-

ues into the equation we obtain the following:

$$dM = 220 (.40 - .55) + .55 (220 - 100)$$
$$= 220 (\quad - .15) + .55 (120)$$
$$= -33 \qquad + \quad 66$$

Dividing the initial value by the latter yields an index of substitution of 50 percent.

Now suppose that in the base year domestic demand had been much higher so that

imports were 135 units (domestic production is still assumed to be 45 units).[17] The

terminal year values are the same as above and the "new" base year values are O_o

= 180, and m_o = .75. These values yield the following results:

$$dM = 220 \ (.40 - .75) + .75 \ (220 - 180)$$
$$= 220 \ (\quad - .35) + .75 \ (40)$$
$$= -77 \quad \quad + \quad 30$$

This yields a higher substitution coefficient, 257 percent, despite the fact that in

both cases domestic production is the same.

Finally, it should be noted that, other things equal, the magnitude of the

index of substitution is determined by the relative change in the import coefficients.

If, for example, in industry A the relevant values are O_o = 100, O_1 = 200, m_o = .90,

and m_1 = .45, the resulting index of substitution would equal 100 percent. If in indus-

try B the values are O_o = 100, O_1 = 200, m_o = .02, and m_1 = .01, this too yields a

substitution coefficient of 100 percent, despite the small absolute decline in the import

coefficient in the latter case. As the import coefficient approaches zero, the greater

is the percentage change associated with a given decrease in the import coefficient.

The lower the import coefficient in the base year, the greater will be the magnitude

of the substitution coefficient, if substitution does in fact occur. Thus, as the import

coefficients approach zero, the less meaningful is the resulting index of substitution.[18]

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[17] In these examples, it has been assumed that import fluctuations result from changes in aggregate demand. It should go without saying that import fluctuations can also result from governmental import restrictions. This latter case may be the more relevant case for Latin America in general and Argentina in particular.

[18] Because of the biases discussed above, substitution data for all sample products were presented in their entirety, along with the indexes of substitution.

The above equation was used to compute import substitution, year by year, for the industries (and/or products) included in the sample. In this manner, I sought to determine if extensive import substitution did occur in Argentina during or near years of strong balance of payments pressures.

SELECTING THE INDUSTRIES

This analysis required domestic production and import statistics, for a variety of products, for a series of years. Argentine import statistics are relatively easy to obtain; the Dirección Nacional de Estadística y Censos published such data in its Comercio Exterior. Production data, however, were another matter. Unfortunately, such data are only available at widely scattered sources. Moreover, there was the problem of reconciling the different methods of classification used in compiling the import data and the production data. Finally, since time restraints did not permit an examination of all the nearly 2,000 Argentine imports, it was necessary to choose only the more important imports for analysis. Fortunately, these problems were partially alleviated by the publication of a work which gives time-series production and import data for a large group of products.[19] Using this publication, I chose for study those products whose import coefficients (i.e., imports as a percentage of domestic production plus imports) were 20 percent or more.[20] I chose 20 percent, rather than a lower figure

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[19]Importaciones, Industrialización, Desarrollo Económico en la Argentina (Buenos Aires: Oficina de Estudios para la Colaboración Económica Internacional, 1963).

[20]One might well ask what criteria were used by the O.E.C.E.I. in selecting

because Hirschman is primarily interested in the kind of import substitution that drastically changes the local economy. The higher the original import coefficient, the greater is the impact upon an economy of any successful import substitution. For example, assume that of the total domestic supply of a product, 90 percent is produced domestically and 10 percent is imported. If total imports are then curtailed, total domestic supply can remain constant, with only an 11 percent increase in domestic production. On the other hand, if domestic production is 80 percent and imports 20 percent of total supply, then a curtailment of imports necessitates a 25 percent increase in domestic production if total supply is to remain constant. Obviously, the choice of 20 percent is arbitrary and it could be argued that a higher "dividing-line" import coefficient would be more desirable.

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those products for which production and import data were given. According to Dr. Raúl Beranger, an associate director of the O.E.C.E.I., no systematic criteria were used; instead, the O.E.C.E.I. attempted to include all import products for which domestic production figures were available. For some products no production data were available because of the prosaic fact that no domestic production took place—bananas being an example of such products. For those products produced in Argentina, data were often not available for three reasons. First, some entrepreneurs are simply too lazy to record their production statistics. Other entrepreneurs do not record such data in an effort to avoid business and personal income taxes. Still other companies do not make public such data because of a somewhat understandable disinclination to divulge their market position to competitors. An example of the latter case is the typewriter industry. In 1967, only two companies produced typewriters in Argentina: Olivetti and Remington-Rand, and these companies simply refuse to divulge their production statistics. Nevertheless, it would seem that the O.E.C.E.I. study does include production and import statistics for the more important imports. My sample alone accounts for 52 percent of the 1957 import bill (in dollars) and the sample does not include all the products listed in the O.E.C.E.I. study.

DETERMINING ADEQUATE MARKET SIZE, ENTREPRENEURIAL PROPENSITY AND CONSUMPTION PATTERNS

Professor Hirschman qualifies his hypothesis in several ways. He asserts that substitution will not be forthcoming if the size of the market is thought to be inadequate to permit profitable production, or if the entrepreneurial propensity is weak, or if the product in question has not become part of "normal" consumption patterns. Ascertaining the "minimum economic size plant" for a number of products presents formidable problems, since this type of data is often lacking for developed countries, let alone for semi-industrialized countries. Moreover, such concepts as "entrepreneurial propensity" and "normal consumption patterns" are difficult if indeed not impossible to quantify. Therefore, it was felt that the easiest way to handle these problems was to examine them from an ex-post point of view. Thus, if domestic production had occurred historically, then it was assumed that Hirschman's stipulations were satisfied; i.e., that the good had become part of normal consumption patterns, that the entrepreneurial propensity was sufficiently strong to promote domestic enterprise, and that the domestic market was viewed as being of sufficient size to allow profitable production. Since my task is to explain why substitution has occurred and not why it has not occurred, this method seems satisfactory.

CORRELATION AND CAUSATION

After periods of strong pressure were identified, I studied the substitution that occurred in the selected industries to see if it were suggestively correlated with those periods. I use the word "suggestively" for several reasons. First, one would not expect the substitution to occur in the same year as the pressure or, perhaps, even in the

following year. For example, suppose year 1 is a year of strong pressures. From our model, we might expect the government to take action in year 2. Even if import substitution is induced, however, the investment may not come to fruition until year 3 or 4. Moreover, suppose that the government does take some form of passive remedial action in year 2 (examples include higher tariffs, lower quotas, higher exchange rates, etc.), and that such action does not induce substitution in years 3 or 4. Then, one might well expect stronger government action in year 4 or 5; such action as the encouragement of foreign investment, subsidization, etc., this investment to reach fruition in year 5 or 6. As the above comments indicate, I have to be somewhat free in interpreting the data; however, I try not to infer more than the data warranted.

Even assuming, however, that substitution is positively correlated, in a lag manner, with years of strong pressures, it would not be justifiable to assume that the substitution was caused by pressures. To infer this, one would have to examine some of the changes in economic institutional arrangements which, in all probability, could induce import substitution. These changes would include an increase in the general level of protection and a more receptive posture toward foreign investment. If such changes did occur during or shortly after years of strong pressure, then it would be more reasonable to infer that balance of payments pressures do in fact induce import substitution.

Because of time constraints, it was not possible to examine the general level of protection in any more than a cursory manner, but the Industrial Promotion Laws and their effects were studied in detail. One of the major conclusions of this dissertation is that these laws were responsible for the massive effort of import substitution which

occurred in the late nineteen-fifties and early nineteen-sixties.[21]

It might seem that the lack of precise data on the level of protection is a serious methodological weakness. This, however, is not the case for two reasons. First, on a prosaic level, it can fairly be asserted that it is not the intent of this dissertation to analyze the separate governmental policies that were critical in inducing import substitution. My basic thesis simply states that strong balance of payments pressures will induce some sort of governmental action which will in turn induce import substitution. For Argentina the induced governmental action is easily identifiable as the Industrial Promotion Laws. These laws were complex but basically they provided a combination of a high level of protection,[22] special tax incentives and subsidies, and a favorable investment climate. Which of these variables were critical in inducing import substitution is an important question but one which goes far beyond the intended scope of this work.

Secondly, it is my view that by the nineteen-fifties changes in the level of protection had ceased to be of critical importance as an inducement mechanism for promoting further import substitution in Argentina. When the level of protection is already extreme, further increases are of negligible importance in promoting import replacement. This kind of situation is typical of pre-1955 Argentina; that is, a high degree of protection prevailed long before strong balance of payments pressures were

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[21]It should be noted that a high level of protection was invariably one of the inducements offered to foreign capital by the Industrial Promotion Laws.

[22]Indeed, a high level of protection already existed before the institution of the Industrial Promotion Laws.

first felt. This view is supported by Díaz Alejandro, who labelled the entire 1940-65

period, one of "extreme protection."[23] Similarly, Aldo Ferrer has stated that the

1945-55 period was one of "substantial and increasing protection."[24] Bela Balassa

obtained similar results in an analysis of 1958 Argentine tariff levels.[25] Typical of

these views is the following quote by Díaz Alejandro:

> During 1950 to 1951, imports of goods and services amounted to 9
> percent of the gross domestic product. In the same period, the domestic
> manufacturing and mining sectors, which accounted for 33 percent of
> the gross domestic product, were given a high degree of protection from
> foreign competition, either through quantitative restrictions on imports
> or through nearly prohibitive exchange surcharges and similar devices.
> The degree of protection was sufficiently high to break the direct links
> that may have existed among the domestic prices of most of these goods,
> world prices, and the exchange rate, although the indirect link pro-
> vided by imported intermediate products and raw materials remained.[26]

Accordingly, an examination of changes in the level of protection was felt to

be unnecessary. By and large, post-1955 import substitution did not result from changes

in the degree of protection but rather from the Industrial Promotion Laws.

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[23]Carlos F. Díaz Alejandro, "The Argentine Tariff, 1906-1940," Center Paper
No. 124 (New Haven, Conn.: Economic Growth Center, Yale University, 1968),
p. 90 and p. 98.

[24]Aldo Ferrer and E.L. Wheelwright, Industrialization in Argentina and Aus-
tralia: A Comparative Study, Center of Economic Research, DiTella Institute (Buenos
Aires: DiTella Institute, 1966), 7.6.

[25]Bela Balassa, "Integration and Resource Allocation in Latin America," a
paper presented to the Seminar on Strategy for the Foreign Sector and Economic De-
velopment, Buenos Aires, September 7 to September 10, 1966 (Buenos Aires: Center
of Economic Research, DiTella Institute, 1966).

[26]Carlos F. Díaz Alejandro, Exchange-Rate Devaluation in a Semi-Indus-
trialized Country (Cambridge, Mass.: The M.I.T. Press, 1965), p. 45.

CHAPTER IV

THE ANALYSIS

I begin by defining years of strong and weak balance of payments pressures

according to the two methods described previously. Table 1 gives the gross and net

reserves[1] of gold and foreign exchange for the period 1945-1963. It demonstrates the

well-known decline in reserves that occurred after 1946. In Table 2, I have compared

net reserves of foreign exchange with annual imports and have computed the first vari-

able as a percentage of the latter for each year in the period. Note that although

net reserves fell precipitously in the period 1946-50, the coefficient (net reserves as

a percentage of imports) remained well above the 25 percent level; not until 1951-52

and again in 1955-63, did the coefficient "dip" below the 25 percent plateau. Thus,

using this measure alone, the years 1951-52 and 1955-63 would be classified as years

of strong pressure. As previously explained, however, two methods are to be used in

defining pressure years. By the second method, a strong pressure

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[1]Gross reserves are defined as the sum of gold, foreign exchange, and assets
convertible into foreign exchange. Assets convertible into foreign exchange include
Treasury credits from the United States and the United Kingdom, loans from the Inter-
national Bank for Reconstruction and Development, time deposits and bank acceptances.
Net reserves are defined as gross reserves minus claims on foreign exchange. Claims
on foreign exchange include short and medium term credits, stabilization loans from
the International Monetary Fund, consolidated debts, and bilateral agreements. My
thanks to Percy D. Warner for this explanation.

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TABLE 1

GROSS & NET RESERVES OF GOLD & FOREIGN EXCHANGE 1945-63
(in millions of dollars)

Year	Gross reserves of gold and foreign exchange[1] (at year end) (1)	Gold (2)	Foreign Exchange (3)	Assets convertible in foreign exchange (4)	Claims on foreign exchange (5)	Net reserves of gold & foreign exchange[2] (6)
1945	1,639.2	1,191.8	447.4	--	23.9	1,615.3
1946	1,733.4	1,090.3	643.1	--	46.8	1,686.6
1947	1,175.9	337.9	838.0	--	12.8	1,163.1
1948	772.3	142.6	629.7	--	98.7	673.6
1949	664.6	210.3	454.3	--	140.7	523.9
1950	843.2	210.3	632.9	--	152.7	690.5
1951	707.6	266.7	440.9	--	350.6	357.0
1952	608.0	286.7	321.3	--	423.8	184.2
1953	633.4	371.5	261.9	--	256.3	377.1
1954	654.3	371.5	282.8	--	283.4	370.9
1955	509.2	371.5	137.7	--	390.2	119.0
1956	433.6	224.1	209.5	--	334.1	99.5
1957	333.2	125.7	207.5	--	298.4	34.8
1958	179.1	59.5	119.6	--	358.5	-179.4
1959	396.5	56.1	334.1	6.3	392.2	4.3
1960	702.9	103.5	194.2	405.2	480.0	222.9
1961	501.9	189.6	141.3	171.0	397.5	104.4
1962	195.8	60.6	94.2	41.0	360.1	-164.3
1963	326.9	77.6	109.2	140.1	314.1	12.8

[1]Column 1 (gross reserves of gold and foreign exhange) is equal to the sum of columns 2, 3 and 4.

[2]Column 6 (net reserves of gold and foreign exchange) is equal to column 1 minus column 5.

Sources: 1945-58, Banco Central de la República Argentina, Memoria Anual: 1958 (Buenos Aires, 1959), p. 5.
1959-63, Banco Central de la República Argentina, Memoria Anual: 1963 (Buenos Aires, 1964), p. 55.
This data may also be found in Argentina Economica y Financiera (Buenos Aires: Oficina de Estudios para la Colaboración Económica Internacional, 1966), p. 301.

TABLE 2

NET SUPPLY OF GOLD AND FOREIGN EXCHANGE AS A PERCENTAGE OF IMPORTS, 1945-63

Year	Net Supply of Gold and Foreign Exchange (at year end) (in millions of dollars)	Imports (in millions of dollars	Gold and Foreign Exchange as a Percentage of Imports
1945	1,615.3	294.9	548%
1946	1,686.6	588.1	287
1947	1,163.1	1,340.5	87
1948	673.6	1,561.5	43
1949	523.9	1,179.6	44
1950	690.5	964.2	72
1951	357.0	1,480.2	24.1
1952	184.2	1,179.3	16
1953	377.1	795.1	47
1954	370.9	979.0	38
1955	119.0	1,172.6	10
1956	99.5	1,127.6	9
1957	34.8	1,310.4	3
1958	-179.4	1,232.6	-15
1959	4.3	993.0	0.4
1960	222.9	1,249.3	18
1961	104.4	1,460.4	7
1962	-164.3	1,356.5	-12
1963	12.8	980.7	1

Source: Foreign Exchange, see Table 1. For imports, Direccíon Nacional de Estadística y Censos de la República Argentina, Comercio Exterior, 1951-63 (Buenos Aires: 1955-64).

year is defined as one in which any deficit occurring in the current account is not

maintainable. These data are summarized in Table 3. Note that the deficit was not

maintainable in 1952, 1955-58, and 1961-62. Unlike the previous method, 1951 is

not defined as a year of strong pressures.[2] Because the two measures did not agree,

1951 was not classified as a year of strong pressures. For similar reasons, neither did

I classify 1959-60 as years of strong pressure.[3]

Without doubt, 1952 was a year of strong pressures--net foreign exchange

reserves fell to 16 percent of annual imports and the deficit in the current account

was not maintainable. Nevertheless, it can be argued that 1952 was not the type of

"pressure year" which would tend to induce import substitution. The balance of pay-

ments pressures in this year were primarily the result of a 51 percent decline in export

earnings which in turn was the result of one of the worst droughts in Argentine history.

Such a decline in export earnings is not indicative of structural weaknesses in the

capacity to import but rather is a stochastic variation occurring as a result of adverse

and unusual climatic factors. Such a pressure would probably not induce import

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[2]It is interesting to note that using the first method, 1951 "barely qualified" as a strong pressure year. The coefficient, net reserves to imports was 24.1 percent, only slightly below the 25 percent level.

[3]Obviously, the rejection of 1959-60 as years of strong pressure is open to more criticism than is the rejection of 1951. During 1959, net reserves were down to $4.3 million, less than 1 percent of annual imports, and although the current account was positive, it was so by only $15.2 million. In a like manner, 1960 was a year of heavy pressures. Although net reserves had increased to $222.9 million, or 18 percent of the annual import level, they were still well under the 25 percent level. Moreover, the negative current account balance of -$197.3 million was large and only "barely" maintainable. Nevertheless, from an ex post view it seems clear that no harm is done by rejecting these years; for, by the end of 1958, the Argentine authorities had al- ready taken the necessary legislative steps toward transforming the Argentine economy and relieving the balance of payments pressures.

TABLE 3

CURRENT ACCOUNT BALANCE AND THE NET SUPPLY OF GOLD AND FOREIGN
EXCHANGE, 1945-63
(in millions of dollars)

Year	Current Accounts Balance	Net Supply of Gold and Foreign Exchange
1945	368.4	1,615.3
1946	425.1	1,686.6
1947	-29.2	1,163.1
1948	54.3	673.6
1949	-138.0	523.9
1950	112.2	690.5
1951	-324.2	357.0
1952	-445.0	184.2
1953	335.6	377.1
1954	60.1	370.9
1955	-238.8	119.0
1956	-129.1	99.5
1957	-300.5	34.8
1958	-256.0	-179.4
1959	15.2	4.3
1960	-197.3	222.9
1961	-572.0	104.4
1962	-268.0	-164.3
1963	234.0	12.8

Sources: For Net Supply of Gold and Foreign Exchange, see Table 1, Current Account Balance, Argentina Económica y Financiera, op. cit., pp. 298-99.

substitution. Entrepreneurs would tend to view any cessation of imports as being short-term in nature (lasting only until more favorable climatic factors reestablish traditional agricultural output levels) and therefore not a sufficient basis for entrepreneurial effort. Thus I do not classify 1952 as a year of strong pressures; instead the period 1955-58 is classified as such (because of production data limitations the period 1961-62 is not examined). Therefore, if the Hirschman substitution method is correct, one would expect to find a significant amount of import substitution begun during the period, although perhaps not to come to fruition until three or four years later.[4]

Using the O.E.C.E.I. study as a source, I examined those industries (or products) listed in the study whose import coefficients were 20 percent or more, in 1955 or thereafter. This yielded a sample of twenty-nine products: 1) asbestos, 2) antimony, 3) newsprint, 4) electric meters, 5) yerba mate, 6) diesel oil, 7) kerosene, 8) sulfur, 9) acetic acid, 10) bismuth, 11) hops, 12) edible oils, 13) graphite, 14) wood paste (for the fabrication of paper and cellulose),15) cigarette paper, 16) cellophane, 17) workpaper and writing paper, 18) cast iron, 19) steel ingots, 20) laminated steel, 21) crude petroleum, 22) fuel oil, 23) gas oil, 24) airplane fuel, 25) oil lubricants, 26) automobiles, 27) trucks, 28) tractors, and 29) combustible mineral solids. The relevant data for each of these products are presented in Tables 1 through 29 in the Appendix.

Between 1955 and 1961, all of the above products, except the first seven,

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[4]For a review of my measure of import substitution, see pages 76 and 77, Chapter III.

experienced a decline in their import coefficients. (The seven products whose import coefficients increased, accounted for 3.30 percent of total 1956 imports in dollars.)[5] The change in the import coefficient of each of these products between 1945 and 1961, is shown in Figure 1. Since these products experienced no import substitution between 1955 and 1961, when strong balance of payments pressures were present, they are not discussed further.

The remaining twenty-two products did experience import substitution between 1955 and 1961. These twenty-two products whose import coefficients decreased accounted for 48.01 percent of 1956 imports in dollars. Moreover of the twenty-two products experiencing substitution, fourteen experienced <u>net</u> import substitution (i.e., not only did the import coefficient decline, but the <u>absolute</u> volume of imports declined as well). These products included crude petroleum, fuel oil, oil lubricants, combustible mineral solids, cast iron, hops, edible oils, graphite, bismuth, cigarette paper, workpaper and writing paper, tractors, automobiles, and trucks.

In order to analyze better this process of import substitution, I divided the twenty-two substituted products into six groups. Group I, I have labeled, for want of a better name, the "easy to substitute products," all of which could have been developed without foreign capital. This group includes sulfur, acetic acid, bismuth, hops, edible oils, and graphite. Groups II-VI encompass the remaining sixteen products, whose substitution necessitated foreign capital. Group II, Paper Products,

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[5]Actually, the figure must be somewhat higher than 3.30 percent. Since I was unable to find a comparable listing for asbestos in the <u>Comercio Exterior</u>, the above figure excludes the amounts spent on asbestos imports.
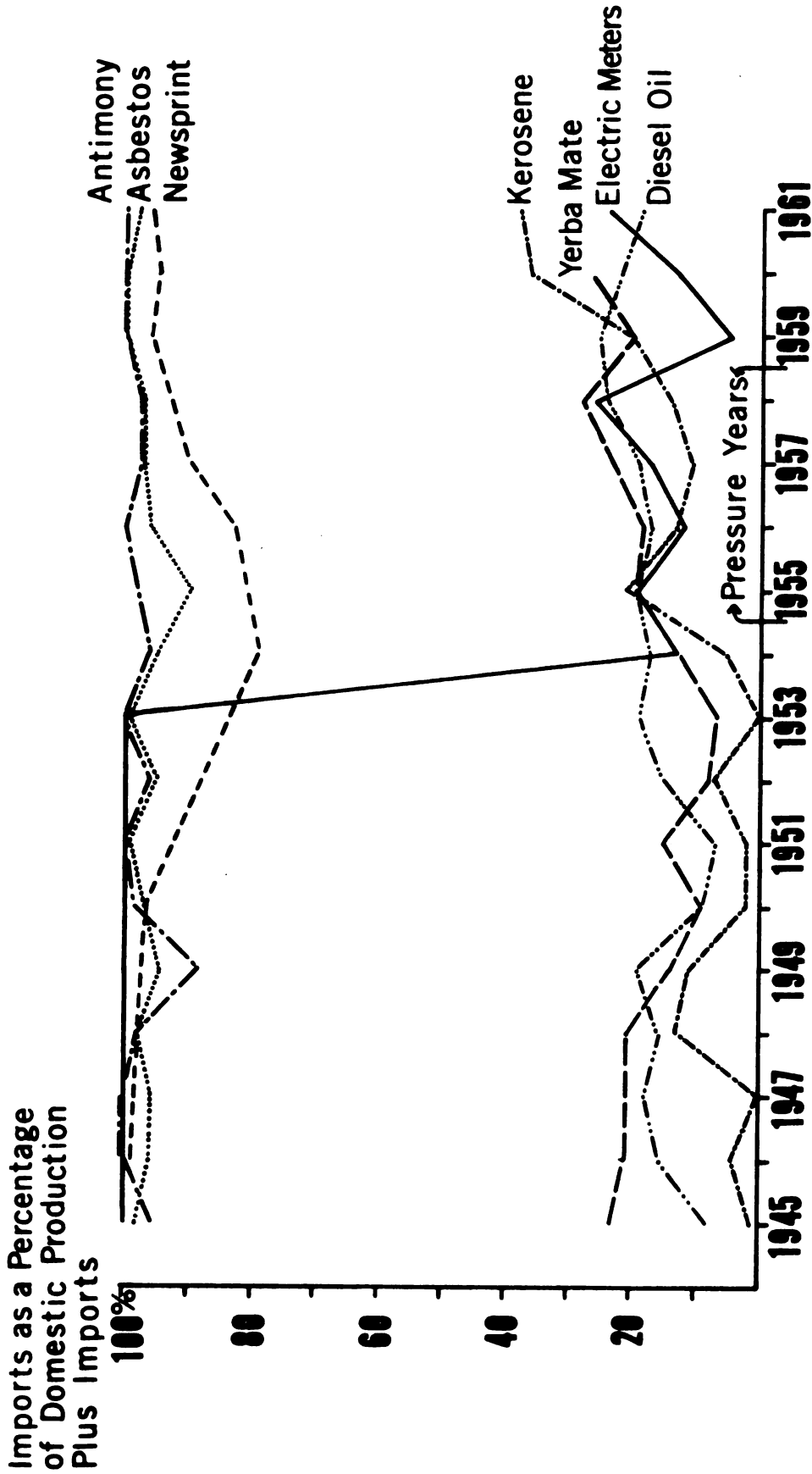
FIGURE I

PRODUCTS NOT EXPERIENCING IMPORT SUBSTITUTION

Source: See Appendix, Tables 1, 2, 3, 4, 5, 6, and 7.

includes wood paste, cigarette paper, cellophane, and workpaper and writing paper.
Group III, Steel and Iron Products, is composed of cast iron, steel ingots, and lam-
inated steel. Group IV, Petroleum and Petroleum Products, includes crude petroleum,
fuel oil, gas oil, airplane fuel, and lubricants. Group V, Automotive Products, in-
cludes automobiles and trucks. Group VI, is a residual category composed of tractors
and combustible mineral solids. The change in the import coefficient of each of these
products between 1945 and 1961 is shown in Figures 2 through 7. Note particularly
the decline in the import coefficients after 1955 when strong balance of payments
pressures first were felt in Argentina. It seems clear that the successful import sub-
stitution of these products was closely related in-point-of-time to these strong balance
of payments pressures, thus tending to confirm Hirschman's hypothesis. The relation-
ship between severe balance of payments pressures and import substitution is further
summarized in Table 4. Here substitution coefficients were computed for each of the
sample products for the period 1955-61, a period in which strong balance of payments
pressures generally were operative and a period in which import substitution should
have occurred if Hirschman's hypothesis is valid. Note that twenty-two of the
twenty-nine sample products experienced positive import substitution. Significantly,
fifteen products had substitution coefficients of over 100 percent, indicative of net
import substitution. Two more products, cellophane and airplane fuel, had substitu-
tion coefficients of 99 percent, indicating that they very nearly experienced net im-
port substitution. Here again the data support Hirschman's hypothesis.

The magnitude of this import substitution effort is revealed by Table 5. Here I
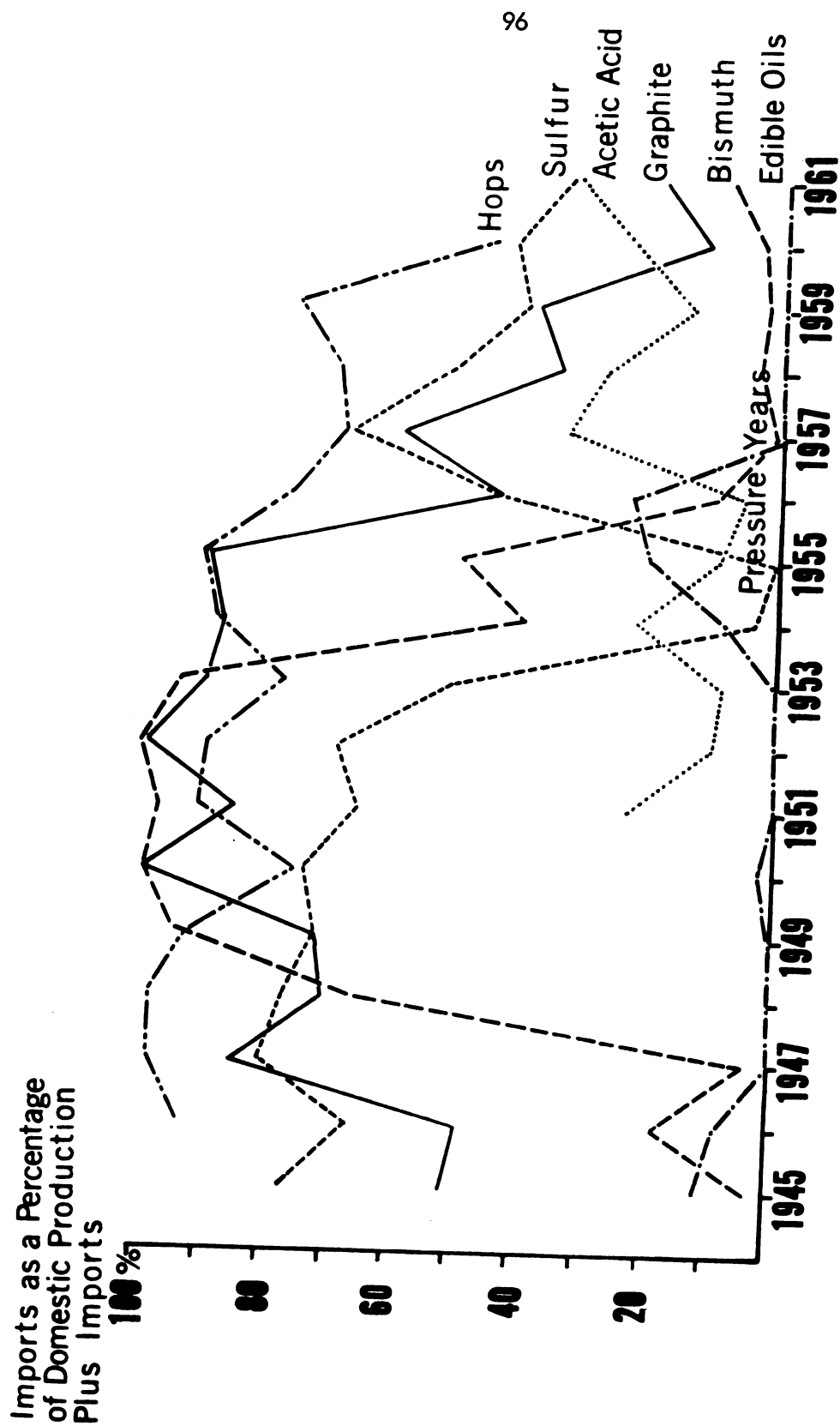have presented the import cost of these twenty-two products, as a percentage of total

FIGURE 2

GROUP I: THE EASY TO SUBSTITUTE PRODUCTS

Source: See Appendix, Tables 8, 9, 10, 11, 12, and 13.
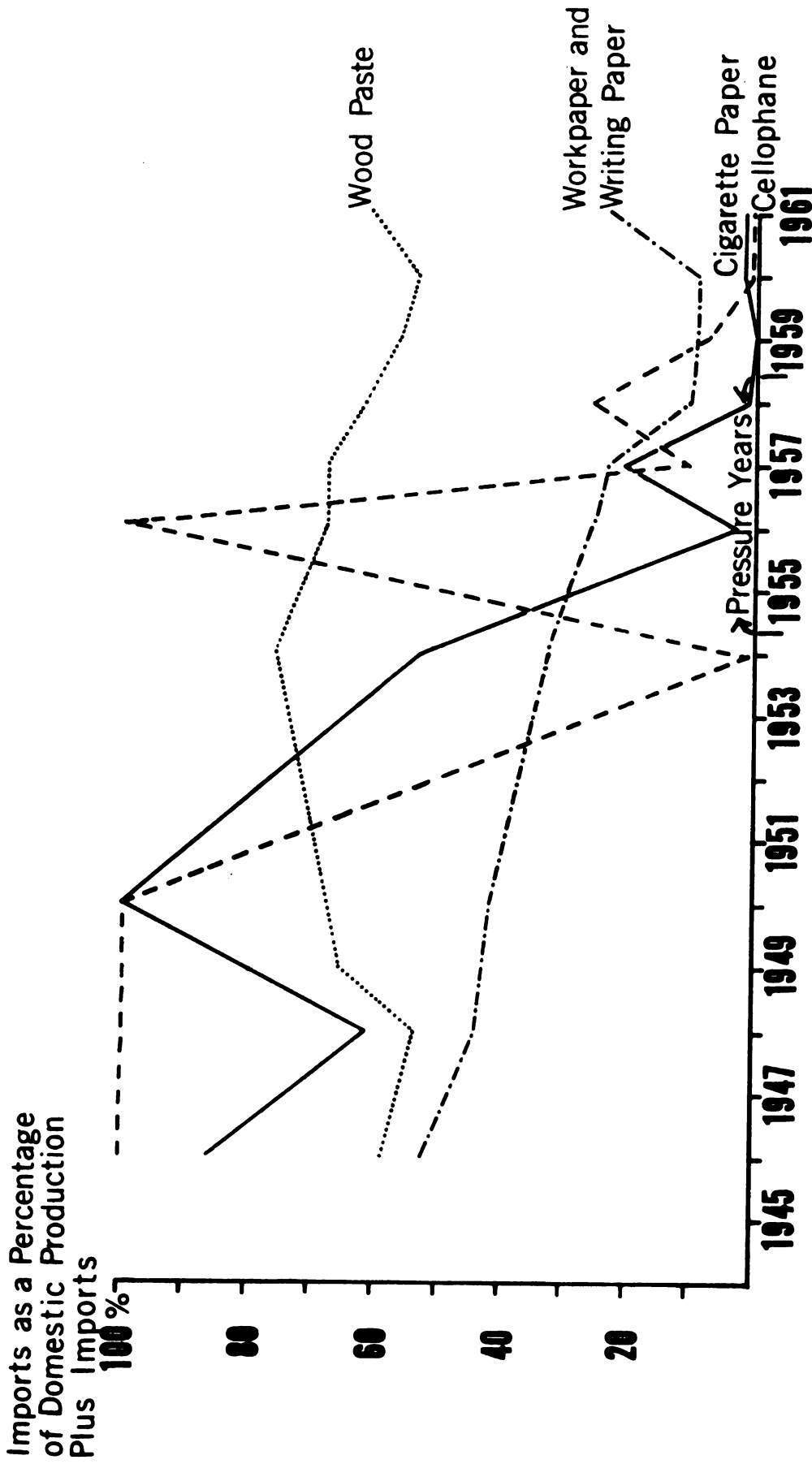
FIGURE 3

GROUP II: PAPER PRODUCTS

Source: See Appendix, Tables 14, 15, 16, and 17.
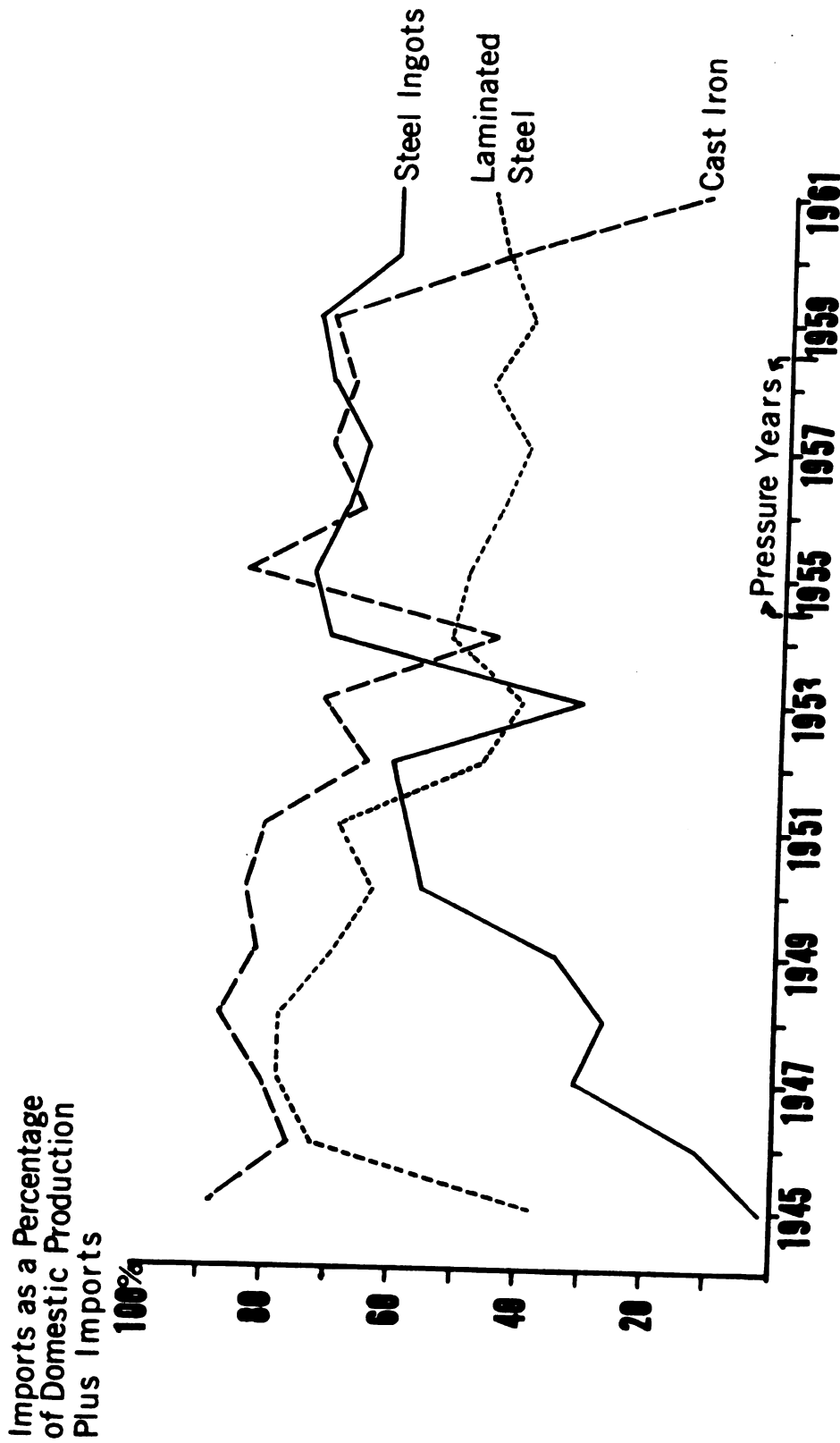
FIGURE 4

GROUP III: STEEL AND IRON PRODUCTS
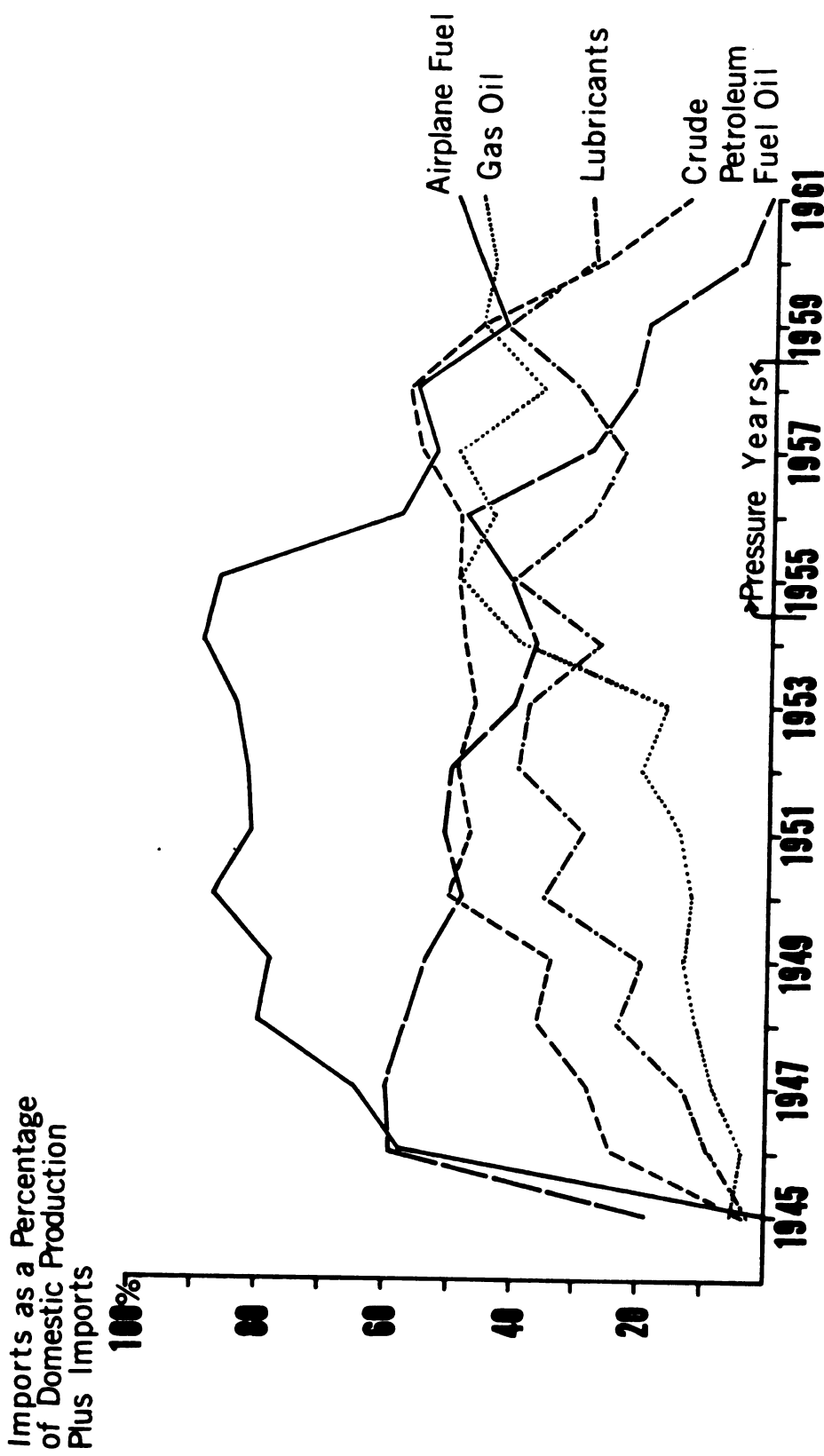
Source: See Appendix, Tables 18, 19 and 20.

FIGURE 5
GROUP IV: PETROLEUM AND PETROLEUM PRODUCTS

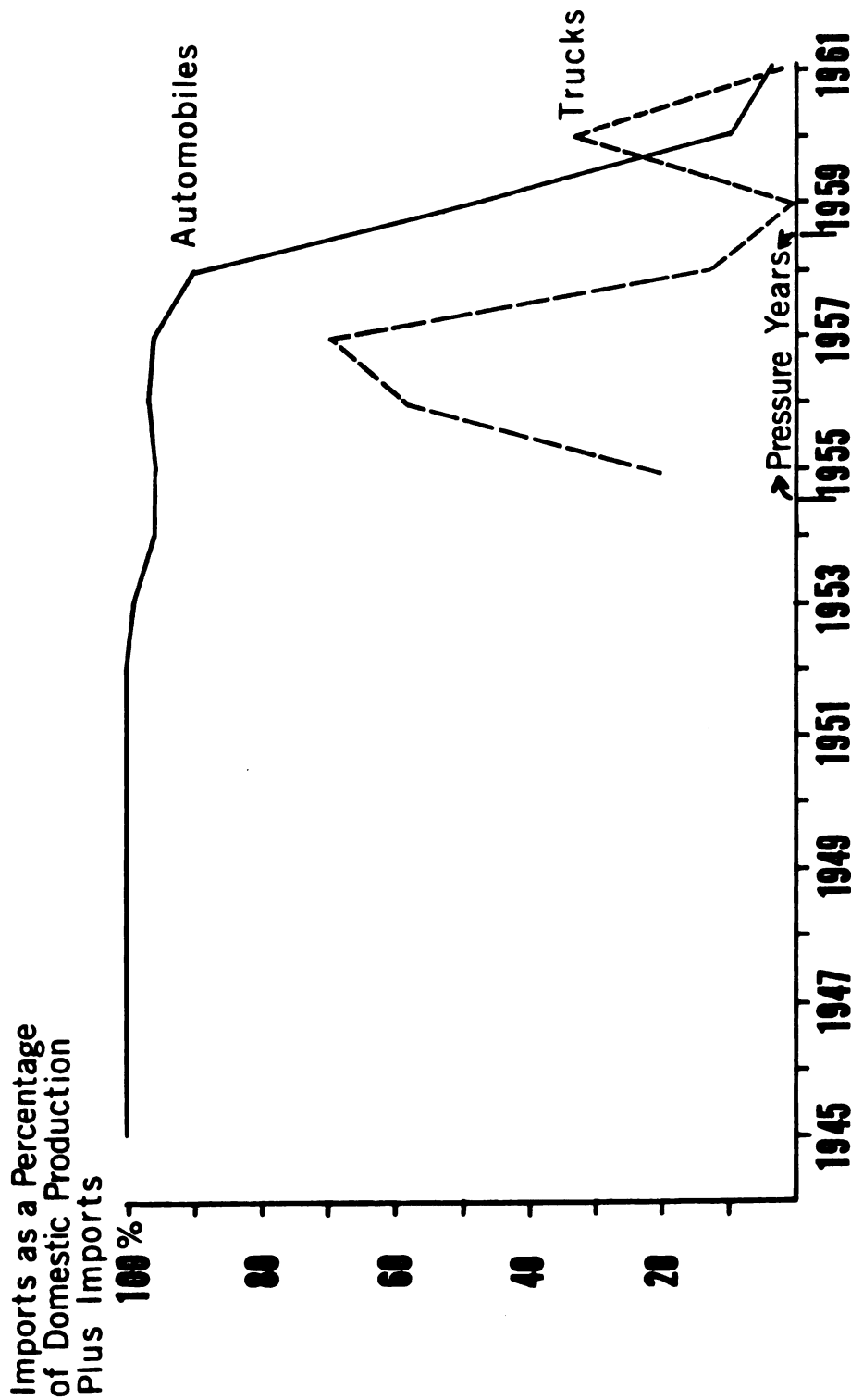Source: See Appendix, Tables 21, 22, 23, 24, and 25.

FIGURE 6

GROUP V: AUTOMOTIVE PRODUCTS

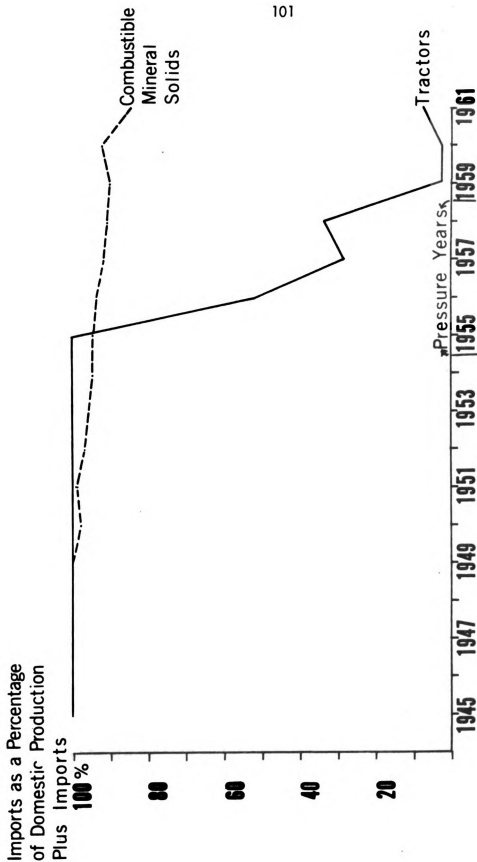Source: See Appendix, Tables 26 and 27.

FIGURE 7

GROUP VI: TRACTORS AND COMBUSTIBLE MINERAL SOLIDS

Source: See Appendix, Tables 28 and 29.

TABLE 4

SUBSTITUTION COEFFICIENTS FOR SAMPLE PRODUCTS, 1955-61[1]

Period	Period	Substitution Coefficient
1 Asbestos	1955-61	negative
2 Antimony	1955-61	negative
3 Newsprint	1955-61	negative
4 Electric Meters	1955-61	negative
5 Yerba Mate	1955-60	negative
6 Diesel Oil	1955-61	zero
7 Kerosene	1955-61	negative
8 Sulfur	1956-61	126%
9 Acetic Acid	1957-61	27%
10 Bismuth	1955-61	165%
11 Hops	1955-59	483%
12 Edible Oils	1955-61	306%
13 Graphite	1954-59	3361%
14 Wood Paste	1956-61	60%
15 Cigarette paper	1956-61	321%
16 Cellophane	1956-61	99%
17 Workpaper & Writing Paper	1956-61	269%
18 Cast Iron	1955-61	163%
19 Steel Ingots	1955-61	54%
20 Laminated Steel	1955-61	26%
21 Crude Petroleum	1955-61	190%
22 Fuel Oil	1955-61	1295%
23 Gas Oil	1955-61	14%
24 Airplane Fuel	1955-61	99%
25 Oil Lubricants	1955-61	310%
26 Automobiles	1955-61	103%
27 Trucks	1955-61	103%
28 Tractors	1955-61	296%
29 Combustible Mineral Solids	1955-61	111%

Source: See Appendix, Tables 1-29.

[1]For certain products substitution coefficients could not be calculated for the 1955-61 period. Data for paper products were not available for the year 1955; thus substitution coefficients for these products were calculated for the 1956-61 period. Similarly, lack of 1961 data for yerba mate necessitated that the substitution coefficient be computed for the 1955-60 period. Hops and graphite did not experience an increase in total supply between 1955-61. Since the substitution coefficient is computed only for periods in which total supply increased, the periods 1955-59 and 1954-59 were used for hops and graphite respectively. In the case of sulfur and acetic acid, 1955 was judged to be an atypical year in regards to the volume of imports; accordingly, more typical base years were chosen for computing the substitution coefficients for these products.

Imports (in dollars and pesos) for the period 1955-62. Table 5 demonstrates the high

degree of import substitution experienced by these products; in 1956, they accounted

for 48.01 of total dollar imports; however, by 1962 they accounted for only 17.30

percent of total dollar imports.[6] It should be noted that part of this apparent decline

is specious. Between 1956 and 1962, there was a 20.3 percent increase in total dol-

lar imports. If the dollar import values of the twenty-two products had remained con—

stant, then this 20.3 percent increase in the denominator of the coefficient which

measures the import value of these products, would serve to decrease the value of

the coefficient itself to 40.0 percent. As stated above, it actually declined to

17.30 percent, indicating still a startling degree of import substitution in a relatively

short period of time. In absolute terms, the dollar value of imports of these twenty-

two products decreased from $541,305,994 in 1956 to $234,729,708 in 1962.[7] The

degree of import substitution seems even more remarkable when it is recalled that by

1955, easy import substitution was no longer possible. By and large, any future sub-

stitution had to take place in consumer durables and/or basic industries. Both groups

required complex and highly technical production processes, and therefore, required

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[6]The relevant figures for 1956 and 1962, in pesos, are 49.14 percent and
16.55 percent, respectively.

[7]This is not to say that there was an equivalent savings of foreign exchange;
in fact, there was not. Many of the domesticated industries initially had very high im-
port components, particularly the automobile industry which in its early stages was
doing little more than importing parts and assembling them locally. However, it seems
likely, at least in the case ot the automotive industry, that backward linkages were
and are operative which will probably result in foreign exchange savings in the
future.

TABLE 5

VALUE OF IMPORTS OF VARIOUS PRODUCTS AS A PERCENTAGE OF THE TOTAL IMPORTS IN DOLLARS AND PESOS: PERIOD 1955-62

Name of Product	Value	1955	1956	1957	1958	1959	1960	1961	1962
Sulfur	Peso	.01%	.16%	.23%	.17%	.09%	.07%	.05%	.05%
	Dollar	.01	.08	.14	.10	.08	.07	.05	.06
Acetic Acid	Peso	.01	.01	.03	.02	.02	.03	.04	.01
	Dollar	.01	.01	.04	.03	.02	.03	.04	.02
Bismuth	Peso	.02	.01	.01	.01	.02	.01	.01	.01
	Dollar	.02	.01	.01	.01	.01	.01	.01	.01
Hops	Peso	.07	.07	.09	.14	.14	.02	.01	.01
	Dollar	.07	.06	.06	.10	.13	.02	.01	.02
Edible Oils	Peso	.90	2.19	--	--	--	—	--	--
	Dollar	.91	1.97	--	--	--	--	--	--
Graphite	Peso	.02	.01	.01	.01	.01	.01	.01	.01
	Dollar	.02	.02	.01	.01	.01	.01	.01	.01
Wood paste for fabrication of paper & cellulose	Peso	2.72	1.77	1.29	1.76	1.49	.86	1.27	.92
	Dollar	2.75	1.77	1.67	1.51	1.33	.86	1.27	.95
Cigarette Paper	Peso	.05	.01	.02	.01	--	.01	.01	.01
	Dollar	.05	.01	.02	.01	--	.01	.01	.01
Cellophane	Peso	.01	.01	.02	.12	.02	.01	.01	.01
	Dollar	.01	.01	.01	.07	.02	.01	.01	.01
Workpaper & Writing Paper	Peso	1.00	.47	.31	.22	.18	.11	.32	.22
	Dollar	.83	.52	.38	.15	.16	.11	.32	.22
Cast Iron	Peso	.98	.31	1.05	.72	.92	.87	.58	.07
	Dollar	.99	.41	1.36	.94	.95	.86	.58	.08
Steel Ingots	Peso	4.88	3.35	3.19	3.45	4.60	3.30	4.47	1.47
	Dollar	4.95	4.80	4.23	5.02	4.50	3.29	4.47	1.85
Laminated Steel	Peso	8.71	7.56	6.24	10.48	9.29	8.32	8.75	6.53
	Dollar	8.81	9.13	7.39	11.04	9.43	8.31	8.75	6.84

TABLE 5 (cont'd)

Name of Product	Value	1955	1956	1957	1958	1959	1960	1961	1962
Crude Petroleum	Peso	5.02%	8.69%	10.10%	7.96%	11.54%	5.81%	2.85%	1.80%
	Dollar	7.63	9.06	13.23	12.32	11.43	5.80	2.85	1.75
Fuel Oil	Peso	2.72	6.67	3.90	1.44	2.61	.53	.01	--
	Dollar	4.13	6.40	5.11	2.25	2.71	.53	.01	--
Gas Oil	Peso	.74	1.07	1.02	.58	1.28	1.24	1.40	1.56
	Dollar	1.12	1.11	1.34	.90	1.31	1.23	1.40	1.57
Airplane Fuel	Peso	.22	.30	.17	.19	.29	.21	.18	.18
	Dollar	.25	.29	.22	.29	.27	.21	.18	.20
Lubrication Oils	Peso	.34	.78	.26	.29	.32	.40	.29	.76
	Dollar	.35	.78	.34	.46	.40	.40	.29	.72
Automobiles	Peso	1.68	2.76	2.28	3.15	.91	.44	.40	.33
	Dollar	.91	1.31	1.34	1.78	.86	.43	.40	.34
Trucks	Peso	1.06	8.33	13.80	1.22	.02	3.43	.81	1.60
	Dollar	.58	3.96	8.10	.86	.02	3.43	.81	1.71
Tractors	Peso	2.96	1.31	.54	.58	.05	.29	.48	.22
	Dollar	3.00	2.80	1.09	1.49	.10	.29	.47	.22
Combustible Mineral Solids	Peso	1.89	3.29	2.12	1.86	2.42	2.04	1.47	.79
	Dollar	2.85	3.51	2.77	2.93	2.67	2.03	1.47	.74
TOTAL[1]	Peso	36.01	49.14	46.67	34.34	36.20	27.96	23.38	16.55
	Dollar	40.23	48.01	48.87	42.23	36.41	27.90	23.38	17.30

[1]Details in this table will not necessarily add to totals because of rounding.

Source: My computations, Direccion Nacional de Estadistica y Censos de la Republica Argentina, Comercio Exterior, 1955-62 (Buenos Aires: 1958-63).

large amounts of capital and "know-how." Thus, as a first approximation, Hirsch-

man's mechanism seems to work; i.e., balance of payments tend to induce import

substitution.

There is, nevertheless, a curious facet to this spurt of import substitution. In

Table 5, it can be seen that little import substitution occurred from 1955 to 1958; in

fact, as far as total figures are concerned, negative import substitution occurred. Not

only did the import value of the twenty-two products as a percentage of total dollar

imports increase from 40.23 percent in 1955 to 42.23 percent in 1958, but the abso-

lute level increased as well, from $471,723,914 in 1955 to $520,650,715 in 1958;

thus, apparently the entire process of substitution was concentrated in the period

1959-62. This indeed seems strange. One would think that in the period 1955-58,

during which balance of payments pressures were progressively more severe, positive

import substitution would have occurred. Several explanations of this phenomenon

immediately suggest themselves. It is possible that my methodological approach is

wrong and that I have not accurately defined strong pressure years. A second explan-

ation is that entrepreneurs were exceedingly timid during the 1955-58 period of "care-

taker" governments and were waiting to see the attitude of the new government toward

private enterprise, in general, and venture capital, in particular, before attempting

expansion or new business ventures. Still another explanation is that import substi-

tution was begun in this period (that is, initial investments were made during the

period 1955-58) but did not reach the "pay-off" stage until later, 1959-62.

All of the above explanations, except possibly the first, have some degree of

validity. It is my belief, however, that they offer only a partial and limited explanation

as to why import substitution was delayed until 1959-62. The preponderant reason

seems to have been the character of the Argentine economy itself, as it existed in

the late nineteen-fifties. By and large, by 1955, any additional substitution had to

occur in industries which required large capital investments, and apparently domestic

production in these fields was not feasible without foreign participation. Below I

examine this import substitution process, analyzing the six categories listed previously.

GROUP I: THE EASY TO SUBSTITUTE PRODUCTS

The 1955 import cost of Group I products, excluding edible oils, was

$1,476,687. If a 3.37 capital-output ratio is assumed[8] for these products, it follows

that $4,976,435 was necessary in new capital investment in order to domesticate the

production of these products. Now, as a limiting case, assume that all such capital

goods had to be imported from abroad. Then it follows that $4.98 million in foreign

exchange was necessary to finance these imports. This amount represents just .42

percent of total 1955 imports and it seems likely that such a small amount could al-

ways be obtained by a slight decrease in the other components of the import bundle

and that foreign investment would, therefore, not be necessary for substitution to

take place. Indeed, even the small amount estimated above seems unduly high.

First, it is probably unrealistic to assume that all machinery, etc., had to be pur-

chased abroad. Secondly, the capital-output used is probably too high: the 1955

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[8]The capital-output ratio data are taken from Naciones Unidas, Consejo Económico y Social, Comisión Económica para América Latina, El Desarrollo Económico de la Argentina: Anexo (Santiago de Chile, 1958).

sectoral capital-output ratios for agricultural and industry were 3.05 and 1.80, respectively. In any event, it seems clear that foreign participation was not necessary for the domestication of these products.

Edible oils constituted a much larger proportion of total 1955 imports. In absolute terms, $10,693,940 was spent, in 1955, for edible oil imports. Assuming a capital-output ratio of 3.37, it is calculated that slightly more than $36 million in foreign exchange would have been necessary to finance new capital imports for this industry (assuming that all such capital goods had to be imported). This represents 3.07 percent of total 1955 imports and obviously, this amount would be more difficult to "squeeze out" of the import bundle than was true in the previous example. Here again, it can be argued that this figure overstates the foreign exchange needed to domesticate the industry. If a capital-output ratio of 1.8^9 is used in the calculations, then the necessary foreign exchange is reduced to $19.25 million, or 1.64 percent of 1955 imports. Also the assumption that all capital-goods had to be imported can be attacked. The best case for the "easy to substitute" assertion, however, lies in the fact that the edible oils "industry" was already firmly established in Argentina, and that very likely, there was excess capacity. Table 14 in the Appendix demonstrates this point. Note that 1955 and 1956 were years of unusually high imports and that even in these years, domestic firms provided 75-80 percent of domestic needs. Moreover, note that in 1950, domestic production very nearly equalled the domestic consumption in 1955. In brief, it seems reasonable to assume, therefore, that there

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[9]Ibid.

was sufficient productive capacity and potential in Argentina in 1955, and that the need for new capacity expansion was not pressing and that neither was the need for foreign capital.[10]

GROUP II: PAPER PRODUCTS

In 1955, the products in this group accounted for 3.36 percent of total imports. Of the total amount spent, $42.56 million, over three-fourths, or $32.27 million, was accounted for by the importation of one product, wood paste (i.e., wood pulp). Two of the four products, cellophane and cigarette paper, were almost completely substituted by 1961. Whereas in 1955, $618,792 was spent on the importation of these products, by 1962 only $55,757 was so spent. While this savings of foreign exchange was certainly welcome, the amounts involved were not of sufficient size to have much impact on the Argentine economy or balance of payments. The substitution performance of wood pulp and workpaper and writing paper was far more impressive in terms of foreign exchange savings but less so in terms of remaining substitution potential. The absolute amounts spent on the importation of these products decreased from $41.94 million in 1955 to $15.81 million in 1962. Between 1955 and 1961, domestic production of wood pulp and workpaper and writing paper increased by 48 percent and 6

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[10]I am not arguing here that foreign capital did not participate in the domestication of these products; it is possible that it did. What I am saying is that these products could have been substituted without foreign participation. I was unable to uncover evidence that the development of these products was left to foreign enterprises. This, however, does not mean that foreign venture capital did not aid in the substitution of these products; it simply means, in all probability, that the importance of these products was so small, that such figures did not show up in the typically highly aggregated Argentine data.

percent, respectively. By 1961, the import coefficients were a high 61 percent for

the former product and 24 percent for the latter.

It is interesting to note that the bulk of the substitution of these two products

that occurred between 1955-61 was attained without the benefit of foreign capital.

Foreign capital, in the paper industry, was not even authorized until 1959 and cer-

tainly did not reach the "pay-off" stage until at least 1960. Nevertheless, between

1956 and 1959 (before foreign capital entered) the firms producing wood pulp increased

their output by 43 percent; between 1959 and 1961, output increased by only a little

over 3 percent. The same relationship holds true for workpaper and writing paper.

Between 1956 and 1958, domestic output increased 5 percent; between 1958 and 1961

it grew by less than .5 percent. What these data suggest is that the Hirschman hypo-

thesis does seem to operate even within the confines of the constraints peculiar to the

Argentine economy. Nevertheless, the further domestication of the paper industry re-

quired foreign investment and special tax concession programs for local industrialists.

The government legislated this program specifically to realize foreign exchange sav-

ings.[11] Foreign investment authorizations were begun in 1959 and by 1963 had

reached $3.9 million (see Table 7 in Chapter II). The tax concession program for

local businessmen was instituted in late 1961.[12] These programs were, by and large,

successful in stimulating the expansion of the wood pulp industry: output increased

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[11]Pan American Union, General Secretariat of the Organization of American States, Economic Survey of Latin America, 1962 (Baltimore, The Johns Hopkins Press, 1964), p. 154.

[12]Ibid.

rapidly from 89,215 tons in 1961 to 99,289 tons in 1963 and 133,684 in 1965.[13] It

is estimated that by 1966, production exceeded 140,000 tons.[14] Although the capi-

tal cost of this expansion is not known (or at least, not readily available), a reason-

able estimate of its magnitude may be made. A recent study by the United Nations'

Economic Commission for Latin America (ECLA) estimates that the minimal capital

needed to produce a ton of paper pulp is $257.13.[15] Assuming a 50,000 ton increase

in production between 1961 and 1966, it follows that the necessary investment to

achieve this expansion (assuming that the industry was already operating at or near

capacity) was approximately $12,856,500.[16] Although data are lacking, it seems

reasonable to assume that foreign capital was necessary to finance the import compon-

ent of this investment. The role of foreign investment in the pulp and paper industry,

however, should certainly not be overemphasized.[17] The paper industry is relatively

atomistic, with ninety-four producers of cardboard and paper and twenty-seven of

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[13]Argentina Económica y Financiera (Buenos Aires: Oficina de Estudios para la Colaboración Económica Internacional, 1966), p. 197.

[14]"The Paper Industry," Comments on Argentine Trade, December, 1966, p. 41.

[15]United Nations, Economic Commission for Latin America, Economic Survey of Latin America, 1965 (New York, 1967), pp. 336-37.

[16]If less efficient plants are used, ECLA estimates that the capital cost per ton would be $383.76. If this figure is used in the above calculations, the total capital cost increases to $19,238,000.

[17]United States firms represent slightly over 50 percent of the dollar value of foreign investment in Argentina. Since data for other countries were not readily available, I use only United States investment figures and generalize from them.

cellulose and wood pulp, and the number of U.S. firms is not large. In fact, the

United States Chamber of Commerce in Argentina lists only five U.S. paper firms in

Argentina.[18] In conclusion, it should be noted that the pulp and paper industry is

not one of the more important ones in Argentina, with an annual employment of just

twelve thousand.[19]

GROUP III: STEEL AND IRON PRODUCTS[20]

The products in this group represent one of the more successful examples of

government import substitution policy in the recent history of Argentine industrial

development. Between 1955 and 1962, the amount expended on the importation of

these products declined from $172.9 million to $119 million. This performance is even

more impressive when it is realized that during the same period the automobile industry

was established, a factor which greatly increased the demand for iron and steel. The

individual performances of these three products (see Tables 18, 19 and 20 in the Appen-

dix) are discussed below.

Cast iron showed the most rapid and the most complete substitution of the three

products. From 1955 to 1961, the import component of total domestic consumption fell

from 85 percent to 14 percent, and between 1955 and 1962, dollar imports fell from

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[18]"The Paper Industry," op. cit., pp. 39-41.

[19]Ibid., p. 41.

[20]The products in this group comprise the entire output of the Argentine steel
and iron industry. These data are highly aggregated and there are, in fact, far more
than just the three products, as Tables 18, 19 and 20 in the Appendix would suggest.
The "product" laminated steel actually consists of twenty-two sub-products. Cast iron
consists of three sub-products.

$11.6 million to $1.07 million. It is interesting to note that no substitution occurred

until 1960 (see Table 18 in the Appendix). The increase in domestic output between

1959 and 1961, however, was more than tenfold. This amazing rate of expansion

continued in the early nineteen-sixties, and by 1965 domestic output was at an annual

rate of 1,368,000 tons,[21] a truly amazing increase over the 1959 rate of 32,000

tons. The source of this growth was neither domestic nor foreign private capital but

rather was entirely the result of new state-owned enterprises.[22] At first blush, this

fact would seem to refute one of the basic themes of this dissertation, the need for

foreign investment as a growth source in Argentina. In fact, it does not. It is true

that the government was able to establish,[23] without foreign private capital, a vig-

orous and viable iron and steel industry. Foreign government loans, however, played

a vital role in the establishment of this industry. As explained previously, in late

1958, the Argentine government instituted a Stabilization Plan under the auspices of

the International Monetary Fund. As part of this program Argentina received $329

million (an amount equal to one-third of the then annual export earnings) in foreign

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[21]Argentina Económica y Financiera, op. cit., p. 212.

[22]State-owned entities account for 100 percent of cast iron production.
Source, "The Metal Industry," Comments on Argentine Trade, December, 1966,p.31.

[23]Actually, the industry was established before 1960. Local production began
as early as 1896, but was of a very small scale until 1947, when the government cre-
ated "Sociedad Mixta Siderurgia Argentina" (SOMISA), a state-owned enterprise for
the production of all three products included in this group: pig iron, rolled steel, and
steel ingots. This entity was completely reorganized in early 1961, old plants were
modernized and integrated, and new plants were established. Source, Argentina
Económica y Financiera, op. cit., pp. 210-12.

loans.[24] These reserves, doubtlessly, were significant in allowing the government

to finance the import component of the to-be-expanded iron and steel industry.

The recent expansion of laminated (i.e., rolled) steel output is also impres-

sive. Between 1955 and 1961, domestic output increased some 38 percent (see Table

20 in the Appendix). This trend continued thereafter, and by 1965, domestic produc-

tion was 1,543,000 tons,[25] an increase of 134 percent over the 1955 level. This in-

crease in domestic production caused the import coefficient to decline from 50 percent

and 47 percent in 1955 and 1961, respectively, to only 27 percent in 1965.[26] Here

again the Argentine government played an important role in the development of this

industry, and at the present time state-owned enterprises account for 33 percent of

the annual production of rolled steel.[27]

Steel ingot production shows much the same pattern as occurred with rolled

steel and cast iron. Between 1955 and 1961, domestic output more than doubled (see

Table 19 in the Appendix). By 1965, domestic production was 1,368,000[28] an increase

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[24]The sources of these loans were as follows. "The International Monetary Fund, the leading external influence behind the stabilization plan, provided $75 million; the United States Treasury pledged to purchase pesos for dollars up to $50 million; the Export-Import Bank provided $125 million, and the United States Development Loan Fund lent $25 million. Ten private United States banks and one Canadian bank lent $54 million." Source: Carlos F. Díaz Alejandro, Exchange-Rate Devaluation in a Semi-Industrialized Country, op. cit., p. 148.

[25]Argentina Económica y Financiera, op. cit., p. 213.

[26]Ibid.

[27]"The Metal Industry," op. cit., p. 31.

[28]Argentina Económica y Financiera, op. cit., p. 212.

of 518 percent over the 1955 level. Nevertheless, because of the large increase in the demand for steel, the import component of steel ingot consumption fell only modestly, from 74 percent and 62 percent in 1955 and 1961, respectively, to 50 percent in 1965.[29] As with the other two products in this group, state-owned enterprises were important, accounting for 57 percent of all crude steel domestically produced.[30]

Above I have described the importance of foreign loans in allowing the Argentine government to finance the imports needed for the expansion of the iron and steel industry. It should be noted that direct private foreign investment also played a role in this expansion. Although disaggregated data are not readily available, it is known that, during the period 1958-63, the Argentine government authorized foreign investment of $94.9 million for the metallurgical industries (see Table 7 in Chapter II).

GROUP IV: PETROLEUM AND PETROLEUM PRODUCTS

The large amount of foreign exchange expended for the importation of petroleum products in the nineteen-fifties, made this industry a prime candidate for import substitution. The five petroleum products in this group (see Tables 21, 22, 23, 24, and 25 in the Appendix) alone had a 1957 import cost of $265,378,685 (a little over 20 percent of total 1957 imports). Because of this drain on foreign exchange, one of the first acts of the Frondizi administration was to sign contracts with foreign enterprises for the exploration and extraction of petroleum. During the period 1958-63,

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[29]Ibid.

[30]"The Metal Industry," op. cit., p. 31.

the Argentine government authorized $348 million in foreign petroleum investment, and it is estimated that 70 percent of this amount was actually invested.[31] The immediate impact of this investment may be seen in Table 21 in the Appendix. Domestic crude petroleum production increased 150 percent between 1958 and 1961, and by 1962, it had reached an annual rate of 15,542,000 cubic meters.[32] The net result of all this was a significant increase in foreign exchange savings and a sharp decline in the import coefficient. Whereas in 1957 crude petroleum imports were $173,427,281, by 1962 such imports amounted to only $23,800,034.[33] In a like manner, the import coefficient declined from 57 percent in 1958 to 14 percent and 5.5 percent in 1961 and 1963, respectively. Unfortunately, in November of 1963, the new Argentine President, Arturo Illia (inaugurated in October, 1963), fulfilled his campaign promise and cancelled the foreign oil contracts. Although foreign countries continued to operate, pending court settlement, further expansion plans were quickly scuttled and domestic output stagnated. By 1965 the annual production of crude petroleum was 15,408,921 cubic meters, down slightly from the 1962 level of 15,542,103 cubic meters.[34] During the same period (1962-65) the economy's consumption of petroleum increased by a little over 16 percent. This, combined with domestic output stagnation,

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[31]"Petroleum, Energy and Transport," Comments on Argentine Trade, December, 1966, p. 29.

[32]Argentina Económica y Financiera, op. cit., p. 203.

[33]For Group IV Products as a whole--imports declined from $265,378,685 in 1957 to only $57,635,625 in 1962. The former figure represents 20.3 percent of total 1957 imports and the later figure, 4.3 percent of total 1962 imports.

[34]Argentina Económica y Financiera, op. cit., p. 203.

necessitated a sharp increase in petroleum imports and by 1965, Argentina was import-

ing 4,086,075 cubic meters of crude petroleum, or 21 percent of total domestic con-

sumption.[35] Obviously, the cancelling of the foreign oil contracts has cost the

country much in foreign exchange[36] and is indicative of the strong anti-foreign-

investment sentiment in Argentina. Fortunately, the still newer Argentine President,

Juan Carlos Onganía (inaugurated June 28, 1966), in 1967 expressed interest in re-

negotiating the oil contracts with foreign firms.[37] Economically, this would appear

to make excellent sense, saving the country large amounts of foreign exchange which

could better be used elsewhere.

GROUP V: AUTOMOBILES AND TRUCKS

The rationale for the domestication of the automotive industry was the same

as that given for the domestication of the steel and petroleum industries: such indus-

tries were viewed as necessary components of a strong industrial base and, domestica-

tion offered the promise of significant foreign exchange savings. In the case of the

automotive industry, however, still another factor was operative and that was the

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[35]Ibid.

[36]The Illia regime was costly in other respects as well. In the presidential cam-
paign Illia made two key promises: the annulment of the foreign oil contracts and the
severing of all ties with the International Monetary Fund and the World Bank. Both of
these promises he immediately kept, the result of which was to curtail drastically Ar-
gentine external financing. For example, during the period 1960-62 (i.e., before
Illia), net external financing averaged $393.3 million per year; during the period
1963-65 (i.e., after Illia assumed office), net external financing averaged -$107.7
million annually. Source: Economic Survey of Latin America, 1965, op. cit., p. 12.

[37]"Petroleum Policy: Back to Sanity," The Review of the River Plate, Janu-
ary 21, 1967, p. 59.

horrendous condition and relatively small number of vehicles operating in Argentina.

In 1959, Argentina enjoyed the dubious distinction of being the only country in the

world to have had more vehicles per inhabitant in 1929 than it did in 1959. An

ECLA study revealed that in 1939, there were twenty-three vehicles for every thou-

sand inhabitants while the average age of each vehicle was seven years. By 1959,

the situation had so deteriorated that there were only nineteen vehicles per one

thousand inhabitants, with the average age of each vehicle now being twenty years.[38]

Clearly something had to be done. Therefore, the Frondizi administration opted to

use private foreign investment in order to expand the industry.[39] Thus, during the

period 1959-63, foreign investment authorizations for the industry totalled $104 mil-

lion. By 1965, the total investment, including "plowed-back profits," was $500 mil-

lion.[40] As a result, the number of firms increased from four to twenty-two and,

domestic production increased rapidly and by significant amounts. All together, the

number of automotive vehicles (i.e., trucks and cars) domestically produced increased

from 27,834 in 1958 to 136,184 units in 1961 (see Tables 26 and 27 in the Appendix).

After 1961 this trend continued and by 1965, domestic production was 196,754 units.[41]

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[38]Buenos Aires Herald, May 23, 1967, p. 4.

[39]The Argentine automotive industry was first established in Argentina in
1950. Nevertheless, until the entry of foreign firms in 1959, the quantities produced
were far short of the needs of the Argentine economy. This small scale of production,
before 1959, is shown in Tables 26 and 27 in the Appendix.

[40]Buenos Aires Herald, op. cit., p. 2.

[41]Argentina Económica y Financiera, op. cit., p. 216.

As a result of this expansion, the import cost of these products declined, from

$123,791,288 in 1957 to $27,899,288 in 1962. By 1965, the import cost of trucks,

buses and cars was only $9.2 million.[42] It should be noted, however, that this decline

in imports did not represent "pure" foreign exchange savings. Many of the inputs

used in making vehicles had to be imported. For example, in 1965 General Motors

of Argentina produced 25,212 vehicles, the cost of which would have been

$62,796,000 had they been imported instead of being produced locally. It is estim-

ated that imported foreign inputs required to produce these vehicles domestically cost

$9,283,000.[43] Although precise industry data are lacking, it seems clear that the

net foreign exchange savings attributable to the domestication of the automobile in-

dustry are, nevertheless, substantial.

The automobile industry has had a beneficial impact upon Argentina in other

respects as well. The number of vehicles on the road has almost trebled since 1955

and in 1967 was close to 1,800,000.[44] This has served to increase the mobility of the

population and the overall efficiency of the transportation system (both freight and

passenger). Moreover, in 1965, the twelve firms in the industry directly employed

37,000 workers,[45] and it is estimated that directly and indirectly 300,000 families

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[41]Argentina Económica y Financiera, op. cit., p. 216.

[42]"The Automotive Industry," Comments on Argentine Trade, December 1966,
p. 31.

[43]Buenos Aires Herald, op. cit., p. 8.

[44]Ibid., p. 4.

[45]Ibid., p. 2.

depend on the industry for their livelihood.[46]

Unlike the steel and petroleum industries, the automobile industry suffers from excess capacity, high unit costs, and very heavy taxation. (In 1965, for example, the price of a small car was equivalent to the wages of a skilled worker over a period of 29 months.) Because of this, the number of firms has progressively declined, from twenty-two in 1959 to eleven in 1966. This trend seems likely to continue in the future as the top six producers progressively increase their market share (in 1964 they accounted for 85 percent of industry sales).[47] Actually a decrease in the number of firms would be beneficial in lowering unit costs. Annual sales seemed to have stagnated at less than 200,000 units, and at this output level only two or three firms would be economically viable.[48] Of course, if sales increase, then more firms could be supported. Increasing sales would result if the Latin American Free Trade Area ever becomes effective.[49]

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[46]Argentina Economica y Financiera, op. cit., p. 215.

[47]In 1964, the top 6 producers in Argentina were Kaiser, Chrysler, Ford, General Motors, Fiat, and Siam DiTella. The first four, all U.S. subsidiaries, accounts for 71 percent of total sales. Source: Economic Survey of Latin America, 1965, op. cit., p. 321.

[48]The minimum economic size for an automobile firm is not accurately known. Usual estimates are in the range of 200,000 to 300,000 units per year. The Mexican authorities, however, consider 100,000 units per year to be the minimum economic size. Source, Ibid., p. 318.

[49]In 1964, Argentina accounted for 35 percent of the total Latin American production of automobile vehicles. Source, Ibid., p. 317.

GROUP VI: TRACTORS AND COMBUSTIBLE MINERAL SOLIDS

As mentioned above, this group is a residual category and the two products have no common characteristics. Therefore, each product is discussed separately below.

Domestic production of combustible mineral solids was not begun until 1950 (see Table 29 in the Appendix) and until 1956 was sufficient to provide only 5 percent or less of domestic consumption. During the period 1955-61, however, domestic output more than trebled. As a result the import cost of this product declined from $33,395,525 in 1955 to $10,014,393 in 1962. Nevertheless, in 1961, the import co-efficient was still a high 84 percent. Production expansion continued at a slower rate after 1961; nevertheless, by 1965, domestic production was 374,000 tons, or approximately 35 percent of domestic consumption.[50] It appears as if this is about as far as the substitution process can go. For one thing, domestic demand is continually declining as petroleum derivatives are increasingly substituted for combustible solids.[51] Obviously, this decreases the financial attractiveness of further expansion. Secondly, most of the better reserves are located in Patagonia and the serious lack of social overhead capital (mainly transportation) in that region vitiates against commercial development. Finally, it should be noted that data concerning the financial source of the post-1955 expansion were generally lacking, but what there were, indicated

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[50]Argentina Económica y Financiera, op. cit., p. 242.

[51]In the period 1935-39, combustible mineral solids were the source for 23.6 percent of total energy consumption. In 1950-54, their relative share was 9.1 percent and by 1965, only 3.4 percent.

no foreign participation.

Tractor production did not begin in Argentina until 1956, the second year of

strong balance of payments pressures. At the time Argentina was spending large quan-

tities of foreign exchange on the importation of tractors and it was felt that domestica-

tion of the industry could affect significant foreign exchange savings. Moreover, a

plentiful supply of good quality tractors was viewed as a necessary condition for the

mechanization of the agricultural sector.[52] The government, therefore, authorized

foreign investment, totalling $16.2 million during the period 1959-63 (see Table 7

in Chapter II).[53] The result of this investment was a marked increase in output (see

Table 28 in the Appendix) and a significant decline in imports. By 1961, Argentina

was virtually self-sufficient in the production of tractors. This substitution resulted

in significant foreign exchange savings, as dollar imports declined from $35,171,753

in 1955 to $2,974,656 in 1962. Although some parts are imported, most are produced

locally. John Deere and Company, for example, estimates that only 10 percent of

its raw materials are imported.[54] The low percentage of imported parts is due in part

to governmental policy. As a part of the original investment contracts, tractor firms

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[52]Roughly 40 to 50 percent of total export earnings are derived from the agri-
cultural sector (this excludes animal products). Mechanization and the concomitant
increase in productivity of this sector would, therefore, tend to increase export earn-
ings and the availability of foreign exchange.

[53]It is interesting to note that John Deere and Company (a U.S. firm), one of
the five local producers, was established before this period. The company was tempor-
arily established in June of 1957 and permanently established in January of 1958.
Source, Comments on Argentine Trade, April, 1967, p. 75.

[54]Ibid.

agreed to import progressively less and less component parts, and imports above the agreed upon levels were to be subject to high surcharges.[55] This provision served to stimulate the vertical integration of the tractor industry and to minimize foreign exchange expenditures.[56]

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[55]In 1967, 7 percent of component parts were allowed to be imported without surcharge, 2 percent with 150 percent surcharge, and 2 percent with 300 percent surcharge.

[56]A similar provision has had much the same effect upon the automobile industry.

CHAPTER V

SUMMARY AND CONCLUSIONS

SYNTHESIS OF FINDINGS

An examination of the relationship between Argentina's balance of payments pressures and import substituting industrialization has demonstrated that the former has had a pronounced effect on the latter during the period 1945-61. Thus the Hirschman hypothesis that balance of payments pressures induce import substitution has been supported by the Argentine experience of the late nineteen-fifties and early nineteen-sixties.

Successful import substitution, by and large, required large-scale foreign investments. To be sure, certain products were substituted without foreign participation. These products were quantitatively unimportant, comprising a small share of total imports. Significantly, their domestication required little or no capital. In brief, for these products the foreign exchange bottleneck was not an impossible hurdle.

The more important products and groups of products studied (i.e., automobiles, trucks, oils, paper and paper products, iron and steel, and tractors) did require foreign participation in the import substitution process. This resulted from the basic structure of the Argentine economy when balance of payments pressures were first evidenced and import substitution felt to be necessary. By the late nineteen-forties, the stage of easy import substitution, involving technologically simple, labor-intensive

industries, was completed. Remaining to be substituted were the technologically complex, capital-intensive industries, which required for their establishment large amounts of imported capital. Given the prevailing low level of foreign exchange and a stagnant export sector, foreign investment was necessary in order to overcome the foreign exchange bottleneck.

FUTURE INVESTIGATIONS

In the course of analyzing such a broad subject as contained in this study, several related research topics have been uncovered. For reasons of continuity, these topics have been set aside for future study.

Attracting Foreign Investment

It seems clear that balance of payments pressures were an important considera-tion in the promulgation of the Industrial Promotion Laws, the purpose of which was the attraction of foreign investment. Indeed, in order to qualify for the special bene-fits under the Laws, foreign firms, generally, had to contribute to export expansion and/or import substitution. What is less clear is why foreign investment was attracted to Argentina. High levels of protection, tax incentives, subsidies, and a favorable investment climate all were important, but which variables were critical is not known. Examination of this issue would provide data that could be of considerable relevance to underdeveloped nations desiring foreign investment.

Foreign Investment as a Necessary Condition for Growth

By the mid-nineteen-fifties, the structure of the Argentine economy was such that the attraction of foreign investment became a necessary condition for growth. This resulted from Argentina's post-1930 growth strategy that emphasized technologically simple, labor-intensive import substitution to the exclusion of technologically complex, capital-intensive import substitution. When this stage was complete, it was Argentina's misfortune to be beset by balance of payments problems and a concomitant sharp decline in the level of foreign exchange. Since the establishment of the remaining industries required large amounts of imported capital, the lack of foreign exchange became a bottleneck and recourse to foreign investment was necessary. It seems likely that this pattern is relevant to other Latin American countries. Many countries in Latin America also have, since 1930, stressed "easy" import substitution. Will these countries, if beset by balance of payments difficulties, also have to rely on foreign capital in order to domesticate the technologically complex, capital-intensive sector of the economy? A cursory examination of Brazilian data suggests that similar pressures induced the Brazilian authorities to accept large amounts of foreign investment in the late nineteen-fifites and early nineteen-sixties. The type of analysis developed in this dissertation should be applied to an examination of other relatively well-developed countries in Latin America. A careful analysis, country by country, of the process of import substitution and its pitfalls, would be particularly valuable to the lesser developed countries now embarking upon industrialization efforts.

BIBLIOGRAPHY

SELECTED BIBLIOGRAPHY

BOOKS

Adelman, Irma, and Morris, Cynthia Taft. Society, Politics and Economic Development: A Quantitative Approach. Baltimore: The Johns Hopkins Press, 1967.

Balassa, Bela. Economic Development and Integration. México: Centro de Estudios Monetarios Latinoamericanos, 1965.

Baranyai, L., and Mills, J.C. International Commodity Agreements. México: Centro de Estudios Monetarios Latinoamericanos, 1963.

Benjamin, Harold R.W. Higher Education in the American Republics. New York: McGraw-Hill Book Co., 1965.

Bernstein, Marvin D. (ed.). Foreign Investment in Latin America: Cases and Attitudes. New York: Alfred A. Knopf, 1966.

Blanksten, George I. Perón's Argentina. Chicago: University of Chicago Press, 1953.

Bruton, Henry J. Principles of Development Economics. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1965.

Burr, Robert N. Our Troubled Hemisphere. Washington: The Brookings Institution, 1967.

Butland, Gilbert J. Latin America: A Regional Geography. 2d ed. New York: John Wiley and Sons, Inc., 1966.

Committee for Economic Development. Cooperation for Progress in Latin America. New York: Committee for Economic Development, 1961.

_____. Regional Integration and the Trade of Latin America. New York: Committee for Economic Development, 1968.

Díaz Alejandro, Carlos F. Exchange-Rate Devaluation in a Semi-Industrialized Country. Cambridge, Mass.: The M.I.T. Press, 1965.

Ellsworth, Paul T. The International Economy. 4th ed. London: The Macmillan Company, 1969.

Enke, Stephen. Economics for Development. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1963.

Ferrer, Aldo. The Argentine Economy. Translated by Marjory M. Urquidi. Berkeley: University of California Press, 1966.

_____. La Economía Argentina. Mexico City: Fondo de Cultura Económica, 1963.

Fillol, Tomás Roberto. Social Factors in Economic Development: The Argentine Case. Cambridge, Mass.: The M.I.T. Press, 1961.

Gordon, Wendell C. The Political Economy of Latin America. New York: Columbia University Press, 1966.

Hagen, Everett E. On the Theory of Social Change. Homewood, Ill.: The Dorsey Press, Inc., 1962.

Herring, Hubert. A History of Latin America. 3rd ed. New York: Alfred A. Knopf, 1968.

Higgins, Benjamin. Economic Development. New York: W.W. Norton and Company, 1959.

Hirschman, Albert O. The Strategy of Economic Development. New Haven, Conn.: Yale University Press, 1967.

Laurant, Henry W. Factors Affecting Foreign Investment in Argentina. Menlo Park, Calif.: International Development Center, 1963.

Mac Bean, Alasdair I. Export Instability and Economic Development. Cambridge, Mass.: Harvard University Press, 1966.

Maizels, Alfred. Industrial Growth and World Trade. Cambridge: Cambridge University Press, 1963.

McClelland, David C. The Achieving Society. New York: The Free Press, 1967.

McGann, Thomas F. Argentina: The Divided Land. Princeton: D. Van Nostrand, Inc., 1966.

Meier, Gerald M. Leading Issues in Development Economics. New York: Oxford University Press, 1964.

Oficina de Estudios para la Colaboración Económica International. Argentina Económica y Financiera. Buenos Aires, 1966.

_____. Argentina: Síntesis Económica y Financiera No. 1. Buenos Aires, 1961.

_____. Balance de Pagos de la Argentina. Buenos Aires, 1963.

_____. Importaciones, Industrializacion, Desarrollo Economico en la Argentina. 2 Volumes. Buenos Aires, 1963.

_____. Nivel de la Economia Argentina. Buenos Aires, 1966.

Pendle, George. Argentina. London: Oxford University Press, 1955.

Peterson, Harold F. Argentina and the United States, 1810-1960. New York: University Publishers, Inc., 1964.

Rostow, W.W. The Stages of Economic Growth. Cambridge: Cambridge University Press, 1960.

Russett, Bruce M., et al. World Handbook of Political and Social Indicators. New Haven, Conn.: Yale University Press, 1964.

Schlesinger, Arthur M. Jr. A Thousand Days. Greenwich, Conn.: Fawcett Publications, Inc., 1965.

Schultz, Theodore W. Transforming Traditional Agriculture. New Haven, Conn.: Yale University Press, 1964.

Scobie, James R. Argentina: A City and a Nation. New York: Oxford University Press, 1964.

_____. Revolution on the Pampas. New York: Oxford University Press, 1964.

Snow, Peter G. Argentine Radicalism. Iowa City: University of Iowa Press, 1965.

Vernon, Raymond (ed.). How Latin America Views the U.S. Investor. New York: Frederick A. Praeger, Publishers, 1967.

Villanueva, Javier. The Inflationary Process in Argentina, 1943-60. 2d ed. Buenos Aires: Center of Economic Research, DiTella Institute, 1966.

Weil, Felix. Argentine Riddle. New York: The John Day Company, 1944.

Whitaker, Arthur P. Argentina. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1965.

OFFICIAL PUBLICATIONS

Banco Central de la República Argentina. Memoria Anual. Buenos Aires, various issues.

Consejo Nacional de Desarrollo. Plan Nacional de Desarrollo, 1965-69. Buenos Aires, 1965.

Dirección Nacional de Estadística y Censos de la República Argentina. Comercio Exterior. Buenos Aires, various issues.

International Monetary Fund. International Financial Statistics. Washington, various issues.

Pan American Union. General Secretariat of the Organization of American States. Economic Survey of Latin America, 1962. Baltimore: The Johns Hopkins Press, 1964.

_____. Latin America: Problems and Perspectives of Economic Development, 1963-64. Baltimore: The Johns Hopkins Press, 1966.

United Nations. The Economic Development of Latin America in the Post-War Period. New York: 1964.

_____. Towards a Dynamic Development Policy for Latin America. New York: 1963.

_____. Department of Economic Affairs. Statistical Yearbook, 1949-50. New York: 1951.

_____. Department of Economic and Social Affairs. Yearbook of National Accounts Statistics: 1965. New York: 1966.

_____. Yearbook of National Accounts Statistics: 1966. New York: 1967.

_____. Economic Commission for Latin America. El Desarrollo Económico de la Argentina. 3 Volumes. Mexico: 1959.

_____. El Desarrollo Económico de la Argentina: Anexo. Santiago de Chile: 1958.

_____. The Economic Development of Latin America and Its Principle Problems. Lake Success, New York: 1950.

_____. Economic Survey of Latin America, 1965. New York: 1967.

_____. The Process of Industrial Development in Latin America. New York: 1966.

ARTICLES

Chenery, Hollis B. "Patterns of Industrial Growth," American Economic Review, September, 1960.

Diaz Alejandro, Carlos F. "The Argentine Tariff," Center Paper No. 124, New Haven, Conn.: Yale University, Economic Growth Center, 1968.

_____. "On the Import Intensity of Import Substitution," Center Paper No. 72, New Haven, Conn.: Yale University, Economic Growth Center, 1965.

Eshag, Eprime, and Thorp, Rosemary. "Economic and Social Consequences of Orthodox Economic Policies in Argentina in the Post-War Years," Bulletin of the Oxford University Institute of Economics and Statistics, February, 1965.

Felix, David. "Monetarists, Structuralists, and Import Substitution Industrialization: A Critical Appraisal," in Inflation and Growth in Latin America. ed. Werner Baer and Isaac Kerstenetsky. Homewood, Ill.: Richard D. Irwin, Inc., 1964.

Katz, Jorge, and Gallo, Ezequiel. "The Industrialization of Argentina," in Latin America and the Caribbean. ed. Claudio Véliz. New York: Frederick A. Praeger, Publishers, 1968.

Kelly, Ruth. "Foreign Trade of Argentina and Australia, 1930 to 1960," Economic Bulletin for Latin America, March and October, 1965.

Macario, Santiago. "Protectionism and Industrialization in Latin America," Economic Bulletin for Latin America, March, 1964.

Machlup, Fritz. "The Need for Monetary Reserves," Reprints in International Finance. No. 5. Princeton: Princeton University Press, 1966.

Singer, H.W. "The Distribution of Gains Between Investing and Borrowing Countries," American Economic Review, May, 1950.

Smithies, Arthur. "Argentina and Australia," American Economic Review, May, 1965.

Strassmann, W. Paul. "The Industrialist," in Continuity and Change in Latin America, ed. John J. Johnson. Stanford, Calif.: Stanford University Press, 1964.

Vazquez, Enrique Garcia. "An Argentine View," in How Latin America Views the U.S. Investor. ed. Raymond Vernon. New York: Frederick A. Praeger, Publishers, 1967.

United Nations. Economic Commission for Latin America. "The Growth and Decline of Import Substitution in Brazil," Economic Bulletin for Latin America, March, 1964.

PERIODICALS AND NEWSPAPERS

The Herald. Buenos Aires, various issues.

Comments on Argentine Trade. Buenos Aires, various issues.

Review of the River Plate. Buenos Aires, various issues.

UNPUBLISHED MATERIALS

Balassa, Bela. "Integration and Resource Allocation in Latin America." A paper presented to the Seminar on Strategy for the Foreign Sector and Economic Development, Buenos Aires, September 7-10, 1966. Buenos Aires: Center of Economic Research, DiTella Institute, 1966.

Brodersohn, Mario S. Regional Development and Industrial Location Policy in Argentina. Buenos Aires: Center of Economic Research, DiTella Institute, 1966.

Díaz Alejandro, Carlos F. Stages in the Industrialization of Argentina. Buenos Aires: Center of Economic Research, DiTella Institute, 1966.

DiTella, Guido, and Zymelman, Manuel. Etapas del Desarrollo Económico Argentino. Buenos Aires: Center of Economic Research, DiTella Institute, 1961.

Felix, David. "Beyond Import Substitution: A Latin American Dilemma." A paper presented to the Seminar on Strategy for the Foreign Sector and Economic Development, Buenos Aires, September 7-10, 1966. Buenos Aires: Center of Economic Research, DiTella Institute, 1966.

_____. Did Import Substituting Industrialization in Argentina Save Foreign Exchange in 1953-60? A Report on Some Findings. Buenos Aires: Center of Economic Research, DiTella Institute, 1965.

_____. Industrialización Sustitutiva de Importaciones y Exportación Industrial en la Argentina. Buenos Aires: Center of Economic Research, DiTella Institute, 1965.

Ferrer, Aldo, and Wheelwright, E.L. Industrialization in Argentina and Australia: A Comparative Study. Buenos Aires: Center of Economic Research, DiTella Institute, 1966.

Tulchin, Joseph. "La Primera Guerra Mundial como Catalizador de Nacionalismo Argentino." Unpublished Seminar Paper, May 5, 1967. Buenos Aires: DiTella Institute.

Zalduendo, Eduardo. El Empresario Industrial en Argentina. Buenos Aires: Center of Economic Research, DiTella Institute, 1966.

INTERVIEWS

Beranger, Raúl. Associate Director of the Oficina de Estudios para la Colaboración Económica Internacional. Personal interview (May, 1967).

Zalduendo, Eduardo. Former Vice President of the Argentine Central Bank. Personal interview (January, 1967).

APPENDIX

TABLE 1

PRODUCTION AND IMPORTATION OF ASBESTOS, 1945-61

(in tons)

Year	Domestic Production	Importation	Total Supply	Import Coefficient	Substitution Coefficient
1945	173	9,810.2	9,983.2	98%	
1946	209	4,879.6	5,088.6	96%	cannot compute
1947	334	7,233.7	7,567.7	96%	zero
1948	126	7,699.1	7,825.1	98%	negative
1949	340	5,918.1	6,258.1	95%	1948-50 6%
1950	271	9,298.9	9,569.9	97%	negative
1951	261	18,332.6	18,593.6	99%	negative
1952	212	4,409.6	4,621.6	95%	cannot compute
1953	37	9,722.6	9,759.6	99%	negative
1954	152	2,977.7	3,129.7	95%	1953-55 42%
1955	1,252	11,205.5	12,457.5	90%	7%
1956	216	5,245.4	5,461.4	96%	1954-56 negative
1957	289	9,088.6	9,377.6	97%	negative
1958	259	8,886.6	9,145.6	97%	1956-58 negative
1959	--	7,794.4	7,794.4	100%	1958-60 negative
1960	--	10,727.9	10,727.9	100%	zero
1961	200	9,522.7	9,722.7	98%	1959-61 10%

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina (Buenos Aires: Oficina de Estudios para la Colaboración Económica Internacional, 1963), p. 78.

TABLE 2

PRODUCTION AND IMPORTATION OF ANTIMONY, 1945-61

(in tons)

Year	Domestic Production	Importation	Total Supply	Import Coeffi- cient	Substitution Coefficient
1945	22.0	535.6	557.6	96%	--
1946	--	772.7	772.7	100%	negative
1947	--	582.4	582.4	100%	1945-47 negative
1948	11	450.3	461.3	98%	1947-49 43%
1949	95	712.9	807.9	88%	24%
1950	28	1,375.9	1,403.9	98%	negative
1951	--	510	510	100%	1948-51 negative
1952	30	741.6	771.6	96%	12%
1953	--	245.0	245.0	100%	cannot compute
1954	24	590.9	614.9	96%	7%
1955	12	569.6	581.6	98%	1953-55 3%
1956	--	538.5	538.5	100%	1955-57 zero
1957	11	680	691	98%	9%
1958	25	1,391.4	1,416.4	98%	zero
1959	--	662.1	662.1	100%	1956-59 zero
1960	--	300.6	300.6	100%	cannot compute
1961	--	621.0	621.0	100%	zero

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina, op. cit., p. 68.

TABLE 3

PRODUCTION AND IMPORTATION OF NEWSPRINT, 1941-61

(in tons)

Year	Domestic Production	Importation	Total Supply	Import Coeffi- cient	Substitution Coefficient
1941	--	134,849	134,849	100%	
1946	1,792	142,576	144,368	99%	15%
1948	2,937	121,347	124,284	98%	cannot compute
1950	2,799	101,269	104,068	97%	cannot compute
1954	11,850	43,337	55,187	79%	cannot compute
1956	18,963	94,210	113,173	83%	negative: 1950-56 179%
1957	13,777	125,394	139,171	90%	negative
1958	11,516	160,827	172,343	93%	negative
1959	5,707	127,291	132,998	96%	negative: 1957-61 negative
1960	9,324	161,732	171,056	95%	5%
1961	9,292	213,706	222,998	96%	negative

Source: Importaciones, Industrializacion, Desarrollo Económico en la Argentina, op. cit., p. 132.

TABLE 4

PRODUCTION AND IMPORTATION OF ELECTRIC METERS, 1945-61

(in thousands of units)

Year	Domestic Production	Importation	Total Supply	Import Coeffi- cient	Substitution Coefficient
1945	--	46.7	46.7	100%	--
1946	--	46.7	46.7	100%	zero
1947	--	68.0	68.0	100%	zero
1948	--	198.2	198.2	100%	zero
1949	--	127.8	127.8	100%	zero
1950	--	53.8	53.8	100%	zero
1951	--	168.8	168.8	100%	zero
1952	--	188.2	188.2	100%	zero
1953	--	28.6	28.6	100%	zero
1954	58.0	8.8	66.8	13%	152%
1955	80.5	19.1	99.6	19%	negative
1956	128.6	16.9	145.5	12%	284%
1957	130.2	26.6	156.8	17%	negative
1958	141.0	49.7	190.7	26%	negative
1959	136.5	6.9	143.4	5%	1955-59 241%
1960	188.0	27.0	215.0	13%	negative
1961	236.0	73.7	309.7	24%	negative

Source: Importaciones, Industrialización Desarrollo Económica en la Argentina, op. cit., p. 238.

TABLE 5

PRODUCTION AND IMPORTATION OF YERBA MATE, 1945-61

(in tons)

Year	Domestic Production	Importation	Total Supply	Import Coefficient	Substitution Coefficient
1945	84,000	24,800	108,800	23%	--
1946	99,400	27,000	126,400	21%	62%
1947	121,300	31,300	152,600	21%	zero
1948	112,000	29,400	141,400	21%	1946-48 zero
1949	117,300	19,800	137,100	14%	1946-49 427%
1950	103,300	10,300	113,600	9%	1945-50 454%
1951	100,700	17,200	117,900	15%	negative
1952	137,000	12,400	149,400	8%	237%
1953	127,900	9,100	137,000	7%	1951-53 382%
1954	109,500	15,800	125,300	13%	1953-55 negative
1955	115,300	27,200	142,500	19%	negative
1956	92,100	20,500	112,600	18%	1955-57 negative
1957	109,800	32,700	142,500	23%	negative
1958	112,900	43,100	156,000	28%	negative
1959	99,400	25,500	124,900	20%	1956-59 negative
1960	110,000	41,100	151,100	27%	negative
1961	--	--	--	--	1958-60 negative

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina, op. cit., p. 92.

TABLE 6

PRODUCTION AND IMPORTATION OF DIESEL-OIL, 1945-61

(in tons of petroleum)

Year	Domestic Production	Importation	Total Supply	Import Coefficient	Substitution Coefficient
1945	216,097.2	18,876.8	234,974	8%	--
1946	288,213	56,291.5	344,504.5	16%	negative
1947	297,205.7	66,694	363,899.7	18%	negative
1948	395,242.4	76,892.8	472,135.2	16%	48%
1949	402,322.3	96,084.5	498,406.8	19%	negative
1950	523,545.7	52,168.2	575,713.9	9%	395%
1951	583,800	47,249	631,049	7%	342%
1952	578,257	102,694	680,951	15%	negative
1953	630,578	146,959	777,537	19%	negative
1954	631,958	129,731	761,689	17%	1952-54 negative; 1953-55 zero
1955	777,988	187,905	965,893	19%	negative
1956	975,420	206,457	1,181,877	17%	58%
1957	1,125,185	259,683	1,384,868	19%	negative
1958	1,267,159	389,882	1,657,041	24%	negative
1959	1,208,116	405,467	1,613,583	25%	1957-59 negative
1960	992,065	283,360	1,275,425	22%	1956-60 negative
1961	970,342	227,584	1,197,926	19%	1956-61 negative

Source: Importaciones, Industrializacion, Desarrollo, Economico en la Argentina, op. cit., p. 320.

TABLE 7

PRODUCTION AND IMPORTATION OF KEROSENE, 1945-61

(in tons of petroleum)

Year	Domestic Production	Importation	Total Supply	Import Coeffi- cient	Substitution Coefficient
1945	183,410	183.1	183,593.1	1%	--
1946	264,521.5	12,260.6	276,782.1	4%	negative
1947	283,358	0.9	283,358.9	0%	283%
1948	303,303.7	44,971.2	348,274.9	13%	negative
1949	290,218.4	35,953.8	326,172.2	11%	1947-49 negative: 1948-50 459%
1950	417,079	9,866.8	426,945.8	2%	347%
1951	527,279	10,248	537,527	2%	zero
1952	515,925	37,186	553,111	7%	negative
1953	634,913	--	634,913	0%	776%
1954	643,368	33,776	677,144	5%	negative
1955	673,295	179,433	852,728	21%	negative
1956	783,407	112,936	896,343	13%	783%
1957	885,847	115,057	1,000,904	11%	84%
1958	983,471	153,919	1,137,390	14%	negative
1959	1,029,260	263,661	1,292,921	20%	negative
1960	898,221	507,478	1,405,699	36%	negative
1961	918,919	557,780	1,476,699	38%	negative

Source: Importaciones, Industrializacíon, Desarrollo Económico en la Argentina, op. cit., p. 321.

TABLE 8

PRODUCTION AND IMPORTATION OF SULFUR, 1945-61

(in tons)

Year	Domestic Production	Importation	Total Supply	Import Coeffi- cient	Substitution Coefficient
1945	9,635	31,048	40,683	76%	
1946	12,414	24,174	36,588	66%	1945-47 negative
1947	11,990	48,241	60,231	80%	negative
1948	8,740	28,829	37,569	77%	1946-48 negative
1949	10,669	27,511	38,180	72%	412%
1950	8,284	23,056	31,340	74%	negative
1951	5,900	11,316	17,216	66%	1950-52 77%
1952	10,519	23,782	34,301	69%	negative
1953	31,100	31,983	63,083	51%	41%
1954	31,118	1,405	32,523	4%	1951-54 200%
1955	30,090	67	30,157	<1%	1954-56 negative
1956	27,982	21,658	49,640	44%	negative
1957	20,367	44,033	64,400	68%	negative
1958	36,378	39,257	75,635	52%	159%
1959	38,000	26,257	64,257	41%	1956-59 30%
1960	40,000	30,222	70,222	43%	negative
1961	40,000	20,617	60,617	34%	1956-61 125%
					1957-60 445%

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina, op. cit., p. 74.

TABLE 9

PRODUCTION AND IMPORTATION OF ACETIC ACID, 1951-61

(in tons)

Year	Domestic Production	Importation	Total Supply	Import Coefficient	Substitution Coefficient
1951	1,970	590	2,560	23%	
1952	1,750	190	1,940	10%	cannot compute
1953	2,200	210	2,410	9%	51%
1954	2,930	830	3,760	22%	negative
1955	3,270	370	3,640	10%	1953-55 negative; 1954-56 9188%
1956	3,570	220	3,790	6%	1008%
1957	3,370	1,710	5,080	34%	negative
1958	2,650	1,020	3,670	28%	1955-58 negative
1959	3,400	620	4,020	15%	533%
1960	3,600	1,120	4,720	24%	negative
1961	3,800	1,902	5,702	33%	negative

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina, op. cit., p. 145.

TABLE 10

PRODUCTION AND IMPORTATION OF BISMUTH, 1945-61

(in tons)

Year	Domestic Production	Importation	Total Supply	Import Coefficient	Substitution Coefficient
1945	64.0	2.1	66.1	3%	
1946	3.3	0.7	4.0	18%	negative
1947	12.7	0.5	13.2	4%	111%
1948	2.9	5.6	8.5	66%	negative
1949	1.6	23.1	24.7	94%	negative
1950	0.1	16.9	17.0	99%	negative
1951	0.3	9.0	9.3	97%	cannot compute
1952	--	20.2	20.2	100%	negative
1953	1.2	19.3	20.5	94%	410%
1954	40.2	26.9	67.1	40%	83%
1955	13.9	13.8	27.7	50%	negative
1956	15.0	1.6	16.6	10%	1951-56 204%
1957	90.4	1.0	91.4	1%	110%
1958	57.2	2.5	59.7	4%	negative
1959	60.0	1.6	61.6	3%	1956-59 96%
1960	40.0	1.6	41.6	4%	negative
1961	50.0	5.0	55.0	9%	negative

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina, op. cit., p. 70.

TABLE 11

PRODUCTION AND IMPORTATION OF HOPS, 1945-61

(in tons)

Year	Domestic Production	Importation	Total Supply	Import Coefficient	Substitution Coefficient
1945	No statistics	418	No statistics	--	
1946	45	597	642	93%	
1947	11	491	502	98%	1946-48 negative
1948	15	732	747	98%	zero
1949	40	441	481	92%	cannot compute
1950	43	132	175	75%	1949-51 4%
1951	59	589	648	91%	negative
1952	77	701	778	90%	7%
1953	80	281	361	78%	1950-53 negative
1954	79	671	750	89%	negative
1955	67	662	729	91%	1953-55 negative
1956	86	296	382	77%	1953-56 23%
1957	125	284	409	69%	157%
1958	141	322	463	70%	negative
1959	173	580	753	77%	negative
1960	150	129	279	46%	1950-60 104%
1961	--	146	--	--	

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina, op. cit., p. 97.

TABLE 12

PRODUCTION AND IMPORTATION OF EDIBLE OILS, 1945-61

(in tons)

Year	Domestic Production	Importation	Total Supply	Import Coeffi- cient	Substitution Coefficient
1945	239,904	29,638	269,542	11%	--
1946	221,391	18,571	239,962	8%	cannot compute
1947	228,451	9	228,460	0%	cannot compute
1948	259,161	63	259,224	0%	zero
1949	269,407	11	269,418	0%	zero
1950	305,777	5,978	311,755	2%	negative
1951	276,055	34	276,089	0%	1949-51 zero
1952	302,644	--	302,644	0%	zero
1953	166,292	--	166,292	0%	cannot compute
1954	133,734	11,893	145,627	8%	cannot compute
1955	144,983	35,454	180,437	20%	negative
1956	240,317	71,310	311,627	23%	negative
1957	256,752	--	256,752	0%	1956-58 203%
1958	327,752	--	327,752	0%	zero
1959	231,261	--	231,261	0%	zero
1960	295,293	--	295,293	0%	zero
1961	268,039	--	268,039	0%	zero

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina, op. cit., p. 86.

TABLE 13

PRODUCTION AND IMPORTATION OF GRAPHITE, 1945-61

(in tons)

Year	Domestic Production	Importation	Total Supply	Import Coeffi- cient	Substitution Coefficient
1945	333.0	342.7	675.7	51%	
1946	250.0	243.1	493.1	49%	cannot compute
1947	151.0	873.1	1,024.1	85%	negative
1948	159.0	394.8	553.8	71%	1946-48 negative
1949	177.0	453.4	630.4	72%	negative
1950	3.0	369.3	372.3	99%	negative
1951	215.0	1,237.1	1,452.1	85%	19%
1952	4.0	1,484.4	1,488.4	99%	negative
1953	32.0	302.5	334.5	90%	cannot compute
1954	93.0	708.3	801.3	88%	38%
1955	87.0	812.6	899.6	90%	negative
1956	519.0	408.3	927.3	44%	1704%
1957	409.0	626.2	1,035.2	60%	negative
1958	476.0	252.3	728.3	35%	1953-58 113%
1959	500.0	314.8	814.8	39%	negative
1960	520.0	72.6	592.6	12%	cannot compute
1961	550.0	125.8	675.8	19%	negative

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina, op. cit., p. 71.

TABLE 14

PRODUCTION AND IMPORTATION OF WOOD PASTE FOR THE
FABRICATION OF PAPER AND CELLULOSE, 1941-61

(in tons)

Year	Domestic Production	Importation	Total Supply	Import Coefficient	Substitution Coefficient
1941	32,546	40,022	72,568	55%	--
1946	34,798	49,892	84,690	59%	negative
1948	38,721	45,120	83,841	54%	1941-48 13%
1950	38,038	70,434	108,472	65%	negative
1954	52,693	167,177	219,870	76%	negative
1956	60,235	130,632	190,867	68%	1950-56 negative
1957	68,240	147,814	216,054	68%	zero
1958	78,688	126,757	205,445	62%	1956-58 124%
1959	86,199	112,685	198,884	57%	1956-59 401%
1960	72,909	86,222	159,131	54%	cannot compute
1961	89,214	141,170	230,384	61%	negative

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina, op.cit., p. 132.

TABLE 15

PRODUCTION AND IMPORTATION OF CIGARETTE PAPER, 1941-61

(in tons)

Year	Domestic Production	Importation	Total Supply	Import Coeffi-cient	Substitution Coefficient
1941	--	488	488	100%	
1946	126	770	896	86%	31%
1948	287	452	739	61%	1941-48 115%
1950	--	486	486	100%	cannot compute
1954	633	475	1,108	43%	101%
1956	1,056	31	1,087	3%	1950-56 175%; 1954-57 222%
1957	1,079	286	1,365	21%	negative
1958	1,236	8	1,244	< 1%	1956-58 436%
1959	1,382	--	1,382	0%	3633%
1960	1,245	23	1,268	2%	1958-60 negative
1961	1,190	23	1,213	2%	1956-61 321%

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina, op. cit., p. 132.

TABLE 16

PRODUCTION AND IMPORTATION OF CELLOPHANE, 1941-61

(in tons)

Year	Domestic Production	Importation	Total Supply	Import Coefficient	Substitution Coefficient	
1941	--	601	601	100%		
1946	--	867	867	100%	zero	
1948	--	2,422	2,422	100%	zero	
1950	--	22	22	100%	zero	
1954	1,422	13	1,435	< 1%	101%	
1956	--	10	10	100%	cannot compute	
1957	896	113	1,009	11%	90%	
1958	2,010	736	2,746	27%	negative	
1959	1,969	167	2,136	8%	1957-59	52%
1960	2,395	19	2,414	< 1%	189%	
1961	3,183	34	3,217	< 1%	1959-61	260%

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina, op. cit., p. 132.

TABLE 17

PRODUCTION AND IMPORTATION OF WORKPAPER AND
WRITING PAPER, 1941-61

(in tons)

Year	Domestic Production	Importation	Total Supply	Import Coefficient	Substitution Coefficient
1941	27,601	14,302	41,903	34%	
1946	31,908	34,860	66,768	52%	negative
1948	32,236	25,408	57,644	44%	1941-48 negative
1950	43,889	31,931	75,820	42%	19%: 1946-50 160%
1954	20,385	10,021	30,406	33%	cannot compute
1956	54,761	18,974	73,735	26%	36%
1957	57,936	18,057	75,993	24%	300%
1958	57,805	7,471	65,276	11%	1954-58 119%
1959	54,754	6,062	60,816	10%	1954-59 139%
1960	45,479	5,027	50,506	10%	1954-60 176%
1961	58,052	17,853	75,905	24%	negative: 1959-61 negative

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina, op. cit., p. 132.

TABLE 18

PRODUCTION AND IMPORTATION OF CAST IRON, 1945-61

(in tons)

Year	Domestic Production	Importation	Total Supply	Import Coeffi- cient	Substitution Coefficient
1945	3,213	25,190.1	28,403.1	89%	
1946	12,317	38,049.5	50,366.5	76%	35%
1947	15,735	68,860.5	84,595.5	81%	negative
1948	17,348	118,025.8	135,373.8	87%	negative
1949	18,559	85,184.0	103,743	82%	1947-49 negative
1950	17,834	96,709.1	114,543.1	84%	negative
1951	19,021	82,081.5	101,102.5	81%	1947-51 zero
1952	31,764	59,187.4	90,951.4	65%	1947-52 283%
1953	36,332	93,828.2	130,160.2	72%	negative
1954	39,596	32,690.7	72,286.7	45%	1946-54 134%
1955	35,000	191,232.1	226,232.1	85%	negative
1956	28,751	58,935.2	87,686.2	67%	1954-56 negative
1957	33,792	157,242	191,034	82%	negative
1958	29,163	113,012.4	142,175.4	79%	1956-58 negative
1959	32,023	147,362.0	179,385	82%	negative
1960	180,112	145,199.8	325,311.8	45%	188%
1961	398,511	66,531.9	465,042.9	14%	229%

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina, op. cit., pp. 186-90.

TABLE 19

PRODUCTION AND IMPORTATION OF STEEL INGOTS, 1945-61

(in tons)

Year	Domestic Production	Importation	Total Supply	Import Coefficient	Substitution Coefficient
1945	130,000	700	130,700	1%	
1946	133,043	17,428	150,471	12%	negative
1947	125,214	55,447	180,661	31%	negative
1948	122,321	46,396	168,717	27%	cannot compute
1949	124,743	63,578	188,321	34%	negative
1950	130,266	163,566	293,832	56%	negative
1951	131,592	180,531	312,123	58%	negative
1952	126,410	193,641	320,051	61%	negative
1953	174,376	79,868	254,244	31%	1949-53 34%
1954	186,115	460,351	646,466	71%	negative
1955	217,678	605,875	823,553	74%	negative
1956	202,481	445,278	647,759	69%	1954-56 1409%
1957	221,475	422,263	643,738	66%	cannot compute
1958	244,267	641,066	885,333	72%	negative
1959	214,237	568,056	782,293	73%	negative
1960	277,045	449,825	726,293	62%	1957-60 53%
1961	441,486	732,115	1,173,601	62%	zero

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina, op. cit., pp. 186-190.

TABLE 20

PRODUCTION AND IMPORTATION OF LAMINATED STEEL, 1945-61

(in tons)

Year	Domestic Production	Importation	Total Supply	Import Coeffi- cient	Substitution Coefficient
1945	124,005	75,849	199,854	38%	--
1946	126,250	329,879	456,129	72%	negative
1947	152,217	528,649	680,866	78%	negative
1948	162,646	581,589	744,135	78%	zero
1949	212,629	504,941	717,570	70%	1947-49 199%
1950	264,021	463,315	727,336	64%	623%
1951	296,527	673,063	969,590	69%	negative
1952	294,551	261,089	555,640	47%	1946-52 195%
1953	274,623	193,980	468,603	41%	1946-53 1615%
1954	526,013	567,399	1,093,412	52%	negative
1955	658,855	659,410	1,318,265	50%	22%
1956	613,031	506,347	1,119,378	45%	1954-56 579%
1957	683,260	474,414	1,157,674	41%	270%
1958	876,243	777,623	1,653,866	47%	negative
1959	776,009	547,791	1,323,800	41%	1957-59 zero; 1956- 59 58%
1960	771,569	620,825	1,392,394	45%	negative
1961	908,354	801,081	1,709,435	47%	negative

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina, op. cit., pp.186-90.

TABLE 21

PRODUCTION AND IMPORTATION OF CRUDE PETROLEUM, 1945-61

(in thousands of cubic meters)

Year	Domestic Production	Importation	Total Supply	Import Coeffi- cient	Substitution Coefficient	
1945	3,637.5	168.4	3,805.9	4%		
1946	3,307.2	1,071.6	4,378.8	24%	negative	
1947	3,473.2	1,373.5	4,846.7	28%	negative	
1948	3,692.5	2,049.0	5,741.5	36%	negative	
1949	3,591.4	1,870.9	5,462.3	34%	1948-50 negative	
1950	3,630.0	3,559.4	7,189.4	50%	negative	
1951	3,889.6	3,432.4	7,322.0	47%	377%	
1952	3,946.0	3,865.2	7,811.2	49%	negative	
1953	4,531.4	3,890.1	8,421.5	46%	84%	
1954	4,701.6	4,354.2	9,055.8	48%	negative	
1955	4,849.8	4,621.4	9,471.2	49%	negative	
1956	4,930.5	4,752.7	9,683.2	49%	zero	
1957	5,397.8	6,698.0	12,095.8	55%	negative	
1958	5,668.9	7,555.3	13,224.2	57%	negative	
1959	7,087.4	5,943.8	13,031.2	46%	1958-60	1189%
1960	10,152.9	3,684.6	13,837.5	27%	709%	
1961	13,403.0	2,082.0	15,485.0	13%	487%	

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina, op. cit., p. 314.

TABLE 22

PRODUCTION AND IMPORTATION OF FUEL OIL, 1945-61

(in tons of petroleum)

Year	Domestic Production	Importation	Total Supply	Import Coeffi- cient	Substitution Coefficient
1945	1,568,277.1	364,440	1,932,717.1	19%	
1946	1,488,484.8	2,185,968.9	3,674,453.7	59%	negative
1947	1,630,907.5	2,430,246.7	4,061,154.2	60%	negative
1948	1,970,722.6	2,624,454.7	4,595,177.3	57%	68%
1949	2,072,732.2	2,457,958.1	4,530,690.3	54%	1947-49 97%
1950	2,599,894.1	2,387,195.5	4,987,089.6	48%	122%: 1948-50 201%
1951	2,568,370.0	2,628,049	5,196,419	51%	negative
1952	2,777,811.0	2,774,442	5,552,253	50%	31%
1953	3,188,033.0	2,089,606	5,277,639	40%	1951-53 1406%
1954	3,616,617.0	2,119,907	5,736,524	37%	94%
1955	3,755,908.0	2,605,358	6,361,266	41%	negative
1956	3,594,638.0	3,342,777	6,937,415	48%	negative
1957	5,139,324.0	2,028,717	7,168,041	28%	1300%
1958	5,656,385.0	1,575,663	7,232,048	22%	2405%
1959	5,665,871.0	1,439,922	7,105,793	20%	1956-59 258%
1960	6,330,451.0	347,766	6,678,217	5%	1955-60 1852%
1961	6,876,584.0	3,027	6,879,611	1%	2750%

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina, op. cit., p. 318.

TABLE 23

PRODUCTION AND IMPORTATION OF GAS OIL, 1945-61

(in tons of petroleum)

Year	Domestic Production	Importation	Total Supply	Import Coefficient	Substitution Coefficient
1945	51,636.8	2,491.4	54,128.2	5%	--
1946	69,445.7	2,584.3	72,030	4%	80%
1947	71,823	6,307	78,130	8%	negative
1948	121,714	14,702	136,416	11%	negative
1949	173,630.9	25,233.7	198,864.6	13%	negative
1950	257,779	36,574	294,353	12%	24%
1951	270,663	42,393	313,056	14%	negative
1952	333,378	81,602	414,980	20%	negative
1953	413,407	80,714	494,121	16%	125%
1954	419,049	271,763	690,812	39%	negative
1955	419,045	408,051	827,096	49%	negative
1956	422,039	332,571	754,610	44%	1954-56 negative; 1955-57 zero
1957	460,413	438,694	899,107	49%	negative
1958	606,171	336,477	942,648	36%	575%
1959	461,469	386,394	847,863	46%	1958-60 negative
1960	666,034	519,914	1,185,948	44%	15%
1961	766,793	666,336	1,433,129	46%	negative

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina, op. cit., p. 319.

TABLE 24

PRODUCTION AND IMPORTATION OF AIRPLANE FUEL, 1945-61

(in tons of petroleum)

Year	Domestic Production	Importation	Total Supply	Import Coeffi- cient	Substitution Coefficient
1945	11,374	--	11,374	0%	
1946	12,717	17,687	30,404	58%	negative
1947	9,493	17,987	27,480	65%	1945-47 negative; 1946-48 negative
1948	9,966	39,963	49,929	80%	negative
1949	10,382	37,200	47,582	78%	1947-49 negative
1950	6,237	43,157	49,394	87%	negative
1951	8,776	37,336	46,112	81%	1947-51 negative
1952	9,590	42,364	51,954	82%	negative: 1950-52 117%
1953	9,069	47,008	56,077	84%	negative
1954	6,697	54,000	60,697	89%	negative
1955	7,834	50,383	58,217	87%	1953-55 negative
1956	34,786	47,955	82,741	58%	114%; negative 130%
1957	45,279	51,152	96,431	53%	61%
1958	43,641	55,475	99,116	56%	negative
1959	59,802	43,523	103,325	42%	655%
1960	55,955	48,554	104,509	46%	negative
1961	51,374	51,056	102,430	50%	1958-61 332%

Source: Importaciones, Industrializacion, Desarrollo Económico en la Argentina, op. cit., p. 324.

TABLE 25

PRODUCTION AND IMPORTATION OF OILS FOR LUBRICATION, 1945-61

(in tons of petroleum)

Year	Domestic Production	Importation	Total Supply	Import Coeffi-cient	Substitution Coefficient
1945	93,411	2,710	96,121	3%	--
1946	86,473	8,783	95,256	9%	negative
1947	98,710	14,964	113,674	13%	negative
1948	114,206	34,119	148,325	23%	negative
1949	109,429	27,611	137,040	20%	1947-49 negative
1950	94,333	50,592	144,925	35%	negative
1951	117,714	46,997	164,711	29%	143%
1952	119,833	77,522	197,355	39%	negative
1953	95,815	58,759	154,574	38%	1950-53 negative
1954	104,538	39,469	144,007	27%	1953-55 negative
1955	120,879	80,303	201,182	40%	negative
1956	148,424	58,355	206,779	28%	1107%
1957	153,836	45,522	199,358	23%	1956-58 negative
1958	169,679	71,297	240,976	30%	negative
1959	149,808	107,688	257,496	42%	negative
1960	161,557	62,544	224,101	28%	1957-60 negative
1961	156,866	63,898	220,764	29%	1957-61 negative

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina, op. cit., p. 325.

TABLE 26

PRODUCTION AND IMPORTATION OF AUTOMOBILES, 1945-61

(in units)

Year	Domestic Production	Importation	Total Supply	Import Coeffi- cient	Substitution Coefficient	
1945	--	95	95	100%	zero	
1946	--	6,699	6,699	100%	zero	
1947	--	30,738	30,738	100%	zero	
1948	--	7,456	7,456	100%	zero	
1949	--	3,137	3,137	100%	zero	
1950	--	1,925	1,925	100%	zero	
1951	--	15,147	15,147	100%	zero	
1952	--	2,339	2,339	100%	zero	
1953	5	1,898	1,903	99%	1945-53	11%
1954	127	3,154	3,281	96%	7%	
1955	211	4,927	5,138	96%	zero	
1956	300	8,932	9,232	97%	negative	
1957	465	10,778	11,243	96%	6%	
1958	3,715	14,989	18,704	80%	42%	
1959	6,746	6,090	12,836	47%	1958-60	198%
1960	30,335	3,251	33,586	10%	126%	
1961	71,989	2,877	74,866	4%	109%	

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina, op. cit., p. 220.

TABLE 27

PRODUCTION AND IMPORTATION OF TRUCKS, 1951-61

(in units)

Year	Domestic Production	Importation	Total Supply	Import Coeffi- cient	Substitution Coefficient
1951	108	no data	--	--	--
1952	969	no data	--	--	--
1953	3,069	no data	--	--	--
1954	3,232	no data	--	--	--
1955	6,180	1,615	7,795	21%	--
1956	5,643	7,906	13,549	58%	negative
1957	15,170	33,465	48,635	69%	negative
1958	24,119	3,455	27,574	13%	1956-58 153%
1959	26,206	83	26,289	<1%	cannot compute
1960	59,003	28,841	87,844	33%	negative
1961	64,195	1,543	65,738	2%	1958-61 146%

Source: Production data, Importaciones, Industrialización, Desarrollo Económico en la Argentina, op. cit., p. 220.

Import data, Comercio Exterior, 1955-61 (Buenos Aires, 1958-62).

TABLE 28

PRODUCTION AND IMPORTATION OF TRACTORS, 1945-61

(in units)

Year	Domestic Production	Importation	Total Supply	Import Coefficient	Substitution Coefficient
1945	--	--			
1946	--	800	800	100%	
1947	--	3,300	3,300	100%	zero
1948	--	10,200	10,200	100%	zero
1949	--	2,600	2,600	100%	zero
1950	--	3,800	3,800	100%	zero
1951	--	6,600	6,600	100%	zero
1952	--	7,300	7,300	100%	zero
1953	--	10,100	10,100	100%	zero
1954	--	3,900	3,900	100%	zero
1955	--	10,100	10,100	100%	zero
1956	10,001	10,600	20,601	51%	96%
1957	10,878	4,200	15,078	28%	1955-57 218%
1958	11,083	5,500	16,583	33%	negative
1959	12,566	300	12,866	2%	1955-59 470%
1960	20,958	400	21,358	2%	Zero: 1958-60 426%
1961	14,730	1,200	14,730	7%	negative

Source: Importaciones, Industrialización, Desarrollo Económico en la Argentina, op. cit., p. 225 and pp. 460-461.

TABLE 29

PRODUCTION AND IMPORTATION OF COMBUSTIBLE MINERAL SOLIDS, 1945-61

(in thousands of tons)

Year	Domestic Production	Importation	Total Supply	Import Coefficient	Substitution Coefficient
1945	--	798.9	798.9	100%	--
1946	--	1,151.9	1,151.9	100%	zero
1947	--	1,251.8	1,251.8	100%	zero
1948	--	2,254.7	2,254.7	100%	zero
1949	--	1,380.2	1,380.2	100%	zero
1950	30.5	1,467.3	1,497.8	98%	25%
1951	22.5	2,218.6	2,241.1	99%	negative
1952	46.1	1,783.8	1,829.9	97%	1950-52 6%
1953	45.2	1,228.2	1,273.4	96%	1947-53 231%
1954	78.6	1,551.9	1,63 .5	95%	5%
1955	68.3	1,274.5	1,342.8	95%	1953-55 20%
1956	93.3	1,505.8	1,599.1	94%	7%
1957	115.7	1,296.4	1,412.1	92%	1955-57 43%
1958	142.6	1,456.5	1,599.1	91%	9%
1959	156.3	1,390.3	1,546.6	90%	1957-59 22%
1960	119.5	1,472.2	1,591.7	92%	negative
1961	238.5	1,260.8	1,499.3	84%	1957-61 148%

Source: Importaciones, Industrializacion, Desarrollo Economico en la Argentina, op. cit., p. 46.