STABILIZATION POLICY AND PROTECTIVE DISCRIMINATION IN ARGENTINA, 1967-1971

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ABSTRACT

STABILIZATION POLICY AND PROTECTIVE DISCRIMINATION IN ARGENTINA, 1967-1971

by

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In early 1967, an economic reform was instituted in Argentina. The new measures had two basic goals: (1) growth with price stability and balance of balance of payments equilibrium in the short-run; and (2) a longer-term increase in economic efficiency through changes in the structure of protection. This dissertation investigates the 1967 program in the light of some special features of the Argentine economy. It examines the objectives, the measures employed and the results achieved.

The following special features were postulated as the underlying assumptions of the plan. A very high level of protection shields most manufactured products from import competition and the essential nature of the remaining imported goods causes import demand to be income elastic and price inelastic. At the same time, short-run capital flows are responsive to interest rate differentials and to the likelihood of a devaluation.

Inflation is due basically to a struggle over income shares carried on through wages, the exchange rate and the ability of the highly concentrated manufacturing sector to raise prices without fear of competition. Finally, increases in domestic manufacturing production are highly sensitive to the rate of growth of bank credit and the availability of imported inputs.

Using official Argentine data and ordinary least squares regression, tests confirmed the existence of these special characteristics. In particular, it was shown that a measure of price expectations that had previously appeared to be a highly significant determinant of price increases was barely significant when used in conjunction with more accurate wage and exchange rate variables.

The 1967 plan sought to succeed by taking into account these special features. Improvement in the balance of payments was sought through a compensated devaluation aimed at manufactured exports and short-term capital flows. The anti-inflationary policy was an attempt to regulate relative income shares. A cut in non-rural output would be avoided by maintaining the level of imports and real private credit. By means of a tariff reform and subsidies to manufactured exports, a move was to be made toward a more efficient allocation of domestic resources, greater import competition and the diversification of exports.

In assessing the impact of this program on the allocation of resources, nominal tariffs computed from implicit rates of protection were used to calculate effective rates of protection. To get at the degree of discrimination against imports, these rates were then converted to net rates of effective protection by taking account of the overvaluation of the exchange rate due to the existence of protective measures. The discrimination against export production and in favor of production for domestic use was measured by comparing value added in the two types of production.

The measures designed to change the structure of protection were only moderately successful. Within the non-food manufacturing sector, the policy induced reallocation of resources brought the continued expansion of import substitution in some intermediate industries. Up to 1968, the moderate increases in relative effective protection for food and agricultural products were policy induced but had little impact on output. Higher world prices and domestic shortages of beef in 1970 gave much higher rates of effective protection and, eventually, greater beef production. While moderate reductions in net effective protection had little impact on the ratio of imports to domestic consumption, between 1966 and 1968 reductions in the discrimination against production of manufactures for export were accompanied by large

percentage increases in exports of these products. However, further reductions in this bias between 1968 and 1970 were less successful and a regression analysis of the factors to which manufactured exports are responsive suggested that the increased exports were by and large due to the expansion of world trade in manufactures.

The short-run success of the stabilization measures in achieving their goals pointed to the importance of the special features. This quick success, however, turned out to have been won at the price of longer-term stability. With relative agricultural prices fixed at a low level, the expansion of real credit to this sector did not provide the desired expansion of output. Steadily declining relative meat prices eventually brought a highly inflationary shortage of beef. With a fixed exchange rate, limiting the growth of the money supply in order to curb exchange rate speculation hurt output. The higher cost of living generated inflationary expectations and made it impossible to move away from income controls.

Long-run efficiency, then, was subordinated to short-run growth. Despite a clear insight into the workings of short-run fluctuations, economic policy was conducted within an outmoded framework of an ostensibly balanced budget, negative real interest rates and a "permanent" exchange rate. Acceptance of these limitations left the authorities with many more policy goals than tools.

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A DISSERTATION

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To my parents--

who have given so much to their children

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CHAPTER 1

STAGNATION, INFLATION AND AN INWARD-LOOKING GROWTH STRATEGY

In June of 1966, amidst civil unrest and under conditions of economic recession, the elected government of Argentina was overturned by the military. While the men who took control had no economic program of their own, in early 1967, their new minister of economy, Dr. Krieger Vasena, announced a comprehensive stabilization plan designed to curb inflation and to improve the balance of payments situation. The principal measures involved were a 40 per cent devaluation of the peso, partially compensated by a reduction in import tariffs and an increase in export duties, and an incomes policy consisting of strictly controlled wages and a voluntary agreement on price increases. Having failed to achieve either economic stability or popular support, in May of 1973 the military oligarchy retired in favor of the popularly elected government of Juan Perón.[1] As the new government's economic policies

[1]With the inauguration of Hector Campora in May, 1973, Perón was effectively back in power. Subsequent to

begin to take shape, the moderate and conservative forces which did not rejoice at the return of Perón have been relieved to see strong similarities with the plan of 1967.[2] That plan had been a clear departure from previous stabilization efforts and now, in a revised form, it is going to be given another try. This dissertation will be a study of the 1967 stabilization program, examining its objectives, the measures employed, and the results achieved.

In this introductory chapter I will first of all describe the problems of stabilization policy in Argentina; next, I will indicate the way in which this plan was designed to cope with these problems; the last part of the chapter will describe how the dissertation is structured.

The Problems of Stabilization Policy in Argentina

Argentine experience with stabilization policy dates back to the early 1950's when sustained inflation and a tariff structure that discriminated against exports began

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Campora's resignation and a new election, Perón was himself sworn in as president in October of 1973.

[2]As the outline of the new policy was emerging in 1973, an Argentine financial periodical commented: "Studying the President's message, the reader would have been justified in rubbing his eyes and wondering if he was dreaming or if he had not read it all before. Dr. Krieger Vasena's plan was based on a price freeze combined with a system of export taxes . . ., realistic tariffs for public utilities, control of the budget deficit, an end to collective bargaining, a tax on agricultural land and a much stricter attitude to tax liabilities than previous governments had taken," Review of the River Plate (June 12, 1973), 830.

to cause serious balance of payments problems. Since 1950 the growth of the economy has been characterized by stop-go cycles punctuated by stabilization plans which have themselves caused output to decline and inflation to accelerate. This stop-go process has resulted in a low and highly varied growth rate. From 1946 to 1966 the average growth rate was 3.5 per cent with a standard deviation of 5.4. Figure 1-1 gives the growth rates for the years 1946-1966.[3] The vertical lines identify the years in which stabilization efforts were inaugurated. A cycle of two or three good years followed by a period of contraction is clearly in evidence. The conjunction of stabilization plans and economic contractions illustrate the way in which foreign exchange crises every three or four years have acted as a brake on Argentine growth. In his study of these cycles, C. F. Diaz Alejandro points out the relationship between the stop-go cycles and the fluctuations in the balance of payments asserting that, in general, the years of expansion have been characterized by declining foreign exchange reserves, while recessions have been associated with an increase in reserves. He notes other characteristics of these cycles that are relevant to the problem of stabilization policy:

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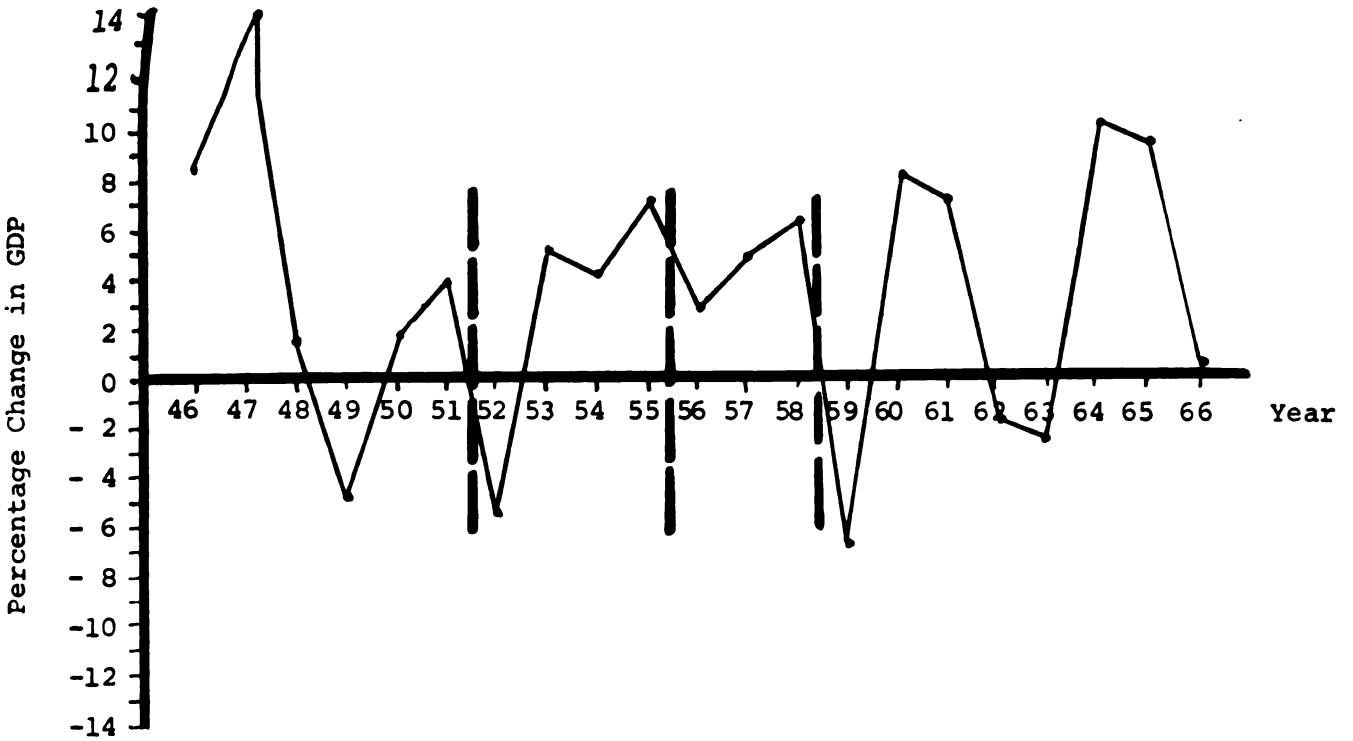
[3]Throughout this study extensive use is made of official Argentina data, the quality of which we are unable to assess. While we have proceeded on the assumption that all the data are accurate, this is most likely not the case. Few of our basic conclusions would be upset by a small margin of error.



Sources: See Table A1.

Figure 1-1.--Annual Growth Rate of Gross Domestic Product at Factor Cost, 1946-66*

*A dashed line indicates the beginning of a stabilization plan.

> On average, bad years have been characterized by falling real wage rates, severe exchange rate devaluations, relatively slower credit expansion, and a drop in real cash balances. They also witness price rises which were on the average higher than those taking place during good years.[4]

The problems of stabilization policy have been attributed to the characteristics of the demand for imports and supply of exports functions as well as the dynamics of the inflationary process in Argentina. The ratio of imports to gross domestic product has declined substantially as import substitution has proceeded, falling from 23.4 per cent in the years 1931-37 to 9.8 per cent in the period 1965-1967. Through a combination of import restrictions and domestic stimuli to the production of import competing goods, imports have been restructured so that they now consist almost exclusively of raw materials, intermediate goods and capital goods that are unavailable or not yet produced in sufficient quantities at home. The result of these policies has been that the goods that are still imported are crucial to the maintenance and expansion of domestic production, and increases in domestic economic activity tend to bring large upsurges in the level of imports.

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[4]Carlos F. Diaz Alejandro, "Stop-go Cycles and Inflation During the Post-war Period," in Essays on the Economic History of the Argentine Republic (New Haven: Yale University Press, 1970), pp. 353-54.

During most of the period since World War II, exports, consisting largely of domestic wage goods, have tended to stagnate with their short-term fluctuations determined much more by domestic supply factors such as weather than by responsiveness to changing prices. This combination of import and export behavior has made it very difficult for Argentina to earn sufficient foreign exchange. Efforts to stimulate economic growth have required large increases of imported capital goods and manufacturing inputs. The failure of exports to expand along with import needs has caused balance of payments crises and necessitated stabilization programs designed to improve the balance of payments in the short-run. Because the import and export demand functions have been highly price inelastic, payments improvements through the trade balance have come only with declines in domestic activity which curtail the need for imports and make more exports available through restricted domestic consumption.

While in most cases the characteristics of the trade functions are treated like given parameters, in the case of Argentina, they are the fruit of an inward-looking growth strategy. Balassa chooses Argentina as a relatively "pure" case of the inward-looking strategy, a strategy that encourages the flow of resources toward a wide range of domestic manufacturing industries at the

expense of the primary producing sectors.[5] Without regard for the country's true comparative advantage, this allocation is encouraged by means of fiscal stimuli and protection of domestic industry from foreign competition. The inward-looking strategy is designed to make the economy self-sufficient in industrial production as far as possible. By encouraging domestic production at the expense of imports and exports, Argentina was able to go through a period of rapid import substitution while the economy acquired a strong dependency on imported inputs for the new manufacturing industries.[6]

In addition to this dependency, another byproduct of the inward-looking strategy is a relatively inefficient domestic industrial structure characterized by three forms of discrimination among domestic economic activities: (1) the tariff structure discriminates among domestic industries by permitting to some industries a level of value added higher than that attainable in the absence of tariffs and constraining others to a lower one; (2) imports are discriminated against in the import competing industries and exports in traditional export industries by the fact that

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[5]Bela Balassa, "Growth Strategies in Semi-Industrial Countries," Quarterly Journal of Economics, LXXIV (February, 1970), 24-32.

[6]The "easy" import substitution, that for labor intensive consumer goods, was completed well before the 1967 stabilization effort. For the composition of imports, see Table 3.5.

the high level of tariffs permits an exchange rate much lower than the one that would bring balance of trade equilibrium under free trade; and finally, (3) there is discrimination against exports and in favor of domestic production due to the fact that tariffs permit much higher prices at home while exports must be sold at the given world market price. The inefficiency of this strategy is further compounded by the fact of the small size of the Argentine domestic market. In industries that lend themselves to large-scale economies, the attempt to achieve domestic self-sufficiency without encouraging exports will mean plants that are of less than optimal size or considerable excess capacity in optimally sized plants. Balassa points to Argentina's rising capital output ratio as an indicator that this stage of import substitution has been reached.[7]

Pursued over any length of time, an inward-looking growth strategy has significant implications for a country's trade structure and ability to improve the balance of trade through price adjustments. As imports are reduced to absolute essentials, the products to be substituted for first are the relatively price elastic consumer goods. The import goods remaining are goods essential to the level of economic activity and thus ones that are income rather than

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[7]Balassa, "Growth Strategies of Semi-Industrial Countries," p. 44.

price elastic. With respect to exports, policies that discriminate against traditional exports gradually dry up a fairly reliable source of foreign exchange earnings. At the same time, the very high level of discrimination against the export of the new manufactures prevents the emergence of a source of foreign exchange earnings whose quantity could be sensitive to price adjustments.

In addition to the above discrimination, another crucial problem to be faced by the stabilization plan was the inflationary spiral. From 1946 to 1966 inflation averaged 26 per cent a year. Up to 1961 the year-to-year fluctuations were significant, though in the years 1962 to 1966, the rate of inflation was close to the average. Domestically generated inflation well above that of the United States and Western Europe dates from 1949 when the Perón regime was incurring large budget deficits and decreeing substantial wage increases. With the incidence of balance of payments problems in the early 1950's, attempts were made to reverse the domestic ratio of agricultural price to industrial prices through large devaluations. But for these devaluations to be successful the urban wage earner would have had to suffer a loss of his recent real wage increases. Stabilization policy in Argentina is complicated by the fact that the principal urban wage goods, beef and grains, are also the principal exports. As devaluation caused the price of these exports

to rise and the discrimination against exports to decline, real wages also declined rapidly. The desire to raise the relative price of agricultural goods combined with the ability of urban wage earners to resist decreases in their real wages has resulted in a strong inflationary spiral. Whether these cost-push factors or the money supply increases generated by persistent large budget deficits have been the chief cause of Argentine post-war inflation is a subject of some controversy which we will take up further on. The role of devaluations and wage increases, however, is clearly seen in those recession years following stabilization plans in which with substantial unemployment, the impact of these factors caused the price level to rise even faster than in years of economic expansion.

In considering, then, the problems to which the stabilization plan of 1967 addressed itself, an inward-looking growth strategy encouraged the expansion of a broad range of domestic manufacturing industries at the expense of traditional exports. This policy resulted in an import demand function that was highly responsive to income expansion without being sensitive to price changes. This same strategy caused traditional exports to stagnate while discriminating against the export of the new manufactured goods. The price inelasticity of import demand and export supply meant that the balance of payments crises that resulted from economic expansion could not be resolved by

a change in relative prices without a decline in domestic production. The inward-looking growth strategy was initially accompanied by substantial wage increases to the urban worker whose ability to resist subsequent cuts in his real wage was the source of a strong wage-price spiral.

Stabilization policies prior to 1967 followed orthodox means of bringing about a reduced rate of inflation and an improvement in the balance of payments. Exchange devaluation was accompanied by a tight money policy and an attempt to reduce the budget deficit through spending cuts. This combination of policies resulted in an acceleration of inflation and in recession. Since the impact of devaluation was usually softened by a wage increase, the transmitting of these higher costs to prices was added to the inflationary impact of the devaluation itself. In addition to the effect of the restrictive monetary and fiscal policies on production, by raising the prices of food products the devaluation itself is recessionary since without producing an appreciable increase in production it transfers income from the urban worker with his high marginal propensity to spend to the rural landowner with a much lower marginal propensity. With a lag of about a year the decline in economic activity coupled with a slowing of the cost push elements reduced the rate of inflation, but when the economy once again received an expansionary stimulus, the marked increase in imports in the face of

stagnant exports once again precipitated balance of payments difficulties and new efforts at stabilization.

The stabilization plan of 1967 was designed to break this vicious circle. It involved a radical departure with respect to anti-inflationary measures, balance of payments policies and the structure of protection. The anti-inflationary policy was based on the conviction that the inflation was caused more by the cost-push elements in the wage price spiral and the expectations they generated than the influence of monetary and fiscal policy on aggregate demand. In line with this approach, the price policy was an incomes program which aimed at maintaining the ratio of overall wages and prices through control of wages and a voluntary agreement on prices. The balance of payments policy was meshed very closely with the price policy. With a view toward limiting the impact of devaluation on prices, the initial devaluation was compensated for with a reduction in import tariffs and increased taxes on traditional exports. The 40 per cent devaluation was deliberately excessive and was designed to improve the short-term balance of payments problem through the capital account rather than the trade balance. The exchange rate was fixed at a level where it would be able to remain for some time to come in the expectation that the combination of a firmly anchored exchange rate and relatively high domestic interest rates would attract a short-term capital

inflow. At the same time the reduced import tariff and the stimulus provided to non-traditional exports, which received the full impact of the devaluation, were designed to reverse the inward-looking growth strategy by subjecting domestic manufacturing to more competition in the domestic market and by making manufactured goods competitive in international markets. Finally, the export taxes on traditional exports not only served to reduce the impact of devaluation on the domestic price level, but also provided the means to bring about a significant narrowing of the budget deficit.

At this writing Argentina is again in the midst of severe inflation and balance of payments difficulties. Through 1969 the stabilization plan appeared to be a significant success in that it had been put into operation without a drop in production; inflation had been slowed to less than 10 per cent a year; exchange reserves were being maintained at a high level as the economy expanded to near full employment, and the pressure of greater imports on the balance of payments was in part being compensated for by a significant increase in non-traditional exports. In 1970, however, wholesale prices rose by 26 per cent, gradually gaining momentum as the year advanced. In 1971, wholesale prices rose by 48 per cent; the balance of trade was negative for the first time since 1962; 53 per cent of foreign exchange reserves were lost in short-term capital

outflow, and in October another round of the cycle came to an end as imports had to be totally suspended due to the exchange shortage.

The purpose of this dissertation, then, is a study of the set of policies initiated in March, 1967. The principal questions being asked are: (1) how well suited were these policies to achieving the goals of the plan, and (2) why did they succeed or fail to the extent that they did. The method employed is to postulate a model or set of economic hypotheses relevant to the inflation and balance of payments problems of the country and then to show how these characteristics affect the stabilization process (Chapter 2). Next these special features of the economy are elaborated on and empirically tested as necessary (Chapters 3 and 4; Chapter 4 deals only with the formulation and testing of an adequate price equation). The specific measures of the 1967 plan are then described and put in the context of the economic model (Chapter 5), followed by an assessment of the impact of the measures designed to reduce the various forms of protective discrimination (Chapter 6) and, relying heavily on the special features of the economic model, a discussion of the stabilization effort (Chapter 7). The basic hypothesis put forth here on the 1967 plan is that, with only minor modifications in the structure of protection and despite severe structural and institutional policy constraints, the

stabilization measures succeeded remarkably well in achieving the basic goals of price stability, growth and a balance of payments surplus as long as the inflationary pressure was from competition among the different income groups for a larger share of the national income. However, once the stimulus for higher prices came from another source, a shortage of meat supplies, the incomes policy and its commitment to maintaining relative prices and income shares quickly became the mechanism operating the re-activated inflationary spiral.

CHAPTER 2

THE ARGENTINE ECONOMY: A MODEL OF SHORT-RUN FLUCTUATIONS

Introduction

In this chapter, a descriptive model of the Argentine economy is presented in order to have a framework within which to appraise the suitability and performance of the 1967 stabilization policies. The first section contains the model and a discussion of how such an economy would be expected to react to policies of devaluation and restrictive monetary-fiscal policies. Chapters 3 and 4 offer empirical evidence on the extent to which the Argentine economy conforms to the assumptions of the model.

The Model

Mathematical models have been elaborated that attempt to explain the Argentine inflation and/or the balance of payments adjustment process.[1] Each of these

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[1]For models of the balance of payments process, see Carlos F. Diaz Alejandro, Exchange Rate Stabilization in a Semi-Industrial Economy (Cambridge: M.I.T. Press, 1965), Ch. 2, pp. 19-40; Miguel Sidrauski, "Devaluación, Inflación y Desempleo," Económica, XI, Nos. 1-2

models has been fashioned to study a limited set of policies, and thus operates within narrow assumptions. The stabilization plan of 1967, however, was global in its approach to stability, employing a wide range of interconnected policies. What follows here is a model which strives to be general enough to show the limitations of previous stabilization efforts and to make the 1967 plan intelligible in its broad scope and in the manner in which it attempted to avoid the recessionary impact of previous efforts while still achieving price stability and balance of payments equilibrium. This is not a model in the sense that it can be solved as a system of simultaneous equations but rather in that it is a set of special features of the economy which determine the impact of stabilization policies. In addition to giving the empirical basis for these relationships, Chapters 3 and 4 also identify their sources and indicate the qualifications they are subject to.

Unless otherwise indicated, the non-price variables are all in real terms. The model is as follows:

(1) The economy produces and/or consumes home goods, importables and exportables. Home goods do not

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(January-August, 1968), 79-107. For models of the inflationary process, see Javier Villanueva, "The Inflationary Process in Argentina, 1943-60," Torcuato Di Tella Institute, Buenos Aires, Center of Economic Studies, (2nd ed.; 1966); and Dean Dutton, "A Model of Self-Generating Inflation: The Argentine Case" (unpublished Ph.D. dissertation, Michigan State University, 1968). The model developed here draws on all these works.

enter into international trade either because the cost of transporting them is too high or the tariff structure isolates them from the international market.

(2) Home goods reflect the advanced stage of import substitution that the country has attained and consist largely of manufactured consumer goods that are heavily protected by tariffs from international competition. We assume that the demand for these finished manufactures is price and income elastic relative to food products (export type goods). The reasons for this assumption will be discussed below.

(3) The supply of home goods is most sensitive to the rate at which bank credit has expanded relative to increasing costs, particularly wages, and to the availability of imports. Production has fallen sharply when imports were restricted and/or firms could not obtain the necessary working capital. More specifically, the percentage increase in the output of the home goods sector is a function of: (a) the percentage change in bank credit to this sector minus the percentage change in money wages (wages taken as a proxy for costs); (b) the percentage change in imports of non-capital goods; and (c) the percentage change in agricultural gross output. Large changes in agricultural output will mean increased demand for manufactured home goods.

Due to the high degree of concentration in the home goods sector, prices are sticky in the downward direction.

(4) The country is small enough so that it can obtain all the imports it requires without influencing the prices of these goods.

(5) The demand for imports is dependent on their prices relative to the prices of home goods, real income, and the real inflow of long-term capital, which is import intensive. This demand is price inelastic and income elastic.

While the long-run domestic production of importables is constantly being expanded through an import substitution investment policy, in the short-run domestic supply is fixed. Either these goods are not produced at home at all or full capacity domestic production is insufficient and must be supplemented with imports.

(6) The domestic demand for exportables is price and income inelastic. Thus, in comparing home goods and exportable goods, it is argued on the basis of their composition, namely manufactured consumer goods versus food products, that the demand for home goods is relatively price and income elastic.

The domestic supply of exportables is a function of weather, the relative price of rural products, credit availability and the rate of technological change in the

agricultural sector. The sensitivity to relative price changes is very low in the short-run.

While importables and exportables are quite different bundles of goods, their responses to price changes are similar in that short-run demand and supply of both are price inelastic.

(7) In addition to variations in the balance of trade, the capacity to import is strongly influenced by short-run capital flows. These flows are determined not only by interest rate differentials between countries but also by the desire of Argentine businessmen to balance their need for liquidity against the losses monetary assets suffer through negative real rates of interest and frequent devaluations. Thus short-term capital will flow out of the country when the real rates of return on government securities and commercial bank savings deposits are negative and expectations are high for a devaluation in the near future. Should a devaluation succeed in creating confidence in the present exchange rate, the need for liquid balances will cause businessmen to repatriate short-term capital despite the negative real rate of interest. Since a negative real rate of interest implies a rate of inflation that will eventually threaten the exchange rate, we are speaking about confidence in the short-term exchange rate.

(8) The chief active determinants of price level increases are wage and exchange rate changes, while money supply increases tend to be a passive response to higher prices. Inflation is basically a struggle over income shares in which the different income sectors seek a larger share of the national income. The rural producer pressures for a devaluation, wage earners demand a higher real wage, and the industrial producer, shielded from imports by the tariff structure and operating under conditions of monopoly or oligopoly, can raise his price with little fear from competition.

(9) The wage rate is set exogenously by the government. In periods when the authorities have vigorously pursued a stabilization plan, they have assumed the role of wage setter. At other times, wages have been set through a collective bargaining process which has been strongly influenced by the government's willingness to give credit to businessmen to finance the negotiated wage increases.

(10) Finally, while government revenues and expenditures are set exogenously, because assessed taxes are paid with an extendible lag, in time of inflation government expenditures rise much more rapidly than tax collections.

To illustrate the implications of such a model for stabilization policy, we assume a situation in which a severe balance of payments deficit is accompanied by rapid

inflation. The government inaugurates a stabilization plan consisting of restrictive monetary and fiscal policies, an upward adjustment of wages followed by a wage freeze and finally a large devaluation to a new fixed exchange rate. The prior wage increase is designed to soften the impact of the higher food prices caused by the devaluation. The question we ask is, given the assumptions of our model, what will be the impact of these policies.

Initially, by way of contrast, we will show the implications of these policies for a larger class of countries which, like Argentina, have their terms of trade fixed and export primary products with price inelasticity of supply in the short-run. Then, in order to see the impact of these policies on the country described in our model, we will introduce the assumptions of low price elasticity of demand for imports (i.e., low domestic elasticity of supply of importables) and of strong cost-push inflation. Since it lends itself to variations in assumptions concerning the substitutibility of imports and home-produced goods, we will use as a tool in this analysis the geometric approach to internal and external balance developed by Corden and Hemming.[2]

Their basic diagram is presented in Figure 2-1. The slope of line TS represents the fixed price ratio

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[2]M. F. W. Hemming and W. M. Corden, "Import Restriction as an Instrument of Balance of Payments Policy," Economic Journal, LXVIII (September, 1958), 1-22.

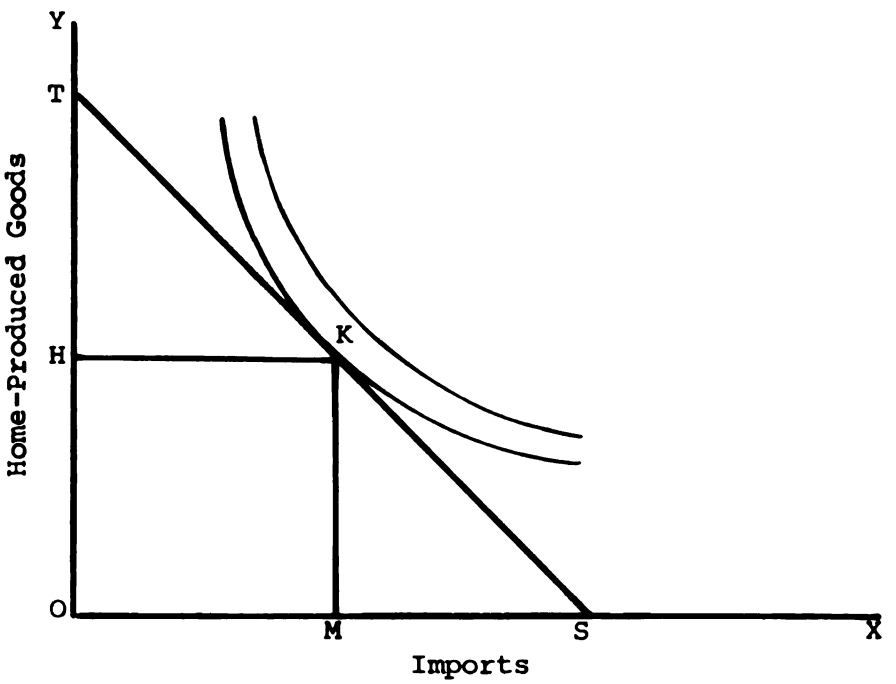

Figure 2-1.--Corden-Hemming (C-H) Diagram A

between imports and home-produced goods. This same line represents an income level that will purchase OS of imports or OT of home-produced goods. The community indifference curves in quadrant XOY represent the trade-offs between these goods. The terms of trade are fixed and so is the volume and foreign exchange value of exports. OM is the value of exports and therefore also the value of imports that will bring external equilibrium. If OH is the full employment level of home-produced goods, then point K represents the situation of external and internal balance. From any other point on the diagram, K can be attained by a combination of expenditures changes and relative-price adjustments.

In Figure 2-2, using the same diagram, we have imposed T. W. Swan's four "zones of economic unhappiness," which describe four combinations of internal and external imbalance:[3]

Zone I: excess demand and surplus in the balance of payments

Zone II: less than full employment and balance of payments surplus

Zone III: less than full employment and balance of payments deficit

Zone IV: excess demand and a deficit in the balance of payments

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[3]W. M. Corden, "The Geometric Representation of Policies to Attain Internal and External Balance," Review of Economic Studies, XXVII (October, 1960), 4.

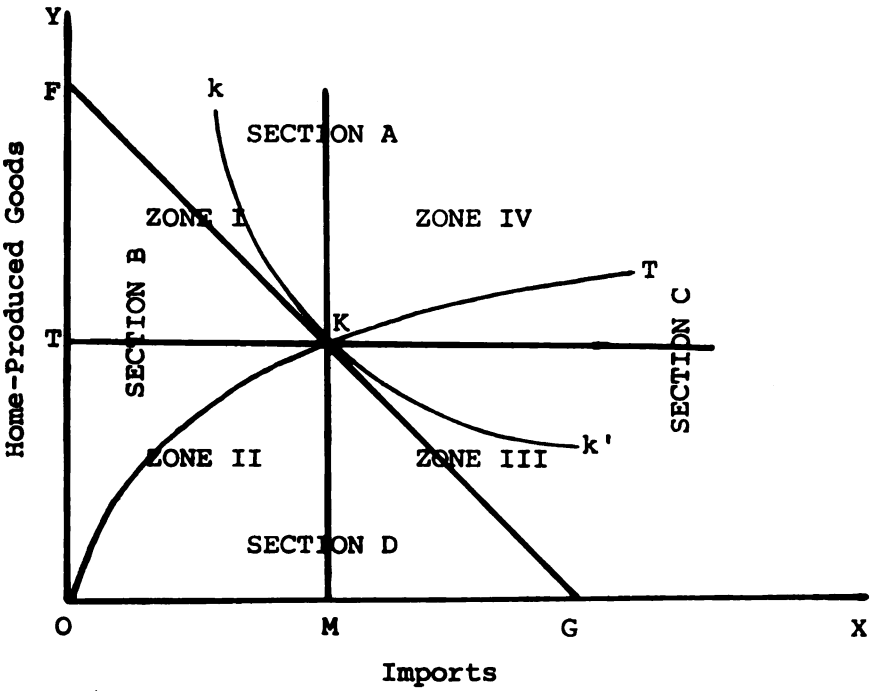

Figure 2-2.--C-H Diagram With Zones of Economic Unhappiness

Lines OT and kk' divide the quadrant into sectors in which distinctive policy formulas are called for. Since kk' represents constant amounts of real expenditure, at any point north-east of kk' real expenditures must be reduced and at any point southwest of kk' real expenditures should be increased. If relative prices stayed at the ratio represented by FG, OT would represent the various combinations of home and imported goods that would be purchased as expenditures were varied. For any given level of real expenditure at a point southeast of OT, the relative domestic price of imports is higher than that necessary to achieve internal and external balance and an increase in the relative price of imports is called for. At points north of OT, a decrease in the relative price of imports will bring external balance. Line OT itself is the income consumption line and its declining slope represents an income elasticity of demand for imports greater than one.

What the diagram serves to illustrate is that at any point not on OT or kk', achieving internal and external balance requires a combination of expenditure switching and expenditure increasing or decreasing policies.[4] The orthodox approach to stabilization has been to associate expenditure switching with the achievement of external

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[4]Harry Johnson, International Trade and Economic Growth (London: Allen and Unwin, 1958), pp. 161-64.

balance and changes in the level of expenditure with internal balance. The assumption involved in treating inflation with expenditure level changes is that it is caused by excess demand and not by structural or cost-push factors.

Above we described a situation of rapid inflation and a balance of payments deficit that was to be treated by devaluation and restrictive monetary and fiscal policies, a combination of expenditure reducing and expenditure switching policies. The presumption of such policies is that the economy is initially somewhere in the area where section C and zone four overlap. Starting with the general case in which home-produced goods can be substituted for imports, the immediate impact of devaluation would be to raise the domestic prices of imports and exports. Since the supply of exports if fixed, higher prices for exports will merely raise the income of export producers, contributing to the excess demand for home and imported goods. The increased price of imports brings an expansion of home production of those goods that can substitute for imports and a switch in consumption toward home goods and away from imports. The devaluation itself may or may not help in the attempt to reduce demand, since it will contain both positive and negative income effects. The increased domestic production of import substitutes and the expanded income of exporters will spur demand, while the higher

domestic prices for importables and exportables will have negative income effects, the strength of which will be reinforced or checked by the government wage and monetary-fiscal policies. Assuming that these policy instruments are used vigorously to limit demand, any positive income effects of the devaluation will easily be checked and inflation will be controlled. While some overshooting may occur carrying the economy into one of the other zones or policy sectors, it is easy to see how further marginal policy adjustments will bring the economy to internal and external balance at point K.

The second case to be considered is one in which vigorous import substitution policies have exhausted the easy substitution possibilities without eliminating a strong import dependency. Thus marginal adjustments of the exchange rate cannot in the short-run induce the substitution of home goods. In Figure 2-3 we introduce this assumption together with our assumption of high income elasticity of demand for imports, reflected in the increased flatness of the income-expenditure curve as full-employment is approached. The assumption of low price elasticity of demand for imports implies an almost fixed relationship between imports and home-produced goods and a heavy dependency of domestic industry on imported inputs and capital goods. Thus all policy moves can only bring shifts along the income consumption line and policy

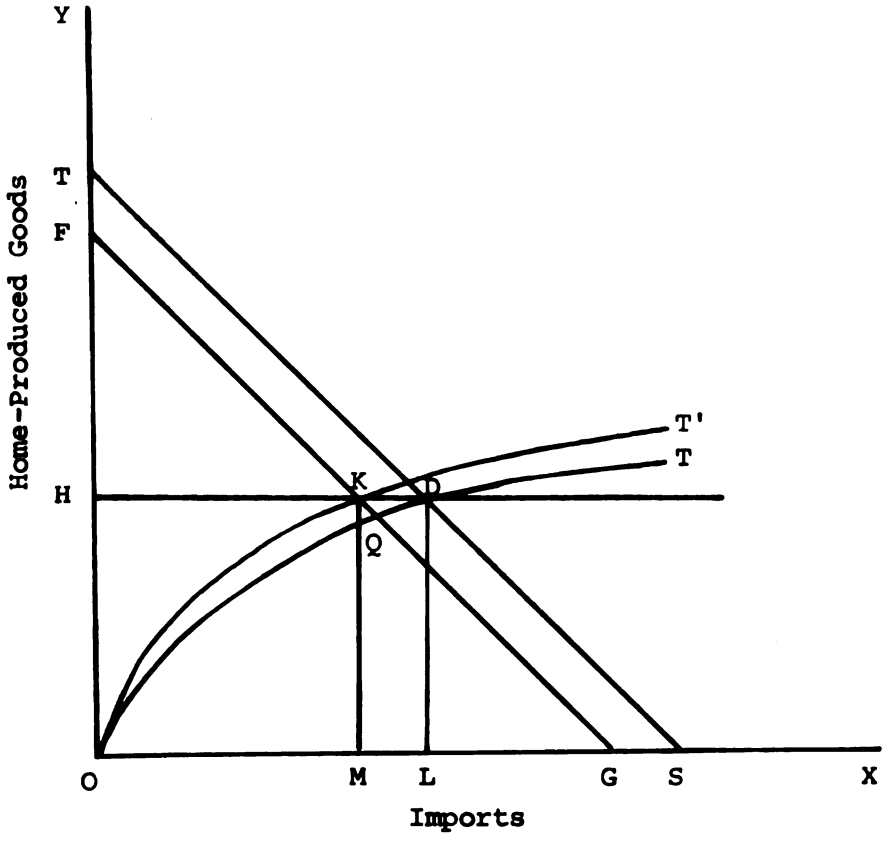

Figure 2-3.--C-H Diagram--Full Employment Not Attainable.

makers are left with one instrument with which to pursue two policy goals. The goal of internal and external balance would still be attainable if the fixed relationship between home-produced and imported goods was such that expenditure changes move you along OT' in Figure 2-3. What will more likely be the case is the situation described by the income-consumption line OT. If exports have been stagnant or declining in the face of discrimination against them, and the country has pursued a strategy that has not effectively reduced import dependency, then no matter what the exchange rate is, full employment may only be possible when the level of imports exceeds the foreign exchange value of exports.[5] In Figure 2-3, if expenditure changes are the only effective policy instrument, then Q represents the highest level of employment consistent with external balance. Full employment will only be attained at P with a balance of payments deficit of M-L.

The steep slope of OT represents that fact that as the economy achieves full employment, the demand for imported capital goods accelerates sharply. Conversely, beginning with a situation where expenditures are near the

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[5]Joy and Braun have incorporated this assumption into a model dealing with Argentina's failure to grow. See Oscar Braun and Leonard Joy, "A Model of Economic Stagnation--A Case Study of the Argentine Economy," Economic Journal, LXXVIII (December, 1968), 869.

full employment level, imports of capital goods can be reduced in the short-run without greatly affecting the level of employment.

Within the context of these assumptions about import demand as well as the assumption of cost-push inflation, we examine the impact of devaluation and expenditure reducing policies. Here also the presumption of policy makers is of strong excess demand inflation though in fact the economy may not be using its full industrial capacity. Again, the immediate impact will be an increase in domestic prices of importables and exportables, but this time with little or no increase in the output of either. While hopes may be strong that increasing the relative price of rural goods will eventually increase their output, the short-run impact will be to raise the domestic level of wholesale prices in proportion to the importance of traded goods in this price index.

The change in relative prices will have an impact on the distribution of income which in conjunction with restraints on the money supply could sharply reduce the production of home goods. The devaluation will mean higher incomes for the exporters of rural food products and, inasmuch as wages lag behind the increases in domestic food prices, a reduction in the real income of urban wage earners. Diaz Alejandro has postulated that the recipients of this income, rural land owners and export brokers,

have a much lower marginal propensity to spend than the urban workers who are giving it up.[6] On this basis, sizeable devaluations will tend to reduce the level of domestic demand particularly for home goods. If the urban worker has a much lower price and income elasticity of demand for food products than for home manufactures, then sharp increases in food prices will cause these products to absorb a much larger portion of the urban worker's budget, leaving much less income for expenditures on home goods. According to the assumptions of our model, however, this reduced demand will not result in lower prices of home goods.

Sidrauski has pointed out that the impact of devaluation on the domestic price level will also have a negative impact on the level of spending if the monetary authorities are pursuing a restrictive monetary policy.[7] In view of the higher prices of traded products and and other higher prices decreed in the stabilization plan, a neutral monetary policy will call for a considerable expansion of the nominal supply of money. Should the monetary authorities see these price increases as part of an inflation caused by excess demand and not validate them

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[6]Diaz Alejandro, Exchange Rate Devaluation, pp. 22-28.

[7]Sidrauski, "Devaluación, Inflación y Desempleo," p. 106.

through expansion of the nominal supply of money, then these price increases will have caused a sharp contraction of the real supply of money. Maynard and van Rijckeghem have argued that decreases in the level of credit available to the home goods sector in the face of rising domestic costs induced by devaluation have been a major source of the domestic contractions that have accompanied devaluations.[8] Thus devaluation itself, through its impact on the distribution of income and on the real supply of money, can cause a considerable reduction in the level of expenditures. If the devaluation is accompanied by other expenditure reducing policies such as higher taxes and cuts in government expenditures, it could easily happen that the total combination of policies would bring the country to a point well below the level of full employment.

The policy implications of our model are then that the stabilization policies at issue cannot achieve simultaneous internal and external balances. Devaluation and expenditure reducing policies will combine to move the economy down the income consumption line and balance of payments equilibrium will only be attained with unemployment. In addition, the stabilization process itself can

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[8]Geoffrey Maynard and Willy van Rijckeghem, "Stabilization Policy in an Inflationary Economy--Argentina," in Development Policy--Theory and Practice, ed. by Gustav F. Papanek (Cambridge: Harvard University Press, 1968), pp. 210-11.

initially involve significant inflation and prices will only be checked if the government can make the real wage freeze stick. When it is removed, if the economy is still in recession and the monetary authorities make it clear that they will not provide the credit to finance higher wages, the unions will have a difficult time at the bargaining table.

Finally, it remains for us to see the implications of the model when the economy is on the upswing. We assume that the policy makers, treating the inflation as caused by excessive monetary expansion and underestimating the income effects of the devaluation, have stabilized the economy at a point well short of full capacity. Having achieved relative price stability, a surplus in the balance of payments and a considerable reduction of the government deficit, they feel that the economy can tolerate some expansionary stimuli without creating inflationary pressures, and they embark on an enlarged program of government investment, financed by increased budget deficits and monetary expansion.

The higher government spending will quickly have an impact on the expansion of gross national product and the greater liquidity will enable producers of home goods to increase production and undertake a higher level of investment. Since prices were stabilized to the relative advantage of the rural sector, an economic expansion

concentrated in the home goods sector will offer an opportunity to the urban labor unions to recover and expand real wages, and to the industrialists to pass along these higher wages in the form of higher prices and to recover their previously higher share of the national income.

As the economy approaches full-employment, the demand for imports rises rapidly as new machinery and equipment are needed to replace and enlarge domestic productive capacity. The inflation which was begun by the efforts of labor and industry to enlarge their income shares induces further expansion of the money supply as government tax collections lag behind its expenditures and it borrows increasingly from the central bank. Unless the increase in relative prices achieved in the original stabilization plan has managed to induce a large expansion of rural exports, the new surge of imports will cause a sharp decline in foreign exchange reserves. Declining reserves and rising prices will begin to raise doubts about how long the exchange rate will be able to be maintained and short-term speculative capital will start to flow out, adding to the drain on reserves. Interim devaluations which are not accompanied by a strong effort to check prices will only add to the inflationary spiral by raising rural prices which, in an inflationary expansion, will be quickly translated into higher wages and higher prices for home-produced goods. Eventually the loss of reserves and

the increasing inflationary spiral will necessitate a sweeping new stabilization program and another turn of the stop-go cycle will have been completed.

An attempt has been made here to show that, given the characteristics of an economy like Argentina, straightforward attempts to improve the balance of payments through devaluation and cure inflation by means of restrictive monetary-fiscal policies cannot and indeed have not succeeded without causing a serious recession. As will be shown in Chapter 5, the 1967 plan, taking these characteristics into account, involved a policy mix designed to achieve the goals of stable prices and balance of payments equilibrium without a significant decline in production.

CHAPTER 3

EMPIRICAL DATA ON THE ARGENTINE ECONOMY

This chapter will assess how well the Argentine economy is described by the model just presented. After a description of the evolution of the balance of payments during the 1960's, the key assumptions of the model will be considered in turn.

The Balance of Payments Since 1960

A survey of the data up to 1958 shows the balance of payments characterized by large trade deficits with net services payments and private capital flows far less significant in size. The average yearly trade deficit in the period 1950-61 was 189 million dollars as imports usually far surpassed the stagnant level of exports. In Table 3-1, payments data are presented for the period 1956 to 1971.

These figures describe three important changes in the structure of payments over this period: (1) a large inflow of long-term private capital between 1959 and 1963 which greatly increased import substituting capacity but

TABLE 3-1.--Balance of Payments, 1956-1971 (in Millions of Dollars)

		1956-58	1959-61	1962-63	1964-66	1966-68	1969-70	1971
A.	Balance of Goods and Services	- 229	- 252	- 17	162	85	- 188	- 387
	Balance of Trade	- 253	- 217	122	365	284	58	- 129
	Merchandise Exports	971	1,017	1,291	1,497	1,417	1,693	1,740
	Merchandise Imports	-1,224	-1,234	-1,169	1,132	1,133	1,636	1,869
	Net Services	24	- 35	- 139	- 203	- 200	- 246	- 258
	Net Real Services	27	16	10	3	19	34	84
	Net Profits and Interest	- 20	- 66	- 70	- 114	- 131	- 191	- 256
	Net Other Services	17	15	- 79	- 92	- 88	- 89	- 85
B.	Net Unilateral Transfers	- 2	- 8	- 3	- 4	- 4	- 4	3
C.	Net Capital Monetary Gold	241	261	20	- 155	- 79	186	371
	Net Private Capital	82	229	- 57	- 131	181	161	- 331
	Long-Term	75	195	229	1	- 12	108	66
	Short-Term	7	34	- 286	- 132	193	53	- 397
	Official and Banking Capital	158	32	77	- 24	- 259	23	702
	Long-Term	- 49	68	- 48	- 25			
	Short-Term & Monetary Gold	207	- 36	125	1			
	Local Government					- 1	3	3
	National Government					38	90	125
	Monetary Authorities					- 304	- 74	595
	Banking Institutions					8	4	- 21
D.	Errors and Omissions	- 10	- 2	0	- 1	- 2	6	19

Source: Various issues of Bóletin Estadistíco, Banco Central de la República Argentina. From 1967 on the figures for "Official and Banking Capital" are computed on a somewhat different basis.

which also left a heavy burden of financial service payments; (2) a loosening of the export bottleneck; and (3) the introduction of private short-term capital flows as a significant source of payments fluctuations. Also, though not well brought out by the figures, the increased size of public and private foreign indebtedness greatly increased the need to earn foreign exchange.

Between 1959 and 1963, the inflow of long-term private capital averaged 212 million dollars as opposed to an average of 21 million for the previous six years. This sudden influx was due to a softening of government policy toward foreign capital which brought contracts for the development of the oil industry as well as legislation highly favorable to the development of other industries, particularly those producing intermediate type goods.[1]

After an initial burst of new investment, however, completion of the oil contracts, recession and political instability caused this flow to dry up after 1963. With considerable excess capacity, long-term private capital flows average an 11 million dollar outflow over the period 1964-1968 and then revived in the sustained expansion of

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[1]This change in attitude was a key policy of the Frondizi administration which took office in 1958. Foley has contended that this switch is a case in point of the Hirschman hypothesis that balance of payments pressures can induce import substitution and thus add to economic growth. See James W. Foley, "The Balance of Payments and Import Substituting Industrialization in Argentina, 1945-61" (unpublished Ph.D. dissertation, Michigan State University, 1969).

1969-71, averaging a 58 million dollar inflow. Though import substituting capacity expanded by a third between 1958 and 1963,[2] this private capital inflow left the country with a considerable burden of financial service payments. In the service account, the entry designated "income from international investments," which had averaged only a 6 million dollar outflow in the 1953-1958 period, was 72 million outflow for the years 1959 to 1963, gradually rising to 194 million by 1971.

Through the 1950's foreign exchange crises were clearly associated with the stagnant level of agricultural exports. Despite an improving domestic price ratio for rural products, the export high of 1125 million dollars in 1953 was not surpassed until 1962. Beginning with that year, the long-term higher prices and the investment undertaken to replace a huge flow of labor to the cities during the 1950's began to pay off and exports expanded sharply going from 964 million in 1961 to 1740 million in 1970. The five year averages in Table 3-2 give a more balanced picture of the change. While some of the increase in the late 1960's was due to an expansion of non-traditional exports, the major portion was due to increased agricultural production and the allocation of a high portion of that production to exports.

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[2]For a discussion of how import substituting capacity is measured, see page 59 of this chapter.

TABLE 3-2.--Yearly Dollar Averages for Exports (in Millions)

Year	Average
1952-1956	943
1957-1961	1004
1962-1966	1415
1967-1971	1592

Source: Based on data in various issues of International Financial Statistics, International Monetary Fund, Washington, D.C.

One aspect of the 1959 stabilization program involved the lifting of legal restrictions on capital flows, and in general the 1960's were a period of relatively freer capital movements. This freedom combined with frequent political instability and a sometimes overvalued exchange rate brought sudden and sharp inflows of short-term private capital.[3] Table 3-3 indicates the years in which these flows had a major impact on the

[3]There were no restrictions on capital flows from January, 1959, to April, 1964, and from March, 1967, to October, 1970. The Central Bank's estimates of short-term capital flows would be more accurate in times of controls when each expenditure must be approved. At all times these figures are only estimates since changes in short-term trade credits are gathered by survey. Mallon suggests that the degree of private short-term indebtedness is most likely exaggerated in the surveys, probably to make the government think twice before devaluing the peso. Richard D. Mallon, "Exchange Policy--Argentina," Development Policy--Theory and Practice, p. 181.

TABLE 3-3.--Capital Flows in the 1960's (in Millions of Dollars)

Year	Net-Short-term Capital Flow	Net Long-term Capital Flow
1962	-329	298
1963	-243	158
1965	-177	5
1966	-177	- 37
1967	254	- 22
1968	133	- 5
1969	214	93
1971	-403	79

Source: Various issues of Ministerio de Hacienda y Finanzas, Informe Económico, República Argentina.

balance of payments. The figures are in millions of dollars. In 1962 and 1963 long and short-term flows largely balanced each other out while in the remaining years, because of short-term capital flows, the private capital account had a significant impact on the balance of payments.

The greatest burden on the balance of payments was the cumulative impact of years of borrowing to cover trade deficits and finance infrastructure projects. Poor management caused the debt to be heavily concentrated in short- and medium-term obligations so that as of December, 1963, the total debt payments due in the next three years on all private and public debt amount to a fantastic

2,167 million dollars.[4] Though the debt was continually rescheduled to stretch out the payments, the sheer size of it meant a considerable sum of outpayments in any given year for the foreseeable future.

Summarizing balance of payments behavior since 1960, in 1960 and 1961 large capital inflows freed the economy from the foreign exchange constraint. Beginning with 1962 the export block was somewhat removed, though government debt payments and the service account prevented a corresponding increase in import capacity. In addition to year-by-year changes in imports and exports, from 1962 to 1971, payments fluctuations were strongly affected by short-term capital flows. The factors influencing the supply of rural exports and short-term capital flows will be discussed below in this chapter.

In fashioning a balance of payments policy, the debt payments and the payments arising in connection with the presence of foreign investment meant that a large surplus had to be generated in some other account(s). The fact that capital flows were freed of controls as part of an attempt to attract long-term funds meant that the economy was opened to the potentially destabilizing flows of short-term capital.

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[4]This figure includes interest and amortization payments. Mallon, "Exchange Policy--Argentina," p. 181.

The Assumptions of the Model

Home vs. Traded Goods

The first assumption of our model stated that there are a significant number of home goods which are neither imported nor exported.

While the distinction between home and traded goods is frequently based on the protection provided to bulky home goods by the high cost of transporting imports, in Argentina the distinction is more the result of an inward-looking development strategy. According to this strategy, wherever possible domestic production has been favored at the expense of imports and of production for export. In discussing the role of tariff protection in this strategy, H. P. Llosas comments: "Tariff protection over the period 1959-1966 stimulated the development of industries producing consumer and intermediate goods for the local private market, discriminating against the production of all other tradeables."[5] To the extent to which this strategy is successful, a substantial number of domestic industries will be home industries inasmuch as they will neither export nor face competition from imports. Balassa notes how these policies have in fact worked to isolate Argentina's

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[5]Herman P. Llosas, "Los Efectos Direccionales de la Protección Aduanera en la Argentina," Económica, XVII, No. 3 (September-December, 1971), 297-98.

manufacturing industries from the world market.[6] Contrasting the inward-looking growth strategy of a semi-industrial country like Argentina with the outward-looking strategy of some semi-industrial countries, Balassa describes how in inward-looking countries imports of non-durable consumer goods and exports of manufactures are insignificant. In contrast with semi-industrial countries pursuing an outward-looking strategy, in 1965 the share of imports in the domestic consumption of textiles, clothing and footwear were less than 2 per cent in Argentina while the import proportions of these goods were 62, 19, and 20 per cent in Denmark and 51, 23, and 29 per cent in Norway. At the same time, while the ratio of exports to value added in manufacturing rose from 14 per cent in 1950 to 33 per cent in 1965 in Denmark and from 26 to 44 per cent in Norway, Argentina actually experienced a decline in this ratio between 1952-59 and 1962-63.[7]

The assumption of a clear difference between home and traded goods implies that devaluation will only affect the final prices of home goods through its impact on their imported inputs. There will be few price increases due to higher prices of imported competition since protection keeps the price of potential competitive imports far above

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[6]Balassa, "Growth Strategies in Semi-Industrial Countries," p. 43.

[7]Ibid., p. 30.

the domestic prices of home goods. As an indicator of the extent to which a substantial portion of the Argentine economy was closed off to imports, the difference between actual and potential effective protection is cited in Table 3-4. Assuming that the domestic price is equal to the import price including the tariff, potential effective protection is the ratio of value added obtained by domestic industry under the tariff structure relative to what the value added would be in the absence of tariffs. Actual effective protection leaves aside the assumption that domestic prices are as high as tariffs will allow and, taking account of tariff redundancy, computes effective protection on the basis of observed prices. Potential effective protection well above actual rates would indicate tariff redundancy.

The figures in Table 3-4 strongly support the contention of an inward-looking strategy for Argentina. The traditional primary export industries are discriminated against and their value added is less than it would be under free trade. Manufacturing industries in general have very high effective protection. The fact that their potential effective protection is so much higher than their actual effective protection illustrates the divergence between actual prices and the prices protection would allow without the threat of increased competition from imports. Further evidence for the isolation of domestic

TABLE 3-4.--Actual and Potential Effective Protection, 1965

	Industry	Actual (%)	Potential (%)
1.	Agriculture	- 18.2	- 41.8
2.	Livestock	- 11.5	- 29.6
3.	Forestry, Hunting and Fishing	- 39.4	- 76.5
4.	Mining	- 64.7	- 4.0
5.	Fuel and Electricity	11.1	88.9
6.	Food and Beverages	29.0	588.9
7.	Meat and Meat Preparations	- 24.0	- 56.0
8.	Tobacco	186.7	269.1
9.	Textiles	*	*
10.	Clothing and Shoes	76.2	1,051.6
11.	Lumber	176.1	602.7
12.	Paper and Paperboard	298.8	1,370.7
13.	Printing and Publishing	- 11.0	- 69.9
14.	Chemicals	198.2	763.2
15.	Rubber	- 9.1	351.6
16.	Hides and Skins, Leather	18.0	711.7
17.	Stone, Glass, Ceramics	- 9.3	308.6
18.	Metals	272.6	726.9
19.	Steel	*	*
20.	Vehicles and Mech. Machinery	242.0	720.0
21.	Cars and Tractors	*	*
22.	Electrical Machinery & Appliances	*	*
23.	Other Industries	179.6	741.1

Source: Pedro Wainer, "La Protección Aduanera Efectiva en la República Argentina," (unpublished manuscript of a study done for CONADE).

*Indicates negative domestic value added at world prices.

manufacturing from the world market will be gained from the estimation of the import demand function, described on pages 58-67 of this chapter.

The Supply of Home Goods

Having asserted the reasons for believing that most of domestic manufacturing can be seen as a home goods industry, we treat the characteristics of this industry. In this section we concentrate on those factors which affect the output of home goods. Our assumptions about the characteristics of the demand for these products relative to the domestic demand for agricultural products will be treated together with the demand for rural products.

Over the period 1950 to 1971, growth of the non-agricultural sector averaged 3.7 per cent per year with a standard deviation of 5 per cent. It was indicated above that the sharp fluctuations in gross domestic product have tended to be closely associated with the initiation of stabilization plans and this is all the more true of the non-agricultural sector. Since consumer credit has not been widely used over the period in question, the monetary restriction associated with stabilization programs seems to have had its impact more on suppliers than on consumers. Where producers were faced with sharply rising costs and a shortage of liquidity at the same time, they were frequently forced to cut back production due to a lack of

working capital. Stabilization programs were also associated with attempts to restrict imports vital to the continuation of the current level of production. These factors suggest that the availability of credit and of imports of semi-processed inputs and raw materials were crucial in the fluctuations of non-agricultural output.

To test this part of the model, we attempt to explain the percentage change in the real output of the non-agricultural sector, O_{NA}, by means of the percentage change in dollar non-capital goods imports, M_{NC}, and the percentage change in nominal bank credit to the non-agricultural sector, B_{NA}, minus the percentage increase in wages in this sector, W_{NA}.[8] Wages are taken as a proxy variable for cost increases in the non-agricultural sector. In order to introduce a lag of a third of a period, the import variable consists of two-thirds of the percentage change in non-capitals goods imports of the current period and one-third of the percentage change in the previous period. Yearly data for the period 1951-71 were used.[9]

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[8]This output function was first used by Geoffrey Maynard and Willy van Rijckeghern to study the period 1950 to 1964. See their "Stabilization Policy in an Inflationary Economy--Argentina," pp. 207-35.

[9]In this and other estimation done on the basis of Argentine data there will be a margin of error due to the quality of the data. While it is difficult to assess quality on the basis of how closely the methodology is followed, an effort will be made to point out qualifications on the data arising from the methodology itself. A basic description of Argentine economic data can be found

$(B_{NA} - W_{NA})$ and M_{NC} taken individually explain a substantial portion of the variation in output changes of the non-agricultural sector:[10]

$$O_{NA} = 3.53 + \underset{(.046)}{.171}\ (B_{NA} - W_{NA}) \qquad \bar{R}^2 = .39,\ DW = 1.54,\ df = 19$$

$$O_{NA} = 2.64 + \underset{(.052)}{.252}\ M_{NA} \qquad \bar{R}^2 = .53,\ DW = 2.40,\ df = 19$$

Taken together they explain 73 per cent of the variation and are both significant at the 1 per cent level:

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in Carmen Llorens de Azar and Frieda F. Johansen, "Principales Estadísticas Argentinas: Metodologias y Fuentes," Revista de Administración y Economía (IDEA), I, No. 4 (1970), 45-88. In the regressions for non-rural output the chief qualifications are: (1) the official statistics on the basic salary cover only workers in manufacturing; and (2) there is no consistent series for non-capital goods imports covering this whole period and thus the goods on which the percentage increases from 1951 to 1964 are based are not quite the same bundle on which the 1964 to 1971 changes are based.

[10] In presenting regression results, we will give the regression coefficient with the standard error in parentheses beneath it. We will also give the coefficient of determination corrected for the degrees of freedom ($\bar{R}^2$), the Durban-Watson statistic (DW), and the degrees of freedom (df).

$$O_{NA} = 2.74 + \underset{(.034)}{.118}\ (B_{NA} - W_{NA}) + \underset{(.044)}{.200}\ (M_{NC})$$

$$\bar{R}^2 = .70 \qquad DW = 1.75 \qquad df = 18$$

An even better fit was obtained by the addition of percentage increases in agricultural output, O_A, as a further explanatory variable:

$$O_{NA} = 2.42 + \underset{(.032)}{.104}\ (B_{NA} - W_{NA}) + \underset{(.041)}{.212}\ (M_{NC}) + \underset{(.070)}{.146}\ (O_A)$$

$$\bar{R}^2 = .75 \qquad DW = 1.64 \qquad df = 17$$

The rationale for the addition of this variable is that fluctuations in the output of the agricultural sector will affect the ability of that sector to purchase goods from other domestic industries.

The implications of this function are that if a stabilization effort is to avoid a downturn in production, the capacity to import must be maintained and credit cannot be tightened so sharply that it lags behind the rate of increase of short-run costs. The stabilization efforts of 1959 and 1962 both brought about big reductions in non-rural output through import restrictions and a sharp cut in credit to this sector. With declines in output of 6 and 4 per cent respectively in the two years, imports of non-capital goods fell by 3 per cent in the two years and the difference between the percentage increases in bank credit and wages was a minus 52 per cent in 1959 and a

minus 13 per cent in 1962. A reversal of these policies brought a quick recovery in 1960 but their continuance into 1963 brought a further output reduction of 6 per cent in 1963.

Tradeable Goods

While tariffs and transportation costs have weakened the link between home goods and the world market, the link between traded goods and the international market is a strong one. If we assume that the terms of trade are given and the domestic supply of tradeables is fixed in the short-run, the immediate impact of a devaluation on the domestic price level will be in direct proportion to the participation of tradeable goods in the domestic market basket.

Exportable goods can virtually be identified with the rural sector, since all but a small number of these products are exported. Over the period 1965 to 1970, value added in all rural activities amounted to 14 per cent of gross domestic product. More importantly, exportable products make up a considerably larger percentage of the budget of the typical urban family, so that the impact of a devaluation can raise the cost of living much more than it will the general price level. The 1960 survey of a working class budget on which the cost of living index is based consisted of more than 30 per cent food products whose price is closely linked to the

exchange rate. Mallon points out that if we also include those items in the budget which have a high component of imported or exported materials, the combined weight will rise to over 50 per cent.[11]

Imports of goods and services, on the other hand, over the period 1965 to 1970 have averaged 9.5 per cent of gross domestic products. Over this same period, the domestic mining and manufacturing industries have averaged 38 per cent of gross domestic product and while for most of these products the direct links between the prices of domestic and import products have been broken we assume that a direct link remains for another 5 per cent of gross domestic product made up of mining and manufactured goods. An indirect link exists, of course, and the prices of manufactured goods will rise when the prices of imported inputs rise.

Adding the above figures, 14 per cent for rural production, 9.5 per cent for imports, and 5 per cent for mining and manufacturing, exportables plus importables make up about 29 per cent of gross domestic product. The degree to which a devaluation will affect the general price level will depend on whether the price index used is based on goods consumed and invested domestically or goods produced domestically. If the concept employed deals with products consumed and invested within the

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[11]Mallon, "Exchange Policy--Argentina," p. 185.

country, then the 9-10 per cent of gross domestic product that is actually exported is excluded. If the index contains only products actually produced in the country, then imports, also 9-10 per cent of gross domestic product, are excluded. In either case, a 100 per cent devaluation would have the immediate impact of raising overall prices by 19-20 per cent. Some additional increases result where prices are raised to cover the higher cost of imported inputs. The even greater impact of devaluation on the cost of living has created counter pressures for wage increases that have had a further impact on the price level.

Importables

The crucial assumptions concerning importables and those we will concentrate on here are those dealing with the demand for imports. For a country the size of Argentina, the small country assumption of an infinitely elastic supply of imports does not have to be substantiated and our argument for a fixed domestic supply of importables is based on the characteristics of the import demand function itself. We have assumed that the demand for imports is price inelastic but strongly income elastic and our principle evidence will be various estimates of the import demand function. Initially, data on the structure of merchandise imports is presented along with some a priori arguments in support of this contention.

Table 3-5 gives a breakdown of Argentine imports according to use over the period 1948-1968. While there were some marginal changes over the period, the breakdown of imports has been roughly 10 per cent consumer goods. The process of import substitution can be observed in these figures as we note the declining participation of consumer durable goods and of fuels. Further import substitution in the area of consumer non-durables offers no real prospects since the major portion of this small sum is made up of tropical products such as coffee and cocoa, which Argentina cannot produce economically in large quantities.

While the shares of consumer goods and intermediate products and raw materials have declined, that of capital goods has expanded, particularly in the area of heavy industrial equipment which becomes more necessary as the economy grows and which is the type of import most difficult to substitute for.

Argentine imports, then, are almost entirely products that cannot easily be substituted for in the short-run. Over this century the average propensity to import has fallen from about 0.3 to 0.1, but the declining participation of imports has involved an increasing dependency on the remaining imports. By the early 1950's, the process of import substitution had largely been completed for consumer non-durables and intermediate

TABLE 3-5.--Structure of Merchandise Imports According to Use

	1948-52	1959-61	1966-68
Consumer Goods	12.6	8.9	5.9
Non-durable	7.6	3.6	4.8
Durable	5.0	5.3	1.2
Intermediate Products and Raw Materials	58.0	53.8	52.8
Fuels	14.6	14.4	8.4
Other	43.4	39.4	44.3
Capital Goods	28.8	36.4	40.8
Construction Materials	6.5	4.7	5.1
Agric. Machinery and Equip.	2.5	3.1	.4
Transport and Communications	7.0	10.7	14.3
Other Machinery and Equipment	12.8	17.9	21.0

Source: Various issues of Statistical Bulletin for Latin America, United Nations, Economic Commission for Latin America, Santiago, Chile.

products that could easily be produced at home. The criterion was not relative efficiency of trade or home production, but simple feasibility.[12] The process of import substitution was carried on in a way which tended to reduce the sensitivity of imports to price changes. Initially, all those products which could easily be produced at home were given high enough tariff protection to prevent foreign competition. These tended to be consumer non-durables whose demand is highly sensitive to price. As more and more technically complex products were substituted for, their tariffs were raised both to nurture the new domestic industries and to improve the balance of payments by use of domestic capacity for imports. Thus at any given point in time, products produced at home in sufficient quantity have enjoyed high enough protection so that relative price fluctuations do not bring the threat of foreign competition. Products not produced at home have relatively low tariffs on them and they are products that would require much time and investment to bring into production. Changes in relative prices will not greatly effect the imports of these goods since they are by and large intermediate inputs, fuels and capital goods essential to the operation of existing productive capacity. If

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[12]Raúl Prebisch, Towards a Dynamic Development Policy for Latin America (New York: United Nations, 1964), p. 71.

there were domestic substitutes for these goods readily available, tariff protection would have already stopped their import. Where prices could make a difference to quantity imported would be in regard to those products produced at home but in quantities insufficient for the domestic market. But even here, tariff policy has been geared to regulating imports to the quantity needed to supplement domestic production, and not to providing the stimulus of competition for domestic producers.

As a further support to the a priori argument that imports will not be price sensitive, Diaz Alejandro cites the fact that while technologically crucial in the production process, imported inputs generally make up a small part of the price of the product, implying a much lower price elasticity for the imported input than for the final product.[13]

Import Demand Function.--Existing estimates of import demand done by Diaz Alejandro support the contention of high income and low price elasticity of demand.[14] Treating the period 1947 to 1965, he regressed imports of goods and services in constant 1960 pesos against the following dependent variables:

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[13]Diaz Alejandro, Exchange Rate Devaluation, p. 50.

[14]Diaz Alejandro, "Stop-Go Cycles and Inflation," pp. 354-62.

(1) total absorption in constant 1960 pesos;

(2) the ratio of the wholesale price index of imported goods to that of non-rural domestic goods;

(3) a proxy variable for quantitative restrictions which for the year t is Central Bank net gold and foreign exchange reserves at the end of year t-1 as a percentage of average dollar merchandise imports in years t-1, t-2, and t-3. The assumption was that declining reserves would bring increased import restrictions in the coming year;

(4) a proxy for import substituting capacity which was computed by summing for nine basic import substituting industries "the maximum value added (at 1960 pesos) produced in that sector up until and including that year."[15] The expected coefficient for this variable is minus one since a dollar of expanded domestic capacity should replace that amount of imports.

After initial tests showed considerable evidence of serial correlation in the error term, the data were transformed into first differences. His equation, shown in column (1) of Table 3-6, yields a very high income elasticity and no evidence at all of responsiveness of

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[15] Ibid., p. 357.

TABLE 3-6.--Regression Analysis on the Import Demand Function

Dependent Variables / Independent Variables	(1) Imports of Goods and Services	(2) Same as (1)	(3) Same as (1)	(4) Same as (1)	(5) Imports of Goods
Constant	-5.60	18.13	33.20	-5.60	4.22
Total Absorption	0.29	0.08	0.11	0.19	0.18
	(0.07)	(0.01)	(0.01)	(0.05)	(0.05)
Relative Prices	0.21	0.36	-0.53	-0.55	-0.47
	(0.22)	(0.32)	(0.24)	(0.23)	(0.24)
Import Substituting Capacity	-0.16			-0.24	-0.41
	(0.59)			(0.15)	(0.16)
Long-term Capital Inflow/Gross Domestic Invest.			2.88	3.13	3.02
			(0.62)	(0.61)	(0.64)
Quantitative Restrictions	0.03				
	(0.04)				
R^2	.76	.76	.91	.93	.75
$\bar{R}^2$		.72	.89	.90	.66
D.W.	2.15	1.06	2.64	2.95	1.99
Degrees of Freedom		14	13	12	12

Sources: See page 256 of the Statistical Appendix.

imports to price changes. The coefficient for total absorption of 2.9 is highly significant and yields an income elasticity of 2.6. While the ratio of imported to domestic prices would normally yield a negative coefficient, Alejandro's equation has a positive coefficient which is insignificant. The coefficients for quantitative restrictions and import substituting capacity suggest that these factors have had little impact on fluctuations in the level of imports.

Other than the implausibility of the contention that income variations alone exercise a strong influence on imports, Diaz Alejandro's equation is subject to the following limitations: (1) the existence of serial correlation in the error term suggests the possibility that the equation is not correctly specified;[16] (2) no account is taken of the fact that the tremendous inflow of capital in the years 1959-63 was largely a response to factors other than domestic expansion; (3) included in the dependent variable are service payments which were also strongly influenced by this inflow of long-term capital; and (4) the official price index for imported goods does not include machinery and therefore does not take into account fluctuations in the price of most imported capital goods.

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[16]Transforming the data into first differences, as Alejandro did, biases the estimates unless the first order serial correlation coefficient is equal to one. See Jan Kmenta, Elements of Econometrics (New York: Macmillan, 1971), p. 292.

Experiments with a price index for imported goods computed from the ratio of total imports in current pesos to total imports in constant pesos brought no improvement, but attempts to take account of (2) and (3) proved more fruitful. The new attitude toward foreign capital in 1958 meant that as part of the overall development plan state enterprises ordered considerable sums of capital goods imports far in advanced and to be paid for under long-term finance plans.[17] Table 3-7 gives the constant peso figures for gross investment, gross investment in machinery and equipment, capital goods imports and net inflows of long-term private capital. These figures clearly show a huge inflow of capital goods imports for the period 1960 to 1963 that was in large part independent of the level of economic activity. Though 1962 was a recession year, capital goods imports rose that year to their highest level ever while domestic investment was declining. In subsequent years in which gross investment was far higher than the period 1962-63, capital goods imports did not attain the level of those two years. The same stretch of years also brought a great inflow of private long-term capital which also surpassed all levels before and since. This capital inflow was highly import intensive, bringing

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[17]This point is brought out in Percy de Forest Warner III, "The Impact of the Service on the Foreign Debt on the Monetary Structure in Argentina: 1955-1965" (unpublished Ph.D. dissertation, Michigan State University, 1970), p. 74.

TABLE 3-7.--Investment, Capital Goods Imports and Private Capital Inflow (all Figures in Millions of Constant 1960 Pesos)

Year	Gross Investment	Gross Investment in Machinery and Equipment	Imports of Capital Goods*	Net Inflow of Private Long-term Capital*
1955	143.4	62.9	16.9	3.4
1956	135.0	70.5	18.9	8.9
1957	152.0	77.0	19.8	5.0
1958	166.6	78.9	18.5	6.4
1959	147.8	65.3	16.9	5.8
1960	217.6	120.6	38.6	23.0
1961	238.6	151.1	45.8	14.2
1962	219.4	138.5	53.4	23.8
1963	179.9	110.2	38.4	12.6
1964	226.7	125.0	22.8	.2
1965	243.2	131.4	15.0	.4
1966	225.7	133.6	20.4	- 2.9
1967	235.9	137.0	22.4	- 1.7
1968	264.9	150.1	26.4	- .4
1969	305.8	179.8	31.4	5.8
1970	320.7	182.1	32.0	7.4
1971	352.0	210.7	41.3	6.3

Sources: Columns (1) and (2): BCRA, Bóletin Estadístico (March, 1971), 78, and Informe Económico, No. 4 (1971), Statistical Appendix, p. 4; Column (3): BCRA, Comercio Exterior, Supplement to Bóletin Estadístico (May, 1969), 214-15, and Informe Económico, No. 4 (1971), Statistical Appendix, p. 26; Column (4): 1960-71 from various issues of Informe Económico; 1959 from BCRA, Memoria Anual - 1959, p. 28; 1955-58 from various issues of the Balance of Payments Yearbook, International Monetary Funds, Washington, D.C.

*Dollar figures for capital goods imports and private long-term capital inflows were converted to constant 1960 pesos by the 1960 rate of 80 pesos to the dollar.

with it a considerable expansion of productive capacity in oil, chemicals and transport equipment. To take this phenomenon into account a new variable was introduced into the import demand function, consisting of the yearly ratio in constant pesos of the net inflow of long-term private capital to the level of gross investment. This variable serves as a proxy for the import intensiveness of domestic investment and should help explain the sharp difference in the behavior of imported capital goods in the span 1960 to 1963 and in the remaining years. Estimates that have included this variable are contained in columns (3) to (6) of Table 3-6. They employ untransformed yearly data for the period 1955 to 1971. The variables for imports, total absorption and import substituting capacity are all in constant 1960 pesos.[18] The relative price variable is the ratio of wholesale prices of imported goods to wholesale prices of non-rural domestic goods.[19]

In equations (2) to (4) imports of goods and services are the dependent variable. Using only total absorption of goods and services and relative prices as the independent variables in equation (2), the low

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[18]These variables are put into constant pesos by multiplying their physical volumes by their prices in 1960, the base year.

[19]While machinery is the main item omitted from the price index of imported goods, the whole index only covers about half of imported goods.

on statistic indicates the strong possibility
elation; the coefficient for price is positive
nificant and the highly significant coefficient
bsorption yields an income elasticity of .8.[20]
proxy variable for the import intensiveness of
lows brings a considerable improvement. The
for the new variable is highly significant,
ce variable becomes significant at the 4.5 per
with a price elasticity of .4. Though the $\bar{R}^2$
tably, the Durban-Watson statistic leaves the
of serial autocorrelation. While the income
is highly significant, it suggests an income
of just over one, somewhat lower than that
in the model.

introduction of import substituting capacity
natory variable could be expected to separate
uction in the demand for imports due to the
of domestic capacity and produce a higher
ticity. While precisely this does happen when
tituting capacity is introduced in equation (4),
iable is only significant at the 13 per cent
Durban-Watson of 2.95 indicates the presence
elation.

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[20] The average propensity to import out of total
is .1. The elasticity is computed by
e regression coefficient by this number.

A further attempt to respecify the equation was made by converting the dependent variable from imports of goods and services to imports of goods alone. This should improve the estimate by eliminating that upward pressure on imports of services arising from the capital inflow of 1959-63. Since merchandise import figures in constant pesos do not exist, the constant peso figures for imports of goods and services were converted to merchandise imports by multiplying them by the dollar ratio of imports of goods to imports of goods and services. This procedure introduces a distortion in the import figures to the extent that the dollar prices for goods have increased at a different rate than those for services. In equation (5), with imports of goods in constant pesos as the dependent variable, the Durban-Watson statistic is 1.99 and the import substituting capacity variable is significant at the 2 per cent level, though the $\bar{R}^2$ falls considerably.

Contrasting this formulation with that of Diaz Alejandro, with virtually no loss of explanatory power, the equation has been respecified so as to enlarge the number of significant or near significant explanatory variables from one to four. While total absorption is highly significant in both cases, by introducing a proxy variable for the import intensiveness of long-term capital inflows and eliminating services from the dependent variable, all the variables are significant at better than the

2.2 per cent level with the exception of relative prices, which are significant at the 7 per cent level. In relation to the model in Chapter 2, this result supports the contentions that there is very little substitutability between home production and imports and that imports are highly responsive to change in real income.

Exportables

In regard to exportables, the assumptions are:

(1) their domestic supply is inelastic in the short-run;

(2) domestic demand for them is price and income inelastic relative to the demand for home goods.

The evidence for these assumptions, based on *a priori* expectations and existing empirical research, is summarized here together with a picture of the evolution of Argentine exports.

Argentine exports.--During the period 1950 to 1970, the structure of Argentine exports, while remaining basically the same, has experienced a number of modifications, some of them policy induced. As can be seen in Table 3-8, food and other rural products have made up approximately 90 per cent of all exports, though the overall composition of rural exports has changed. During the 1950's, meat and grains expanded their combined share from 34.3 per cent to 52.3 per cent while all other main categories of rural exports maintained or reduced their

TABLE 3-8.--Composition of Argentine Exports (in Percentages)

SITC Categories	1950-52	1959-61	1968-70
0 Food	50.2	65.2	68.0
Meat	15.7	26.1	25.5
Grains	18.6	26.2	27.2
Other	15.8	16.0	15.4
2 Crude Materials, inedible, except fuel	31.1	23.5	12.3
Hides and skins undressed	9.7	7.1	3.9
Wool and other animal hair	15.2	13.5	6.3
Other			
4 Animal and Veg. Oils and Fats	9.3	6.8	5.3
Linseed Oil	3.8	4.4	1.6
Total Manufactures (5, 6, 7, 8)	9.4	4.2	13.4
5 Chemicals	7.9	3.3	3.4
6 Mfg. goods by Materials	.8	.5	4.8
7 Machinery and Transport Equip.	.0	.3	3.2
8 Misc. Mfg. Articles	.4	.2	2.0
Other (1, 3, 9)	.3	.2	1.0

Source: Various issues of International Trade Yearbook, United Nations, and Intercambio Comercial Argentino Según C.U.C.I., INDEC, República de Argentina.

shares. Also during the 1950's, Argentine exports of manufactured products, consisting almost entirely of chemicals, declined from 9.4 to 4.2 per cent of total exports. Although this figure does in some measure indicate the export discrimination against manufactures implicit in the import substitution policies, the major portion of chemical exports at that time was quebracho, a tree extract that could as easily be included among rural products. During the 1960's, while food products maintained their share of an expanding quantity and dollar value of exports, wool, hides, and linseed oil made up not only a declining share of exports but also a declining absolute quantity and dollar value. Manufactured products, on the other hand, experienced a strong expansion during the 1960's. Total manufactures, including chemicals, enlarged their share from 4.2 per cent in the period 1959-61 to 13.4 per cent in the period 1968-1970. If we exclude chemical products which merely maintained their share during this period, the expansion is all the more significant. In the early 1960's, a program of export promotion for non-traditional products was begun and gradually enlarged, with the 1967 stabilization program involving a major step in the growth of this program. During the period of the 1960's, exports of these products grew from slightly more than 1 per cent of total exports to 10 per cent. Their total, which had been 30 million dollars for the three

years 1959 to 1961 had expanded to 475 million dollars for the period 1968-70. The factors involved in this expansion will be studied in Chapter 8.

Diversification has also taken place in the countries to which Argentina exports. By 1968-70, the top six countries which had accounted for 66 per cent of all exports in the period 1959-1963 accounted for only 58 per cent. This shift was the result of declining exports to the United Kingdom combined with increases in trade with the countries of the Latin American Free Trade Association, particularly Brazil and Chile.

The demand for Argentine exports.--An attempt has been made to avoid the explicit assumption that Argentina is a price taker in the markets for her exports. Table 3-9 presents a picture of Argentina's changing share of world exports of these products and it can readily be seen that while the country's share for some products is still fairly large, the share of each product has dropped considerably. Even over the period of the 1960's when Argentine exports of meat and grains expanded considerably, the shares continued to decline, especially in the case of meat products. While policies that discriminate against the export of rural products have clearly had their impact, the shares of some of these products, particularly linseed, maize and meat of bovine animals, are large enough to suggest that

TABLE 3-9.--World Market Share of Principal Argentine Exports (in Percentages)

	1934-1938	1959-1962	1967-1970
Wheat and Wheat Flour	19.3	5.5	4.0
Maize	64.0	18.5	13.0
Greasy Wool	11.7	9.9	4.4
Degreased Wool		13.9	11.0
Linseed and Linseed Oil	67.6	49.3	22.9
Sunflower Seed and Its Oil	n.a.	14.1	5.9
All Meat (fresh, chilled or frozen)	39.7	17.5	9.2
Meat of Bovine Animals (fresh, chilled, or frozen)	n.a.	30.5	14.1
All Meat (dried, salted, smoked) or Meat Preparations	n.a.	8.0	0.5

Sources: Trade Yearbook, 1971, Food and Agricultural Organization of the United Nations, Rome; and Diaz Alejandro, Exchange Rate Stabilization, p. 70.

Note: n.a. indicates that the figure is not available.

Argentina is in a position to influence the price it receives for these products. Thus, the assumption of an infinitely elastic demand for Argentine exports does not strictly apply. Since linseed and linseed oil make up less than 2 per cent of Argentine exports, their high share of world exports would not seriously threaten such an assumption. Maize and meat of bovine animals, however, made up 27 per cent of exports in the period 1967-70 and Argentine supply fluctuations clearly do influence the dollar price received for these products. Here the assumption is restricted to saying that if the domestic supply response of these products to a change in prices is highly inelastic in the short-run, for the purpose of analyzing the short-run impact of a devaluation on export earnings, so long as domestic demand is also inelastic, dollar prices may be taken as given.

Domestic supply of exportables.--Beginning in 1953, attempts were made to relieve the foreign exchange shortage by stimulating agricultural production through higher prices. The failure of price subsidies and successive devaluations to bring increased agricultural production has led to hypotheses that the land tenure system and uncertainty about the continuance of these higher prices rendered agricultural production insensitive to price changes beyond the short-run. However, some recent

econometric research on the agricultural supply response that takes into account variables such as credit availability and physical capital has shown a price elasticity of supply of about .5, surprisingly high in light of previous surmises and quantitative research.[21] Attempting to reconcile the seeming contradiction of these higher estimates with the demonstrated unresponsiveness of agriculture to price incentives, Lucio Reca has formulated a model of the supply response of the agricultural sector that introduces technological change as a variable.[22] Using ordinary least squares, the volume of agricultural output (Q_t) is estimated as a linear function of the following dependent variables: (1) P_t = an index of implicit agricultural prices relative to implicit non-agricultural prices; (2) L_t = an index of real short-term credit granted to the agricultural sector; (3) T_n = an annual index of physical capital in the agricultural sector measured in horsepower; (4) D_1 = a dummy variable (equal to one for 1940/41 to 1943/44 and zero in all other years)

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[21]For relatively high estimates of agricultural supply response to price changes, see V. A. Becker, "Elasticidades de Oferta de la Producción Agropecuaria: Trigo, Maiz y Carne," Económica, XV, No. 2 (May-August, 1969), 145-81. For much lower estimates, see Diaz Alejandro, Exchange Rate Devaluation, pp. 72-87.

[22]Lucio G. Reca, "Determinantes de la Oferta Agropecuaria en la Argentina, 1934/35 - 1966/67," Estudios Sobre la Economía Argentina, Research Institute of the CGE-Argentina (August, 1969), No. 5, pp. 57-65.

attempting to capture the impact of the world war on agricultural production; (5) D_2 = a dummy variable (equal to one for 1948/49 to 1952/53) attempting to capture the impact of government neglect of agriculture during those years; (6) t = a dummy variable (equal to zero in the years 1934/35 to 1958/59 and one in 1959/60, two in 1960/61, etc.) designed to capture the impact of the strong agricultural research effort begun in the late 1950's. Reca's estimate is the following:

$$\underset{}{Q_t} = \underset{(26.516)}{75.902} + \underset{(.112)}{.342P_t} + \underset{(.035)}{.119L_t} + \underset{(.232)}{.277T_r} + \underset{(3.260)}{12.542D_1} - \underset{(2.647)}{7.699D_2} + \underset{(.766)}{3.28t}$$

$$R^2 = .875 \qquad DW = 2.70$$

Though the coefficient for the physical capital variable is not much larger than its standard error, prices, credit and technical changes are all highly significant. The overall performance of the equation is all the more striking inasmuch as it does not include weather conditions which have at times caused severe contractions in agricultural output. Reca found that the inclusion of the technological change variable reduced the coefficient of prices from .52 to .34, yielding a reduction in estimated price elasticity of supply from .48 to .31. In addition to producing a highly plausible estimate of the price responsiveness of the agricultural sector, his research also highlights the fact that the joining of a large

devaluation with a tight money policy frequently made it difficult for the agricultural sector to obtain the credit necessary to take advantage of the higher rural prices.

The product most responsible for the weak responsiveness of the agricultural sector to price changes appears to be beef. While the time lag necessary to increase crop size gives a rationale for the cereal response, Alejandro and others have shown how, given that beef cattle are both the output and the capital good input necessary to increase future output, in the short-run price increases bring a decline in current beef production as ranchers hold back cattle in order to build up the size of their herds.[23]

Domestic demand for exportables.--Though a devaluation is not likely to result in an increase in the short-run supply of exportables, it is still possible that by increasing the relative price of agricultural exportables or by reducing incomes, a devaluation could make more of these goods available for export. Our question here is, given the structure of Argentine exports and their domestic price and income elasticities, how likely is it that a

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[23]Diaz Alejandro, Exchange Rate Devaluation, pp. 79-85, and also "La Oferta de Ganado Vacuno: Analysis de Sus Perspectivas," Estudios Sobre la Economía Argentina (May, 1968), No. 1, p. 108.

devaluation will make more of the current production of these goods available for export.[24]

A priori considerations suggest a low price elasticity of home demand for Argentine exportables, given the nature of the goods. As has already been indicated, exportables consist overwhelmingly of basic food staples that make up a large portion of the family budget. The essential nature of food products suggests that price increases would mean less of a reduction in the quantities of these goods demanded than of other non-essential goods whose prices may have increased by less.

Since the available econometric evidence seems consistently to support our contentions about the domestic demand for exportables, it will only be briefly cited here. In estimating the domestic demand for individual exportables, beef has received the greatest amount of attention. Guadagni and Petrecolla estimated this demand over the period 1935 to 1961, employing as explanatory variables a price index for beef products, a price index for food products excluding beef, and income per capita.[25]

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[24]Though we are dealing here with the use of market forces to make more products available for export, the normal expedient has been to employ rationing, particularly of beef, to restrict domestic consumption. Thus consumers have been forced to use possible substitutes no matter what their preferences.

[25]Alieto Guadagni and Alberto Petrecolla, "La Función de Demanda de Carne Vacuna en Argentina en el Periodo 1935-1961," Working Paper, Torcuato di Tella Institute, 1966 (2nd ed.), pp. 8-20.

In various formulations the coefficients for income and beef prices were all highly significant, of the expected sign and less than .5, while the coefficient for other prices was not significantly different from zero.

Studying the possibilities for substitution in the meat market, Martinez simultaneously estimated the demand for beef and pork, finding that income changes do not seem to influence demand significantly and that "the low price and cross elasticities for beef relative to pork suggest a strong preference for the former in the taste structure of the Argentinian consumer."[26]

Janvry and Nuñez,[27] using Sjaastad's estimates of income elasticity of expenditure on food products together with the assumption that food and non-food products are additively separable in the utility function, computed the income elasticity of demand for non-food products as well as price elasticities for food and non-food products.[28] Sjaastad estimated the income elasticity of demand for food products as .48, leading to an income elasticity for

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[26]Miguel E. Martinez, "Un Estudio Econométrico del Mercado Argentino de Carnes," Revista de la Facultad de Ciencias Económicas Universidad Nacional de Cuyo, XX, No. 58 (January-April, 1968), 61.

[27]Alain de Janvry y Agustin Nuñez, "Análisis de Demanda para Productos Agropecuarios en Argentina," Económica, XVII, No. 3 (September-December, 1971), 266-78.

[28]Ibid., p. 274.

non-food products of 1.09 and price elasticities of -0.25 and -0.96 for food and non-food products respectively.

Short-Run Capital Flows

Movements of private short-run capital flows were described in Chapter 2 as a response to interest rate differentials as well as the desire of Argentine business men to avoid losses in the real value of their money balances caused by devaluations and negative real rates of interest in Argentina.[29] Figure 3-1 graphs the yearly flows of short-term capital from 1959 to 1971. The total flow was a minus 637 million dollars, implying a mean of minus 49 million dollars and, more significantly, a standard deviation of 208 million dollars. The years of short-term capital inflow are concentrated in the period 1959-61 and 1967-70, with the exception of 1969, a year of considerable political unrest. The problem in explaining these flows is to determine why short-term capital flowed into Argentina when it did since there is little difficulty in seeing the economic basis for capital outflows. During the period in question the government has kept bank and government security rates of interest so low

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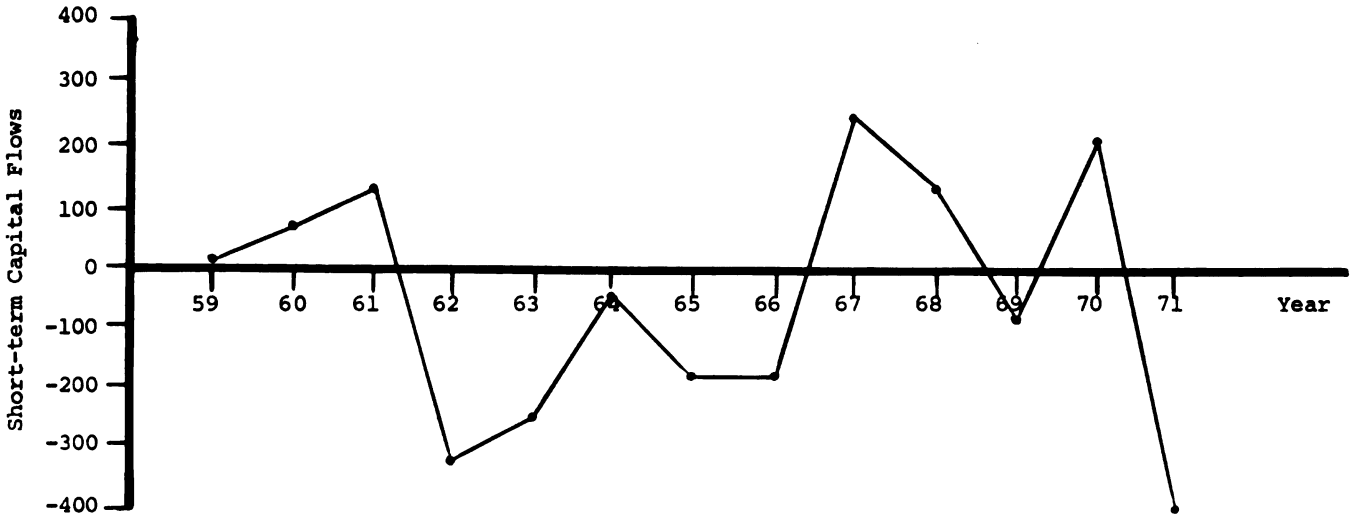
[29]These flows consist of changes in short-term indebtedness as well as movements of owned funds and thus it is being postulated that: (1) the fear of loss through holding funds in Argentina also influences the willingness to borrow foreign funds and to keep these debts outstanding; and (2) while the covered interest differential strongly affects the flow of owned funds, it has little influence on indebtedness.



Sources: Various issues of BCRA, Bóletin Estadístico and Ministerio de Hacienda y Finanzas, Informe Económico.

Figure 3-1.--Private Short-term Capital Flows: 1959-1971 (in Millions of Dollars)

that inflation has rendered the real interest rate negative in every year. At the same time the government was committed to the policy of pegged exchange rates which were subject to periodic downward adjustments. Given these circumstances, the function of liquid capital was basically to meet current necessary expenditures when bank credit was not available for this purpose. With the exception of those funds borrowed at negative real rates of interest, holding liquid capital has been extremely expensive both in real terms and relative to the dollar.

The hypothesis that capital flows have been a response not only to interest rate differentials but also to the current rate of inflation and the impact of that rate on the prospects for a devaluation can be tested for the period under study since quarterly data on short-term capital flows, c, have been published since 1967.[30] In conducting such a test these flows were regressed against an interest rate variable and a speculative variable. The interest rate variable, r, was the covered interest differential on 180-day treasury bills between Argentina and the United States, that is, the Argentine treasury bill rate minus the United States rate minus the exchange

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[30]For the first and second quarters of 1967, private capital flows are not divided into long and short-term. Since net long-term flows were minimal all through the 1966-1968 period, we have assumed that in these two quarters the ratio of long-term to short-term capital was the same as for the first half of 1967.

premium on 180-day forward dollars. The expected sign of the coefficient is positive since higher Argentine rates should bring a capital inflow. The speculative variable, s, the actual exchange rate minus the theoretical equilibrium of exchange, is taken as a proxy variable for the intensity of speculation against the exchange rate. Since an actual rate well above the theoretical equilibrium should minimize speculation, the expected sign of the coefficient is positive. Ordinary least squares were used with the independent variables being quarterly averages for the period 1967 to 1971.

The results were the following:

(1) $c = 45.1 + 17.2\ r$
$\qquad\qquad\quad (4.5)$

$\bar{R}^2 = .42 \qquad DW = 1.14 \qquad df = 18$

(2) $c = 7.4 + 1.95\ s$
$\qquad\qquad (0.37)$

$\bar{R}^2 = .58 \qquad DW = 1.58 \qquad df = 18$

(3) $c = 27.8 + 8.96\ r + 1.47\ s$
$\qquad\qquad\quad (4.15) \quad (0.41)$

$\bar{R}^2 = .65 \qquad DW = 1.92 \qquad df = 17$

In equation (1) where the covered interest rate differential is the only independent variable, a one percentage point differential brings a quarterly short-term capital

inflow of 17.2 million dollars.[31] While this variable alone explains 45 per cent of the variation in capital flows, the low Durban-Watson statistic raises the possibility that the equation is not correctly specified. With the speculative variable as the sole independent variable, 58 per cent of the variation is explained and an actual exchange rate one peso greater than the theoretical equilibrium induces a quarterly inflow of 1.95 million dollars. In both equations the independent variable is significant at least at the 0.1 per cent level.

When the two independent variables are introduced together, the $\bar{R}^2$ rises to .65 and both are still significant, the speculative variable at 0.2 per cent and the interest rate differential at 4.5 per cent. These results appear quite good when considered in the light of all the economic and political factors which influence short-term flows.

Inflation and the Government Deficit

Since the government finances its deficits by borrowing from the Central Bank, budget deficits are an important source of money supply expansion. Though the government frequently plans a deficit of a particular size,

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[31] The constant fluctuation in the interest differential makes it difficult to address the question of whether a given interest rate differential would produce a continual inflow or, with the approximation of balanced portfolios, the flow would gradually diminish.

the fact that government tax collections, which have been assessed at a previous date, do not increase with inflation while government expenditures do, means that the actual deficit can be much larger than the planned deficit. Dean Dutton has incorporated the impact of inflation on the size of the government deficit into a model of self-generating inflation in Argentina. Here we merely refer to his deficit equation as the evidence for our assumption that the nominal deficit will grow in an inflation due to tax collections lagging behind government costs.[32] Dutton sees the size of the nominal deficit in a particular period as a function of the planned real deficit, the price level at the start of the period, the rate of price increase over the period and the time pattern according to which government expenditures are made. The nominal deficit will be larger if government expenditures are concentrated later in the period when prices have already risen substantially. Assuming that government expenditures have been distributed evenly over the period, the rate of change of prices becomes the crucial variable. Based on quarterly data for the period 1958 to 1966, Dutton's equation performs reasonably well, yielding an R^2 of .71 while the rate of

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[32]Dean Dutton, "A Model of Self-Generating Inflation: The Argentine Case" (unpublished Ph.D. dissertation, Michigan State University, 1968).

price change variable is significant at the 5 per cent level.[33]

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[33]For the theoretical development of the equation see Dutton, "A Model of Self-Generating Inflation," pp. 25-28. The empirical estimate is on page 39.

CHAPTER 4

INFLATION IN ARGENTINA: A QUANTITATIVE ANALYSIS

The inflationary spiral has been related to a constant round of government deficits financed by an expanded money supply, devaluations, and wage increases that are quickly translated into higher prices. While the basic elements connected with inflation are identifiable, their relative importance remains somewhat clouded. The approach adopted here, as indicated in the price assumptions of Chapter 2, sees the inflation as less a demand or structural one, and more as a struggle over incomes shares in which the various sectors of the economy seek to raise their income shares to their previous highest level and to maintain them there. Thus, wage increases boost the share of salaried workers relative to the industrialists and rural landowners. The industrialists advance their incomes by increasing prices and the rural landowners pressure for a devaluation. Each group has an idea of its own "right" income level which is based on previously experiencing that level as government policies alternately favored the industrialists through import substitution, the workers

through public works and massive wage increases, and the rural sector through devaluations and subsidies.

Our purpose here is to conduct a statistical analysis of the inflationary process that is designed in such a way that it can contradict this view of inflation. Our results, while not proving precisely how the inflationary mechanism works, do lend strong support to the approach adopted here.

Studies of Argentine inflation fall to some degree into the structuralist and monetarist categories. A purely structural approach was taken by Villanueva who saw the key to the inflationary process as a rising domestic demand for food in the face of an agricultural sector with a low long-run elasticity of supply and a manufacturing sector with a permissive wage policy and rigid profit margins.[1] The excess demand for food pushes up agricultural and manufacturing prices without an increase in food supplies. Most of the other studies have been strongly influenced by the work of Arnold Harberger on Chile.[2] Dutton has formulated a model of self-generating inflation in which the rate of inflation is a function of the current period's real per capita money stock and the previous

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[1]Villanueva, "The Inflationary Process in Argentina, 1943-60."

[2]Arnold C. Harberger, "The Dynamics of Inflation in Chile," in Measurement in Economics: Studies in Mathematical Economics in Honor of Yehuda Grunfeld, ed. by Carl F. Christ (Stanford: Stanford University Press, 1963), pp. 219-50.

period's rate of change in the price level.[3] Since the rate of increase of the money stock depends on the fiscal deficit, with tax payments lagging behind government expenditures in time of inflation, the fiscal deficit itself increases with the rate of inflation. Thus, the inflation will be self-perpetuating.

While the Villanueva and Dutton studies focus on particular aspect of Argentine inflation, our interest is more in finding a price equation which relates the chief tools of price policy to the rate of inflation. Along these lines, Harberger's basic methodology has been applied to Argentina by two different economists with contradictory results. Adolpho Diz, a student of Harberger's, studied the period 1946-62 and found, as Harberger had for Chile, that the inflation was readily explainable by monetary factors and that wages and the exchange rate had little to contribute to that explanation.[4] With some minor adaptations of the methodology, C. F. Diaz Alejandro found that during the period 1950-65, wages and the exchange rate seemed to be the prime movers of inflation while money followed a largely passive role.[5] Our approach here will

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[3]Dutton, "A Model of Self Generating Inflation."

[4]Adolpho Diz, "Money and Prices in Argentina: 1935-62," in Varieties of Monetary Experience, ed. by David Meiselman (Chicago: Chicago University Press, 1970), pp. 69-162.

[5]Diaz Alejandro, "Stop-Go Cycles and Inflation," pp. 366-76.

be first to review the methodology of Harberger which is the starting point for these works as well as for our own estimates and then to critique the studies of Diz and Diaz Alejandro with a view to seeing how their different results arise. The goal will be to come up with a price equation which will suggest an appropriate anti-inflationary policy for Argentina. If for the period we are studying, 1953-1971, the Diz results should hold, then the 1967 stabilization plan would seem to have been inappropriate, adopting as it did a relaxed attitude toward increases in the money supply in the face of rapid inflation. The income policy approach to inflation incorporated in the 1967 plan would have much greater validity if income variables such as wages and the exchange rate had considerable explanatory power in a function explaining price increases. Particular attention will be given to expectations which have a different role in the two approaches. In the monetary approach, they give an impetus to rising prices through their impact on the desirability of holding money. In the incomes approach, expectations of future price increases influence the wage rate increases that are being negotiated today and the exchange rate increase that is being demanded today and which must be large enough that speculators will not soon be betting on further devaluations.

Exploring the mechanism by which Chilean inflation was generated over the period 1939-1958, Harberger sought

to discover the roles played in the inflation by monetary expansion, by the past rate of expansion of prices and by wage changes. He focused on the rate of price increase as the variable to be explained since very rapid inflation would too easily yield a high correlation between the price level and almost any time series expressed in monetary units. After testing different time patterns designed to capture the lagged impact of money supply changes on price, the monetary variables selected were: (1) M_t = the percentage change in the money supply in the six months prior to the end of the present quarter, and (2) D_t = a weighted average of the percentage changes in the money supply in the three previous six-month periods. To represent the impact of previous rates of change of the price level on the current rate of inflation, the percentage change in the price level in the previous twelve-month period, signified by A_t, was employed. The rationale for this variable is as follows. A simple transformation of the normal liquidity preference function will express the level of prices as a function of the money supply, the level of real income and the expected cost of holding cash, and thus the rate of change of prices will be a function of the rate of change of the money supply, the rate of change of real income, and the rate of change of the expected cost of holding cash. When the expected cost of holding cash is rising, if people try to lower their real cash balances an upward pressure on the price level will be created.

The wage variable employed was W_t, the percentage increase in the minimum wage at its most recent annual adjustment. The presumption is that these higher wages will quickly result in higher prices, and when the monetary authorities do not allow the money supply to increase by enough to "finance" the higher wages, wages will add something to the explanation of price level increases yielded by monetary factors. However, if the money supply always increases by enough to allow full employment at the higher wage level, wages will not add much to the explanatory power of money supply increases.

Finally, a real income variable, Y_t, was employed to account for the impact of changes in the domestic supply of goods and services on the price level. Employing a seasonal constant, S_t, along with these variables to explain the quarterly rate of change of the consumer price index, P_t, Harberger obtained the following result:[6]

$$P_t = S_t - \underset{(.24)}{.49Y_t} + \underset{(.10)}{.31M_t} + \underset{(.13)}{.21D_t} + \underset{(.03)}{.04A_t} + \underset{(.06)}{.04W_t}$$

$$R^2 = .54$$

The sum of the coefficients of the money variables is very close to .5, supporting the monetarists' contention that a 1 per cent increase in the money supply will

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[6]Harberger, "The Dynamics of Inflation in Chile," p. 230.

ultimately lead to a 1 per cent increase in the price level.[7] Without wages in the equation the R^2 is still .54 and the lagged money variable is clearly significant while that for expected price change is marginally significant. In general this equation together with the others in Harberger's study lend support to the contention that wages add little to a monetary explanation of Chilean inflation.

In the Diz study, except for his treatment of expectations, the Harberger methodology is followed quite closely. Attempting to discover the extent to which current and past changes in the quantity of money can explain the current rate of price changes, he tests the following relationship:

$$\Delta \log P_t = \alpha_1 \Delta \log M_t + \alpha_2 \Delta \log M_{t-2} + \alpha_3 \Delta \log M_{t-4} + \alpha_4 \Delta \log M_{t-6}$$

where $\Delta \log P_t$ is the quarterly rate of change of the average wholesale price index and $\Delta \log M_t$ is the semi-annual rate of change of the average money stock. This relationship should give information on a number of aspects of the relationship of money and price: (1) what is the lag pattern with which money supply changes affect the price level; (2) assuming that a sustained monetary

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[7] The expected result is .5 and not 1.0 since in this equation the dependent monetary variables represent six-month changes while the price rate changes are quarterly.

expansion will bring about a roughly equivalent increase in the rate of price expansion, how much of the impact on prices will be felt within the two-year span covered by this equation; (3) since only a lower level of real cash balances will be consistent with the new higher rate of price expansion, will some overshooting initially occur in the time path of price increase while cash balances decline to their new desired level.

The coefficients for the period 1946-62 were the following:[8]

M_t	M_{t-2}	M_{t-4}	M_{t-6}
.629	.088	-.445	-.043
(.110)	(.103)	(.104)	(.114)

R^2 = .443, Standard Error of Estimate = .045

While tests for the cost of living index do show coefficients summing to the expected .5, the sum of the coefficients for the wholesale price index is much lower and would suggest the possibility of a period of adjustment longer than two years. This result does, however, show an initial overshooting and a sharp deceleration of prices taking place in the third semester.

In order to gain an idea of the relative strength of other variables in determining the rate of change of

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[8]Diz, "Money and Prices in Argentina: 1935-62," p. 114.

prices Diz introduces the following variables into the equation:

ΔRE = exogeneous change in price expectations

$\Delta \log Y$ = quarterly rate of change of average real income.

$\Delta \log X$ = quarterly rate of the change of the official dollar exchange rate from the middle of one quarter to the next.

$\Delta \log W$ = quarterly rate of change of an index of nominal wages from the middle of one quarter to the next.

S_t = a set of three dummy variables.

Assuming that expectations of future price changes are adapted each period by some percentage of the difference between actual inflation and the inflation previously expected, the expected rate of price change for the current period is obtained as a weighted sum of past actual price changes, the weights varying with the coefficient of adaption of price expectations (δ) used. Many coefficients were tried in order to have several series of expected price change with which to maximize the coefficient of determination in the final price change equation. First, however, since the price expectations variable is a combination of past price rate changes, it would include the past influence of policy variables included in the final

equation and would thus introduce a degree of interdependence among the independent variables. To deal with this problem, a two-stage estimation procedure was introduced. In the first stage, a regression equation was run in which the dependent variable was the change in the expected rate of price change from period t-2 to period t-1 and the independent variables were the corresponding four semiannual rates of changes of the money supply, the rate of change of the exchange rate and the corresponding and lagged value of an index of nominal wages. The residuals of this equation were taken as the exogenous changes in price expectations in that they were now free of the influence of previous changes in the policy variables. They were then introduced as an independent variable (ΔRE) in the second stage equation. The coefficients for the second stage equation for the period 1946-62 are presented here:[9]

δ	M_t	M_{t-2}	$M_{t-4)}$	M_{t-6}	RE	Y	X	W	S_1	S_2	S_3
.1	.462	-.022	-.217	-.079	4.536	-.514	.097	.033	.066	.017	.045
	(.105)	(.108)	(.103)	(.092)	(1.196)	(.234)	(.024)	(.043)	(.022)	(.019)	(.012)

$R^2 = .760$ **Standard Error of the Estimate = .032**

This equation is the one in which the coefficient of adjustment of price expectations $\delta = .1$ maximized the R^2. The introduction of the additional variables improves the

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[9] Ibid., p. 119.

equation considerably, raising the coefficient of multiple determination from .443 to .760. The coefficients for the money variables again indicate an overshooting in the initial period with a sharp deceleration in the third period. A sum of the money supply coefficients of less than .5 suggests an adjustment period of greater than two years. The monetary explanation of inflation is reinforced by the expectations variable which is highly significant. The coefficients for wages and the exchange rate suggest that these variables have little influence on the price level changes that cannot be explained by money supply increases. The coefficient for the exchange rate of .097 is significant at well under the 5 per cent level, and implies that a 100 per cent devaluation would only increase the wholesale price level by 9.7 per cent. The coefficient for wages is .033 and insignificant. Diz's empirical results, coming at a time when theories of inflation had not been soundly tested in Argentina, argued strongly for an anti-inflationary policy based on careful regulation of the money supply.

C. F. Diaz Alejandro, also adapting his methodology from the Harberger analysis, studied a slightly later period, 1950 to 1965, and came to sharply different conclusions about the role of policy variables in Argentine inflation. Alejandro did not consider the role of expectations but concentrated rather on bringing out the role

of wages and the exchange rate relative to the money supply and thus sought variables that would better chart the impact of wage and exchange rate changes on the economy. Where Diz used the changes from the middle of one quarter to the next in the official exchange rate that applied only to imports, Alejandro employed changes in the average semiannual rate applied to all merchandise trade.[10] Second, while Diz employed for the wage variable changes in the index of nominal wages from the middle of one quarter to the next, in order to avoid short-run erratic fluctuations of monthly data Alejandro's wage variable is changes in the semiannual averages of nominal wages. In his equation, the wage change and money supply change in the current period are employed as independent variables together their lagged values for one and two periods, the exchange rate changes and the change in real domestic supplies.[11] All variables are percentage changes in six-month averages. Taking the period 1950-65, he obtains the following result:[12]

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[10]This rate was found by dividing the semiannual sum of imports and exports measured in pesos by the same sum measured in dollars.

[11]Real domestic supplies are the sum of gross domestic product and imports.

[12]Diaz Alejandro, "Stop-Go Cycles and Inflation," p. 373.

$$P_t = -2.66 + .49M_t + .26M_{t-1} - .68M_{t-2} - .37Y + .25X$$

$$\quad (3.12) \quad (0.25) \quad (0.23) \quad (0.23) \quad (0.19) \quad (0.06)$$

$$+ .37W + .41W_2 + .18W_3$$

$$(0.15) \quad (0.15) \quad (0.15)$$

$$R^2 = .86 \qquad DW = 1.56$$

Here the money variables, with the exception of M_{t-2}, are not significant, and since we are dealing with semiannual price changes their coefficients are much smaller than those of Diz. On the other hand, the first two wage coefficients are significant and the wage and exchange rate coefficients are considerably larger. An exchange rate coefficient of .25 would suggest that a 100 per cent devaluation would increase the wholesale price index by 25 per cent, a result in close conformity with the relative importance of tradeables in the economy. The impact of the wage variable is spread out over three periods or more and is concentrated most heavily in the period immediately following a wage change.

Previous empirical research on inflation in Argentina, then, indicates that when expectations are considered together with wage and exchange rate variables that give a less than satisfactory indication of the impact of these policy instruments on domestic prices, expectations appear to be highly significant along with

the money supply while wages and the exchange rate do not seem to have been important. But when expectations are not considered and more representative wage and exchange rate series are employed, the wage and exchange rate variables appear to be quite important and the money supply ones less so.

These results and the emphasis in the 1967 stabilization plan on expectations and relationship between income shares and inflation suggested our own line of approach, namely, to introduce expectations into a rate of price change equation in which the wage and exchange rate variables are the semiannual averages employed by Alejandro. If expectations have a strong influence on price, then their introduction could well have a marked impact on the explanatory power of other independent variables such as wages and the exchange rate. To introduce expectations, a method similar to the two-stage technique of Diz was employed. Using coefficients of adaption of expectations of from .2 to .9, eight time series of percentages changes in the expected rate of price change were prepared with 43 observations going from the first half of 1950 to the first half of 1971. The semiannual percentage change in each of these series was then introduced as the dependent variable in a regression in which the independent variables were the corresponding semiannual rates of change of the policy

es and their lagged values. The coefficients of quations for δ = .2, .3, and .4 are presented in -1. Since the expected rate of price change is a l average of past rates of inflation, then its should be explained by the factors that most y influence prices themselves. Because these l averages are dominated by the price changes in t recent periods, the high and significant co- nts for current exchange rate changes and the wage from a year to six months ago argue for the impor- f wage and exchange rate changes in determining the evel.

Next the residuals of these equations, EPC, were ced into a rate of price change equation along with centage changes in the policy variables plus the age changes in real supplies. The residual for t-1 was taken as the exogenous rate of change of tions in the equation for period t. The results e regressions for δ = .2, .3, and .4 are given in -2. The introduction of expectations into this n adds only slightly to its explanatory power. The ient of adaptation of expectations for which R^2 is ed is .2. Though the coefficient of price expec- is only significant at the 11 per cent level when c supplies are included and 13 per cent when they , a slight raising or lowering of the coefficient

TABLE 4-1.--Price Equation Regression--First Stage*

Independent Variables	(1) d = .2	(2) d = .3	(3) d = .4
Constant	- 8.37	- 4.77	3.16
M_t (Money Supply)	.47	.34	.14
	(.41)	(.55)	(.72)
M_{t-1}	- .10	- .35	- .49
	(.39)	(.53)	(.69)
M_{t-2}	- 1.01	- 1.42	- 1.83
	(.33)	(.45)	(.58)
X (Exchange Rate)	.49	.72	1.00
	(.10)	(.14)	(.18)
W_t (Wages)	.47	.59	.56
	(.24)	(.33)	(.42)
W_{t-1}	.49	.65	.58
	(.24)	(.33)	(.42)
$\bar{R}^2$	.67	.67	.65
DW	1.49	1.56	1.77
df	36	36	36

Sources: See pages 258-59 of the Statistical Appendix.

*The dependent variable is percentage changes in the expected rate of inflation.

TABLE 4-2.--Price Equation Regressions--Second Stage*

Independent Variables	(1) d = .2	(2) d = .3	(3) d = .4
Constant	- .73	- .63	- -.67
M_t (Money Supply)	.43	.42	.40
	(.21)	(.22)	(.22)
M_{t-1}	.27	.27	.28
	(.20)	(.20)	(.21)
M_{t-2}	- .55	- .55	- .55
	(.17)	(.17)	(.18)
X (Exchange Rate)	.25	.24	.24
	(.05)	(.05)	(.05)
W_t (Wages)	.36	.37	.39
	(.13)	(.13)	(.13)
W_{t-1}	.35	.35	.35
	(.12)	(.12)	(.13)
Y	- .33	- .33	- .33
	(.18)	(.19)	(.19)
EPC (Proxy for Expectations)	.14	.09	.05
	(.09)	(.07)	(.05)
$\bar{R}^2$	.78	.78	.78
DW	2.22	2.05	1.90
df	34	34	34

Sources: See pages 5-8 of the Statistical Appendix.

*The dependent variable is percentage change in semiannual averages of the wholesale price index.

of adaptation may well bring significance at something close to the 5 per cent level. As the coefficient of adaptation is lowered from .9 to .2 and expectations become more important to the equation, some of the other coefficients, particularly M_t and W_t, fall slightly in significance. The overall conclusion would appear to be that while expectations, as a factor distinct from the influence of other policy variables, may have some importance in explaining the rate of price increase in Argentina, their omission by no means involves a gross distortion. The first stage equations employed in this analysis suggest that changes in price expectations are closely linked to current and recent policy variables.

How then explain the high explanatory power attributed to price expectations in the equation of Diz? The difference seems to be in the choice of wage and exchange rate variables.[13] Diz's choice of a single wage observation for each quarter introduces the possibility of his observations differing at times from the trend of labor costs as well as a greater possibility of individual measurement errors distorting the wage series. Nor would it take account of the lagged impact of wages on prices. His choice of the official exchange rate meant that other commercial policy measures such as tariffs and

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[13]Alejandro speculated that this might be the case. See Diaz Alejandro, "Stop-Go Cycles and Inflation," p. 376.

quantitative restrictions which affect the domestic cost of traded goods would have no influence in testing the determination of prices. Thus, to the extent that the influence of wages and the exchange rate was not being captured in the first stage equation, a certain amount of the variation due to these factors would be transferred to the second stage equation through the residuals. If the same "weak" wage and exchange rate variables are used in the second stage equation, this unexplained variation which is in fact due to wages and the exchange rate would be explaining price fluctuations through the expectations variable. As a test of this contention, changes in the expected rate of inflation, EXPPC, were introduced into the second stage equation as a proxy for the residuals where wage and exchange rate changes had left most of the variation in price expectations unexplained. In order to approximate what happens to the influence of expectations when the explanatory power of the wage and exchange rate variables is diminished, the equation was then tried with and without these variables. The results for $\delta = .2$ are given in Table 4-3. Price expectations when taken with only the money supply variables and domestic supply are highly significant. When the exchange rate variable is added, the coefficient of determination improves and the expectations variable is still significant at the 1 per cent level. However, adding the wage variables to the

TABLE 4-3.--Price Regressions With the Expected Rate of Inflation as an Independent Variable*

Independent Variables	(1) d = .2	(2) d = .2	(3) d = .2	(4) d = .2
Constant	6.76	5.54	1.52	1.54
M_t (Money Supply)	1.16	.66	.76	.42
	(.22)	(.21)	(.24)	(.21)
M_{t-1}	.21	.23	.16	.16
	(.24)	(.19)	(.27)	(.21)
M_{t-2}	- .85	- .59	- .78	- .56
	(.22)	(.19)	(.20)	(.17)
X (Exchange Rate)		.27		.24
		(.06)		(.05)
W_t (Wages)			.45	.34
			(.16)	(.13)
W_{t-1}			.36	.30
			(.15)	(.12)
Y (Domestic Supply	- .36	- .20	- .39	- .24
	(.27)	(.22)	(.24)	(.20)
EXPPC (Expected Rate of Inflation)	.23	.18	.12	.11
	(.08)	(.06)	(.08)	(.06)
$\bar{R}^2$	.58	.73	.67	.79
DW	1.98	1.74	2.16	1.99
df	37	36	35	34

Sources: See pages 258-59 of the Statistical Appendix.

*The dependent variable is percentage changes in semiannual averages of the wholesale price index.

money, domestic supply and expectations variables, expectations cease to be significant at the 5 per cent level. When wages and the exchange rate are used together, while the corrected coefficient of determination rises from .67 to .79, both expectations and the most recent increases in the money supply are non-significant. While by no means conclusive, this test lends support to the notion that in the Diz equations, expectations are acting as a proxy for changes in the cost of labor which were not eliminated in the first stage and are not being effectively captured in the second stage.

Having gained some idea of the relative importance of these variables in influencing the overall price level in Argentina, again following the lead of Harberger's article, we attempt to gain further insight into the inflationary process by using these same explanatory variables to explain fluctuations in the disaggregated components of the wholesale price index and the cost of living index. The wholesale price index has the three main components listed here with their relative weightings in parentheses:[14] (1) non-rural domestic wholesale prices (68.7%); (2) rural wholesale prices (26.5%); and (3) imported wholesale prices (4.8%). Since this weighting

[14]Carmen Llorens de Azar and Frida Johansen, "Principales Estadísticas Argentinas: Metodologías y Fuentes," Revista de Administración y Economía, IDEA, I, No. 4 (1970), 57.

is based on the industrial census of 1953, a much slower growth rate in the agricultural sector than in the manufacturing sector means that the weighting of the wholesale price index is now biased toward rural products.[15] On *a priori* grounds, one would expect the policy variables to differ in the impact they have on these component indices. Money supply increases should have a stronger and more immediate impact on non-rural domestic prices as should wage increases. Devaluations could be expected to have their greatest impact on the prices of imports and rural products and a much smaller impact on non-rural domestic prices. Wage increases and devaluations should be much more closely linked to changes in the cost of living index than money supply changes would be. Table 4—4 gives the results of tests for the period 1953-71.

The money supply coefficients perform as expected though the very high coefficient of M_t for import prices would suggest a validation of the higher prices brought by devaluation rather than a causal relationship. The coefficient of M_t for non-rural domestic prices is significant, and when rural prices are introduced, the coefficient for the wholesale price index is still significant. The figures for the cost of living coefficient

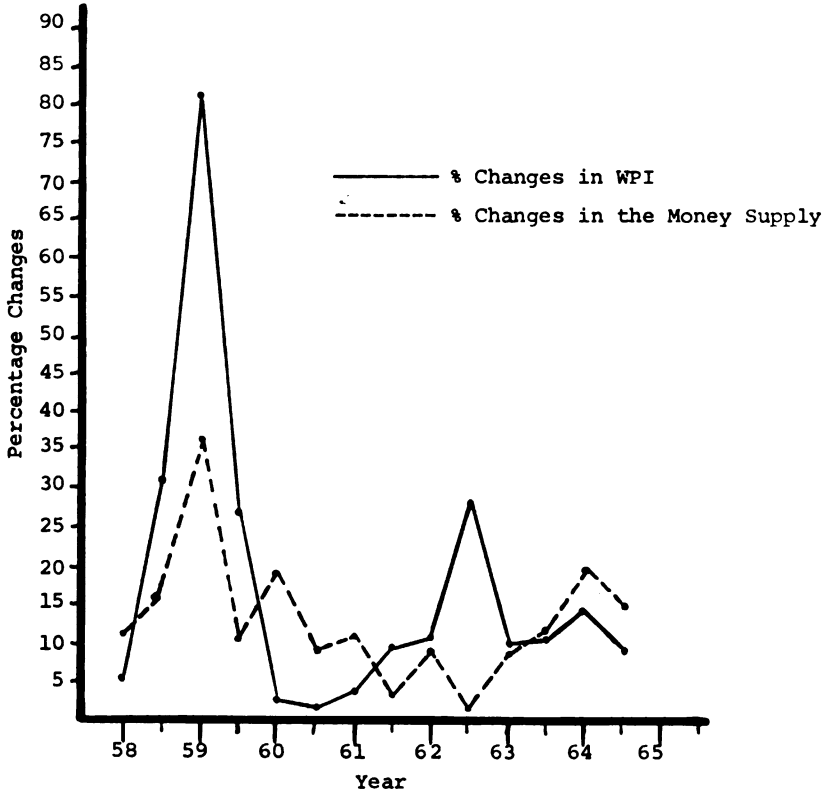
[15]Between 1953 and 1967 the ratio of agricultural to total goods production went from .34 to .24 and that for manufactured goods went from .43 to .53. These figures are based on data in B.C.R.A., Origen del Producto y Composición de Gasto Nacional, Supplement to Boletín Estadístico (June, 1966), pp. 14 and 18; and Informe Económico, Statistical Appendix, No. 4 (1971), p. 4.

TABLE 4-4.--Inflation Regressions (1953-1971)

Independent Variables \ Dependent Variables	(1) Wholesale Prices	(2) Rural Prices	(3) Non-Rural Domestic Prices	(4) Import Prices	(5) Cost of Living
Constant	- .88	3.73	- .247	-5.37	-2.84
M_t (Money Supply)	.42	.34	.45	.59	.23
	(.20	(.27)	(.19)	(.23)	(.17)
M_{t-1}	.22	.22	.21	.31	.21
	(.18)	(.25)	(.18)	(.22)	(.16)
M_{t-2}	- .59	- .94	- .46	- .34	- .22
	(.16)	(.21)	(.15)	(.19)	(.13)
X (Exchange Rate)	.25	.38	.17	.64	.13
	(.05)	(.07)	(.05)	(.06)	(.04)
W_t (Wages)	.38	.27	.44	.10	.46
	(.11)	(.15)	(.11)	(.14)	(.10)
W_{t-1}	.39	.46	.38	.18	.45
	(.11)	(.15)	(.11)	(.13)	(.10)
Y (Domestic Supply)	- .38	- .26	- .44	- .36	- .40
	(.20)	(.27)	(.20)	(.24)	(.17)
$\bar{R}^2$	.84	.80	.83	.89	.83
DW	1.97	2.09	1.99	1.85	2.06
df	30	30	30	30	30

Sources: See pages 5-8 of the Statistical Appendix.

indicate the lack of a close relationship with money supply changes. The relatively small size of the positive money coefficients together with the large negative coefficients for M_{t-2} call into question Diz's suggestion that the negative coefficients are due to deceleration of prices after an initial overshooting as money balances are adjusted to higher rates of inflation. It would seem rather that money supply changes were passively responding to the price fluctuations of the stop-go cycle. As a stabilization effort begins with a devaluation, the money supply increases to accommodate higher rural and imported prices--thus the high coefficients of M_t for these prices. The middle of the cycle, a year to 18 months later brings a deceleration of prices due to the constant exchange rate and the recessionary impact of the stabilization plan. Finally, a year to eighteen months later economic recovery, spurred by government deficits with their money supply increases, is well under way and inflation and eventually balance of payments problems necessitate the inauguration of another stabilization plan. Thus, with a passive money supply there would be an inverse relationship between the money supply increases and the relative price stability achieved in the middle of the cycle and an inverse relationship between the slow monetary expansion in the middle of the cycle and the rapid price expansion associated with a sustained period of recovery and a new stabilization plan.



Source: See Table A5, column 1; and Table A6, column 1.

Figure 4-1.--Semiannual Percentage Changes in the Wholesale Price Index and the Money Supply, 1958-64

This inverse relationship is illustrated in Figure 4-1 which deals with the 1959-1962 cycle that began with the stabilization plan of 1959. In the first half of 1959, the price and money supply changes moved in the same direction in a way that might suggest an overshooting of prices as money balances were drawn down. However, this excess demand explanation is weakened by the fact that in the same semester, while the money supply expanded by 37 per cent, gross domestic product fell by 5 per cent, the average exchange rate rose by 109 per cent and wages by 44 per cent. The rapid though inadequate money expansion is followed a year later by very low rates of price increase as the tremendous redistribution of income away from wage earners and to entrepreneurs in the recession of 1959 made further price increases impractical. The money supply expansion slowed with the achievement of price stability and as prices began to rise in late 1961 after two years of economic expansion, the rate of money supply expansion continued to slacken. The 3.6 per cent rate of money supply expansion of late 1961 is followed 12 months later by a new stabilization program, devaluation and a 26 per cent jump in the wholesale price index. While our cyclic explanation of the inverse relationship between money supply changes and prices 12 months later is not borne out in every instance, it seems considerably more plausible than attributing this relationship to a deceleration due to a previous overshooting.

Though the exchange rate coefficient of .25 is just what we would expect from the relative weight of tradeables in gross domestic product, the component indices shed some added light on price and policy interactions. While devaluation has its most direct impact on imports, with a coefficient of .64, the lower coefficient for rural prices, .38, indicates that they have in part been shielded from the impact of devaluation by flexible export taxes and domestic price subsidies. The coefficient for non-rural domestic products, .17, is close to the 15 per cent price increase we postulated from the weight of importables in gross domestic product.

Except for imported goods and for W_t in the regression for rural prices, all the wage coefficients are significant at at least the 5.0 per cent level. As expected, changes in W_t have their strongest immediate impact on non-rural domestic prices. While wage changes seem to have a lagged impact on rural prices, Alejandro suggests that this could easily be due to the government's tendency to improve wages in order to gain acceptance for a subsequent devaluation.[16]

The overall picture of price changes being more closely associated with wage changes than with money supply increases gains further support from an examination

[16]Diaz Alejandro, "Stop-Go Cycles and Inflation," p. 375.

of wage and money supply changes as single determinants of price level increases. In order to obtain an idea of the changing importance of these factors over time several tests were tried for the periods, 1950-1971, and 1956 to 1971. For both of these periods wages changes proved to be a more satisfactory single explanation. In Table 4-5, both money supply and wage changes perform better in the later period. Since most of the increase comes through the negative coefficients, the sum of the coefficients falls even further short of summing to one in the later period.[17] The better R^2 for the later period would confirm that the 1950-55 price fluctuations were influenced more by bad crops and domestic price controls and less by the stop-start nature of economic expansion.

Equations including all the policy variables plus real supplies were also tested for 1950-71 and 1956 to 1971. While the general picture remains the same, the monetary variables for M_t gain in size and significance in the later period. In particular the coefficient for rural prices, which was .60 and barely significant in Diaz Alejandro's study of the 1950 to 1965 period drops to -.29 and non-significance in the period 1956-1971. While the wage coefficients remain high in the later period, those for W_t shrink enough so that the W_t coefficient for

[17] Only the cost of living coefficients for 1950-71 sum to approximately one.

TABLE 4-5.--Coefficients for Wage and Money Supply Changes as Single Determinants of Price Level Changes

1950-71	M_t	M_{t-1}	M_{t-2}	M_{t-3}	W_t	W_{t-1}	W_{t-2}	W_{t-3}	$\bar{R}^2$	DW	df
WPI	1.13 (.28)	.64 (.26)	- .75 (.26)	- .35 (.28)					.43	1.16	39
COL	.80 (.25)	.63 (.23)	- .30 (.23)	- .21 (.25)					.32	1.02	39
WPI					.71 (.15)	.80 (.15)	- .13 (.15)	- .33 (.15)	.53	1.56	39
COL					.59 (.11)	.74 (.11)	.03 (.10)	- .24 (.11)	.66	1.52	39
1956-71											
WPI	1.17 (.31)	.67 (.28)	- .90 (.28)	- .49 (.30)					.53	1.31	27
COL	.88 (.26)	.67 (.24)	- .47 (.24)	- .34 (.26)					.49	1.11	27
WPI					.78 (.18)	.89 (.17)	- .20 (.17)	- .44 (.17)	.59	1.62	27
COL					.59 (.12)	.79 (.11)	.03 (.11)	- .31 (.12)	.70	1.49	27

Sources: See pages 258-59 of the Statistical Appendix.

wholesale price is non-significant while that for W_t is even more significant. This could reflect the greater weight given in these equations to the period 1967-70 in which employers were restricted in the amount of the price increases they could immediately make in response to higher wages.

The overall picture of the inflationary process that emerges from this analysis lends support to the anti-inflationary policy adopted in the 1967 plan. It seems clear that wages and devaluations were frequently forcing up prices at times when the money supply was not expanding rapidly enough to accommodate these increases. While the money supply responded passively to the need for greater liquidity, the frequent inadequacy of this response tended to be a recessionary force as is indicated by the inverse relationship between money supply increases and rates of price increase a year to eighteen months later. Expectations of future price increases are linked to changes in the government policy variables, and do not have a strong influence on prices that can be seen independently of the impact of these policy tools. This does not argue against expectations as an important inflationary force but in favor of influencing them through manipulation of policy variables.

CHAPTER 5

THE STABILIZATION PLAN OF 1967

The Content of the 1967 Plan

The military regime that assumed power in June of 1966 initially displayed more of a sense of urgency to achieve economic change than a clear economic ideology. For several months this lack of direction was indicated by the presence in government of key economic advisors who represented both the "developmentalist" inward-looking strategy of a managed economy and the "liberals" who espoused a market-oriented, outward-looking policy. In late December, however, the appointment of Dr. Adalbert Krieger Vasena as economics minister signified the ascendancy of the liberal approach. Krieger Vasena almost immediately announced a stabilization program radically different from those previously tried in Argentina. After a discussion of the framework out of which this plan came, its principal measures will be outlined.

The Framework of the Plan

The ability of Krieger Vasena to implement a far-reaching plan of reform so quickly is not surprising when seen in the light of the ongoing discussion of stabilization needs in Argentina. Previous efforts had been widely judged as failures and various alternative schemes had been proposed in the literature. Carlos Moyano Llerena, as the principal spokesman for one group of liberal economists, had consistently proposed a plan that involved a rejection of both the monetarist as well as the structuralist approach to inflation. Vasena employed not only the plan proposed by Llerena but also Llerena's personal services in convincing the business community to cooperate in the plan.[1]

The official measures enacted do not specifically state the supposed causes of the inflation they were designed to correct but the private writings of Moyano Llerena give the rationale for this particular approach to inflation. Llerena was convinced that monetary and structural causes were indeed present in the Argentine inflation but that they were responsible for a relatively minor part, perhaps 5 or 6 per cent out of an average annual rate close to 30 per cent. He attributed the main

[1]Moyano Llerena's commentary on Argentine inflation is contained in the various issues of his publication, Panorama de la Economía Argentina. The stabilization plan at issue was proposed in the Summer, 1966 issue.

to a struggle over income shares between the various
rs of the economy which "provoke large increases in
that are quickly transferred to prices without having
ing to do with either the structure of production or
s demand."[2]

Starting in the nineteen-forties the various
ies of import substitution, high domestic wages,
controls, and promotion of traditional exports
ht about considerable redistribution of income among
arious income groups. Llerena contended that the
ts of the different income groups to reachieve their
ous high levels of real income had turned into a
nent process of redistribution of income which alter-
y benefits one sector at the expense of the others,
hich in the light of the slow rate growth, was
sarily translated into a self-reinforcing inflationary
l.

Each group was able to raise or to bring pressure
ise its income in ways the government found hard to
t. The industrial sector was so highly concentrated
on-competitive that price setting was a gentlemanly
ss with prices moving in only one direction. The
y organized labor movement had frequently threatened
tability of the government itself through strikes and

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[2] Panorama de la Economía Argentina, Fall, 1968,
27-28.

demonstrations that resulted in violence. The fear was always present that if the rural sector did not get the right price, stagnant production would cause domestic food prices to rise and foreign exchange earnings to dwindle. In this conflict, expectations have their impact through the negotiating process as the experience of seeing supposed real income gains dissipated through inflation is translated into demands for higher wage, price and exchange rate increases. The end result of this process is that an enormous amount of effort that would better be used in increasing profits through greater efficiency is wasted in the struggle to avoid losses due to inflation.

The 1967 plan, then, was designed to cure an inflationary spiral attributed to a deeply entrenched struggle over income shares that was heavily reinforced by expectations about future inflation. The program adopted involved an incomes policy designed to put the various income groups into relative positions that could be maintained for at least two years and to dampen inflationary expectations quickly. In contrast to previous efforts, the plan would be a global approach since it would have to attack all sources of income and price increases. The heavy emphasis on the impact of price increases on expectations also meant that the plan would not pretend to be a gradual slowing of inflation nor could it afford to ignore its own impact on the rate of price increase.

The emphasis on relative income shares meant that, again in contrast to previous efforts, neither the country as a whole nor any particular income group was being asked to make real sacrifices. Asking only the renunciation of impossible gains in real income, the plan sought a quick end to inflation without a significant reduction in the level of economic activity.[3]

The rationale for the trade and tariff aspect of the program is reflected more in the statements of Krieger Vasena himself. His initial outline of the policies to be pursued closely mirrors Balassa's critique of an inward-looking strategy:

> One of the worst factors of distortion for the last twenty years has been the high level of tariffs and import duties in order to correct the balance of payments rather than to act as a fundamental weapon in the industrial development policy by correcting the general rise in local production costs. Thus the exporting capacity of the country has been reduced and private investment has been wrongly channeled into activities which are not always in accord with the real needs of the country. At present the overall tariff rate is 119 percent which is a tremendous burden on the whole economy and which cannot be left without revision in any efficiency plan.[4]

In the same report, the basic role of export promotion in the overall strategy is indicated:

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[3] Ibid., p. 130.

[4] "Report to the Inter-American Committee on the Alliance for Progress," Review of the River Plate, February 11, 1967, p. 189. (Hereinafter referred to as the CIAP Report.)

> A means of maintaining demand to ensure the best use of natural resources would be a rigorous promotion of exports helped by a proper exchange rate policy which would avoid the overvaluation of the peso which has lately done so much damage. A simultaneous adjustment of tariff policy would increase the possibility of non-traditional exports abroad.[5]

The external strategy, then, called for tariff and exchange rate adjustments that would begin to eliminate the discrimination of the protective structure among domestic industries and against imports and exports. The goal was to increase domestic efficiency by reducing the prices of imports and reducing the incentive to invest in industries whose domestic costs were particularly high. Lower domestic costs and export promotion measures were to increase the export of domestic manufactures.

The Measures Employed

The Incomes Policy

Given the kind of inflation postulated, the role of the incomes policy was to fix the incomes of various groups in a relationship that could be maintained long enough to stifle inflationary expectations and to shift the basis for future income gains away from anticipated inflation and toward gains in productivity. Quoting the CIAP Report:

> Wage and price policy will be carried out in two stages. In the first it will be necessary to impose guidelines to restrict increases, and thus

[5] Ibid., p. 170.

> eliminate the constant expectation of inflation. Later the market will be left to function without (undue) hindrance. . . .[6]

The problem of the basic relationship to choose was solved not on the basis of an ethical judgment about the "right" distribution of income but by the simply expediency of choosing the average real wage of the last year and expecting businesses to increase prices by slightly less than the increased costs of labor and materials.[7] The essence of measures employed was to institute such a relationship and to add the strong assurance that price stability would be achieved and maintained within this relationship.

The wage policy of the plan was contained in Law No. 17224 of March 31, 1967. It put aside all collective bargaining agreements until December 31, 1968, and announced a schedule of wage increases designed to put the various labor unions on a par with their real income of 1966. Since the annual collective bargaining agreements have fixed dates of renewal spread throughout the year, given the current high inflation, a particular union's real wage would depend on how recently its agreement was renewed. The schedule of wage increases, designed to avoid the burden a total wage freeze would impose on those unions whose agreements were about to come up for

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[6] Ibid.

[7] Panorama de la Economía Argentina, Fall, 1968, pp. 132-33.

renewal, offered a schedule of declining nominal increases through 1967 based on the anticipated rate of inflation. This schedule was as follows:

a) Agreements ending on March 31, 1967, a 24 per cent increase effective April 1.

b) Agreements ending between April 1 and May 31, 1967, a 22 per cent increase, effective April 1, 1967.

c) Agreements ending between June 1 and July 31, 1967, a 17 per cent increase effective May 1, 1967.

d) Agreements ending between August 1 and September 31, 1967, a 12 per cent increase effective May 1, 1967.

e) Agreements ending between October 1 and November 30, 1967, a 3 per cent increase effective May 1, 1967.[8]

This sharply declining schedule of wage increases reflected and communicated the government's assurance that inflation would be substantially checked by the end of 1967.

While the wage rates were decreed by law and strikes prohibited, the poor history of fixed prices in Argentina argued toward a more flexible formula for prices. Searching for an acceptable formula, Krieger Vasena commissioned Moyano Llerena to negotiate with the leading industrialists a plan similar to the one he had previously

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[8] Review of the River Plate, April 11, 1967, p. 9.

proposed in his journal.[9] The initial contacts were made on a semi-official basis in order not to cause a loss of confidence in the stabilization plan, should the discussions fail. The strategy was to turn the heavy concentration in Argentine industry to advantage and, prior to announcing a price agreement, to enlist the support of those firms which were clearly the price setters in the major industries. Having succeeded in gaining support from 100 of the largest firms, the following agreement on prices was announced on May 11, 1967:

a) Each firm would agree to keep its present prices fixed for six months.

b) Uncontrollable cost increases from January 1st or in the future can be passed on with the exception of the first 3 per cent which should be absorbed as the firm's contribution to the plan. This 3 per cent would only have to be absorbed once.

c) Firms with price increases disproportionately high relative to cost increases experienced so far in 1967 should lower their prices before becoming associated with the plan.

d) Price increases in accord with these rules require fifteen days prior notification but not express permission.[10]

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[9] Panorama de la Economía Argentina, Summer, 1966, pp. 97-100.

[10] Review of the River Plate, May 20, 1967, pp. 252-53.

Within a relatively short period of time after the initial agreement with the major firms was announced, adherence to the agreement was so widespread as to effectively cover all of the wholesale manufacturing sector. While the government appeals stressed adherence to the agreement as a patriotic duty, the authorities also indicated that they would favor the firms in the agreement with preferential treatment in government purchasing and in the allocation of bank credit. A lack of compliance that in any way threatened the success of the plan would be dealt with by means of temporary authorization of duty-free imports of the product whose price was judged to have risen excessively.[11]

Monetary-Fiscal Policy

The 1967 plan was undertaken in a period of economic slack. With considerable excess capacity the 1966 gross national product did not increase in per capita terms. Given a strategy of maintaining the level of economic activity while damping inflationary expectations, the monetary-fiscal policies were initially designed more to convince the observer that the government was putting its affairs in order than to have a significant impact on aggregate demand. As in the past, in consultation with the IMF the government committed itself to move toward a

[11] Ibid., p. 253.

balanced budget and to follow a predetermined schedule of credit expansion. In contrast to past experience, the program involved the maintenance of real expenditures and the real money supply.

Despite the recessionary economic conditions, the desire to curtail price expectations and the desire to solicit external financial backing led to a decision to reduce the budget deficit which in 1965 and 1966 had been 2.0 per cent and 3.0 per cent of gross domestic product respectively.[12] The new fiscal program sought to attack the main sources of these deficits through the reduction of government subsidies to state enterprises and increased efficiency in tax collection. Some new taxes were also enacted.

The government operated enterprises were perceived as simply not charging enough to cover costs inflated by a highly redundant labor force.[13] The railroads and the state electrical company were the greatest drains and in January 1967 their rates were raised by 60 and 50 per cent respectively. In its letter of intent to the IMF, the government gave notice that "excess official personnel will be transferred to productive activities after

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[12] Informe Económico, Ministerio de Hacienda y Finanzas, 1969, No. 3, Statistical Appendix, p. 80.

[13] "CIAP Report," Review of the River Plate, February 11, 1967, p. 168.

undergoing training courses."[14] The CIAP Report made it clear that this would be a gradual process in which increased growth in demand would be expected to absorb the labor let go by state enterprises.[15] The immediate expectation was that in 1967 these subsidies would stay the same in nominal terms, representing a real reduction of about 20 per cent.

Overall government expenditures were to rise by 22 per cent (to stay the same in real terms) while income from new taxes and better collection methods were to rise by 60 per cent. The tax changes involved increased taxes on some luxury goods, traditional exports and stock exchange transactions, a new 2 per cent annual tax on outstanding bank loans, and a new 1 per cent tax on the fiscal value of all property. The "better" tax collection methods consisted of penalties for late payment of taxes so high as to make it impossible to gain by waiting for the real tax burden to be diminished through inflation.[16] This combination of tax and expenditure changes was to reduce the deficit to 75 billion pesos or 1.3 per cent of gross domestic product.

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[14] Review of the River Plate, May 10, 1967, p. 193.

[15] Review of the River Plate, February 11, 1967, p. 169.

[16] Review of the River Plate, May 11, 1967, pp. 320-22.

Due to heavy external debt payments that the government had to meet in 1967, this improved tax and expenditure situation would only be partially mirrored in central bank lending to the treasury as new lending would decline from 99 billion pesos in 1966 to 80 billion in 1967 and net total credit would go from 335 to 415 billion, an increase of 24 per cent. Total commercial bank credit would go from 459 billion at the end of 1966 to 553 billion at the end of 1967, an increase of 21 per cent. Clearly then, given the expected rate of inflation, the stabilization plan did not include a tight money policy, but, as happened in 1962-63, rapidly rising prices could easily convert these monetary targets into real constraints on the level of liquidity.

Tariff and Exchange Rate Policy

The plan included a 40 per cent devaluation in large part compensated for by higher taxes on traditional exports and lower tariffs on imports. This combination of measures reflected the multiple goals sought: new tax revenue, more competition from imports, price incentives for manufactured exports and an exchange rate increase that would end speculation without giving a sharp boost to domestic prices.

The tariff reform was designed to transform a tariff structure which had arisen haphazardly through a series of unconnected ad hoc measures into a co-ordinated

policy that reflected the needs of the country. A general lowering of tariffs was decreed with reductions highest on the most heavily protected products as the maximum rate was reduced from 325 to 140 per cent.[17] In assigning the new tariffs, distinctions were made according to three criteria: (1) degree of processing; (2) whether the good is an input, a consumer good or a capital good; and (3) whether the good is produced nationally or not. Table 5-1 gives the ranges of tariffs according to these criteria. The numbers 1 . . . 10 on the horizontal scale indicate the degree of processing. On the vertical scale, one indicates a good that is produced in Argentina and two, a good that is not.

TABLE 5-1. Range of Tariffs After 1967 Tariff Reform

		1 . . . 10
Inputs	1)	40 . . . 130
	2)	5 . . . 40
Consumer Goods	1)	110 . . . 140
	2)	30 . . . 120
Capital Goods	1)	40 . . . 100
	2)	30 . . . 50

Source: Alemann, "La Reforma Arancelaria," p. 203.

[17] Roberto T. Alemann, "La Reforma Arancelaria en la República Argentina," in Hacia Una Tarifa Común en América Latina (Buenos Aires: INTAL, 1969), pp. 195-214.

Consumer goods have the highest tariffs and while inputs produced at home enjoy a higher range of protection than capital goods produced at home, tariffs are lower on inputs not produced at home than for the same class of capital goods.

Alemann estimated that the average tariff, when weighted by imports, was lowered by 20 per cent.[18] A study done by the electrical industry council indicated that for a sample of goods representing one-half of the value of imports, the combined impact of a 40 per cent devaluation and the tariff reduction was to increase the cost of the imports by 26 per cent. This study confirmed the fact that the largest reductions were on the products which were previously subject to the highest tariffs while tariffs lower than 100 per cent received more moderate reductions, if any at all. While the overall cost of imports did rise, the publication Situación de Coyuntura showed that in the short-run the costs of imports of goods produced in the country varied tremendously, some rising by as much as 45 per cent while others fell by 30 per cent.[19] In Chapter 6 we will examine the impact of these differential changes on the structure of protection.

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[18] Ibid., p. 202.

[19] Situación de Coyuntura, No. 8, Centro de Estudios de Coyuntura, Instituto de Desarrollo Económico y Social, Buenos Aires, April, 1967, pp. 12-14.

Measures designed to compensate for the devaluation were much stronger on the export side where the prices of traditional food export products have a strong influence on the cost of living and the wholesale price index. Taxes of 16, 20, or 25 per cent were introduced on the major traditional export products.[20]

The purpose of so large a devaluation was to achieve an exchange rate that could be maintained for a long period and to give the government the opportunity to raise a substantial sum in tax revenue from the agricultural sector without lowering the relative domestic price of rural products. In terms of the trade balance, which had experienced a 469 million dollar surplus in 1966, there was little need of a devaluation, but given the constantly high rate of domestic inflation and foreign exchange reserves that were kept anemic by debt obligations, the import capacity of the economy was not expanding. The combination of trade measures was designed to limit the impact of devaluation on the domestic economy while boosting the stock of foreign exchange through increased earning from the export of non-traditional products and by attracting foreign capital. Though non-traditional exports received the full benefit of the 40 per cent

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[20]International Monetary Fund, Annual Report on Exchange Restrictions, Washington, D.C., 1968, p. 21.

devaluation, they did initially lose subsidies worth 12 per cent of the value of the product. The stimulus to non-traditional exports was greatly strengthened at the end of 1967 when these subsidies were reintroduced along with rebates on income taxes which increased export earnings by another 3.3 per cent of the value of the product.[21]

Long-term capital was to be drawn in on the somewhat nebulous prospects for growth provided by price and exchange rate stability. Short-term capital was to be attracted by the obvious undervaluing of the exchange rate which would encourage the repatriation of speculative capital and provide cheap enough forward exchange rates to let the interest rate differential attract funds.

The Plan in Terms of the Economic Model

An examination of these measures in terms of the model elaborated in the previous three chapters provides some insight into the strategy of the plan as well as its weaknesses.

The goals set forth in the plan flow readily from the situation at the time. The economic picture was one of stagnant growth, rapid inflation and low foreign exchange reserves. In 1966, real per capita income did not increase and wholesale prices rose by 20 per cent.

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[21] Ibid., p. 23.

Even with exports 42 per cent greater than imports, government debt payments and payments arising in connection with the presence of foreign investment caused foreign exchange reserves to decline. Not surprisingly, then, the goals set forth were: (1) price stabilization, initially defined as inflation no greater than that in the industrialized nations; (2) a higher rate of growth, defined as a rate of expansion of gross domestic product of at least 5 per cent a year; and (3) a considerable enlargement of the foreign exchange available to finance this higher growth rate.

The economic characteristics discussed above as well as some institutional constraints operative at the time imposed severe limitations on the policy mix that could be fashioned to achieve these goals. The limited elasticity of the trade parameters meant that expenditure switching policies could not be used to increase the inward flow of foreign exchange. Since the terms of the IMF standby agreement placed an absolute peso ceiling on Central Bank lending, the ability of monetary policy to stimulate demand by increasing the real money supply would be determined by the rate of inflation. Nor could fiscal policy directly be brought to bear on the unemployment and sluggish growth since the resulting budget deficits would supposedly stir up inflationary expectations. Thus, despite the recognition that inflation was proceeding

somewhat independently of the demand impact of monetary-fiscal policies, initially these policies would be used to stimulate aggregate demand only in a marginal way.

Given the economic characteristics and policy constraints, the plan that emerged was an imaginative mix of new policy tools and an unorthodox linking of goals and policy instruments. While government expenditure policies adopted a neutral role, the chief tool used to obtain stable prices was an incomes approach. Seeing the major earning groups as urban wage earners, industrialists and rural land owners, in an attempt to minimize the competitive pressures for higher incomes, the government took upon itself the power either to control or influence strongly the "price" each group received. For the wage groups covered by collective bargaining agreements, this took the form of decreed wage levels. For the industrial producer it was the price agreement and for the rural landowner it was a combination of exchange rate and export taxes. Price stability was to be achieved by limiting the price received by each group and by not allowing any one group to get obviously ahead of another.

The chief instrument employed to bring a short-term improvement in the balance of payments was the compensated devaluation aimed at the short-run capital flow mechanism and at manufactured exports. By conspicuously undervaluing the exchange rate, the hope was that with the

speculative motive rendered inoperative the demand for money would cause considerable repatriation of funds. Over a medium-term period, the steady relative rural prices, the higher earnings for manufactured exports and the long-term capital induced by price stability and growth were to provide a greater inflow of foreign exchange.

To the extent that the compensated devaluation succeeded in inducing a short-term capital inflow and in stimulating manufactured exports, it would also be a major instrument in boosting domestic production. The private capital inflow would provide a source of credit expansion not limited by the IMF agreement yet able to be controlled as needed by the central bank. The export production, coming as it did at a time of excess industrial capacity, would constitute an increase in overall input. The fiscal policies, under the guise of a declining deficit, were also designed to provide an increase in domestic demand and the budget expenditures that did take place were shifted from those with a lower multiplier effect (subsidies to government enterprsies for operating expenditures) to those with a higher multiplier (capital investment projects). Longer term growth prospects were to be enhanced by the more efficient allocation of resources achieved by changes in the structure of

protection and the greater domestic savings built up through the control of inflation.

In terms of the Corden-Hemmings framework, reproduced as Figure 5-1, the economy was seen as being located at point Q, well short of full capacity point D. With the control of inflation assigned to an incomes policy more than to a change in the real level of expenditures, the foreign exchange gained from the short-term capital inflow and higher manufactured exports was to increase the import capacity from M toward L. This would allow as much of a move from Q toward D on the income expenditure line as the production measures would permit.

The reference to the Corden-Hemming analysis serves to illustrate both the principal advantages and disadvantages of the overall policy mix. The uniqueness of the plan was the way in which it took into account the characteristics of this economy, particularly the trade elasticities and the inflationary mechanism. Thus, the close relationship between imports and production is taken into account with a planned increase in imports and moves toward full employment are expected to take place along OT. The fact of inflation was not seen as an indication that the economy was located beyond the full-employment point, H, and thus the planned credit expansion meant that the decreed wage increases would not result in a decline in the level of liquidity. The compensated devaluation

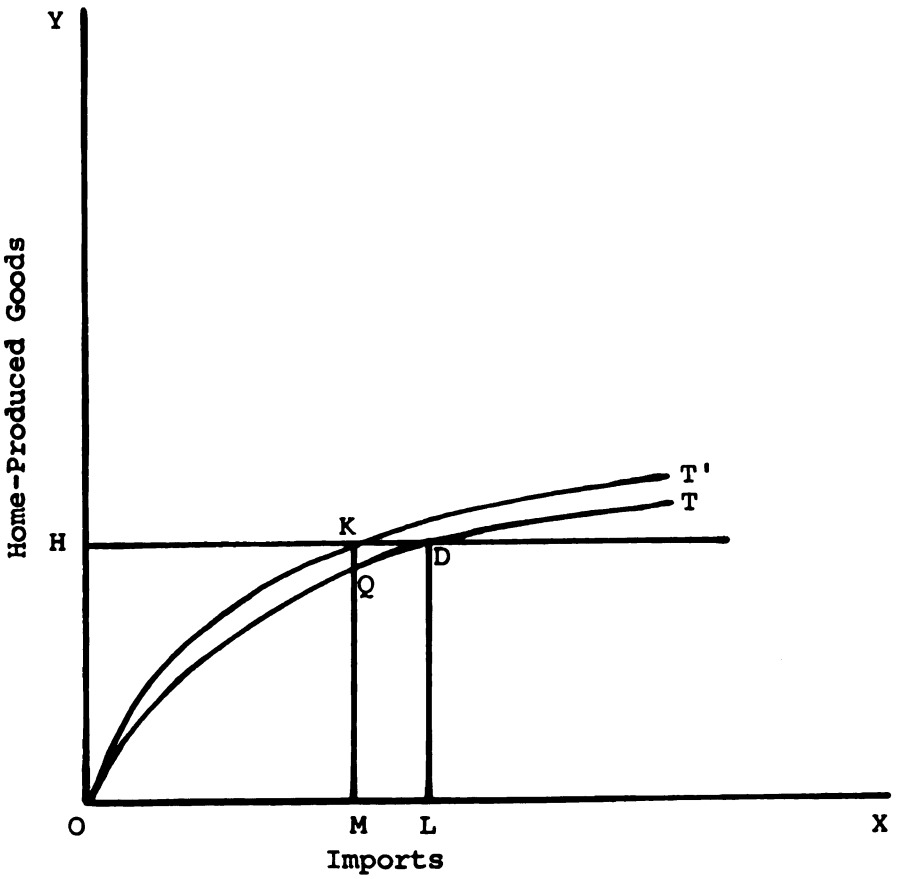

Figure 5-1.--C-H Diagram B

utilized the speculative mechanism to bring home capital funds and saw the inelasticity of the supply of traditional exports as a source of fiscal revenue.

Despite this imaginative attempt to deal with the various policy constraints, the conception of the plan had some serious limitations. Due to the acceptance of the restrictions on monetary-fiscal policy, the instruments relied on to stimulate short-term growth contained no real promise of success. If foreign investment is attracted by growth, Argentina's 1966 performance was a poor advertisement. Furthermore, in that year, exports of manufactures constituted only about 2 per cent of total value added in manufacturing, indicating that manufactured exports would have to increase enormously to offer any real stimulus to domestic product.[22]

The major weakness, however, was a lack of flexibility built into the plan from the start. The devaluation was billed as the last devaluation and its ability to draw in short-term capital could neither be predicted nor repeated; the attempt by the price agreement to fix relative prices worked against the improved resource allocation sought through changes in the structure of

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[22]The failure of the initial policy measures to provide any real stimulus to production was commented on at the time in Situación de Coyuntura, Instituto de Desarrollo Económico y Social, April, 1967, p. 46. De Pablo also stresses this point. J. C. de Pablo, Política Antiinflacionaria, pp. 66-72.

protection, and finally, the budget balance was partially based on export taxes which would have to be yielded if inflation eroded the ratio of agricultural to industrial prices. This complex of measures fixed much of economic policy for the coming years and left the government very little flexibility to deal with inflation arising from any other source than its own policy variables. Should inflation get going for any other reason, the fixed wages would quickly cause a redistribution of income away from the working class; the budget deficit would expand as taxes on traditional exports were lowered; and as soon as the exchange rate came into question, short-term capital would be rushed out of the country in anticipation of another substantial devaluation. The overall plan was a neatly constructed master plan which bet a great deal on its own success.

CHAPTER 6

THE IMPACT OF TRADE POLICIES DESIGNED TO OPEN THE ECONOMY

Introduction

In addition to the short-term stabilization goals, the 1967 plan aimed to bring a reversal of the inward-looking growth strategy. The measures employed to open the economy to trade were outlined in Chapter 5 and here the results achieved are presented and analyzed. After a description of the methodology employed, the changes affected in the different forms of discrimination are discussed. Argentina's inward-looking growth strategy has been characterized by three forms of protective discrimination: (1) in favor of production in some industries with import-competing industries favored relative to export industries; (2) against imports and in favor of home production; and (3) in favor of production for domestic use and against exporting.[1] Changes in the levels of discrimination among industries are measured

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[1]Balassa, "Growth Strategies in Semi-Industrial Countries," p. 25.

by rates of effective protection. To get at the extent of discrimination against imports in import-competing industries and of exports of traditional primary products, we have calculated net rates of effective protection by adjusting our effective rates for the degree of over-valuation of the exchange rate due to protective measures. Last, in protected manufacturing industries, we have measured the degree of discrimination against exports and in favor of production for domestic use by comparing the ratio of value added in domestic production to that available in production for export. Since this type of discrimination was lowered by a combination of subsidies and exchange rate adjustment, the appropriateness of such measures has been tested with a regression analysis of the price responsiveness of manufactured exports.

Measuring Effective Protection in Argentina

In discussing different meanings that can be given to the rate of protection, Corden distinguishes the utilized rate of protection from the available rate.[2] While the utilized rate can be seen as "the proportional divergence at the margin between the domestic supply price and the foreign supply price," the available rate is the

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[2]W. M. Corden, The Theory of Protection (Oxford: Clarendon Press, 1971), pp. 21-23.

maximum price increase allowed to the producer by the tariff.[3]

In Figure 6-1, assuming that the supply of imports is infinitely elastic at price L, then LL' represents the supply of imports of the product, DD' is domestic demand and SS' is domestic supply. At the free trade price, OL, OG of domestic consumption would be produced domestically while GB would be imported. The imposition of a tariff of JL/OL would be sufficient to eliminate all imports while one of ML/OL would introduce some "water" into the tariff. Assuming that the domestic price were only OJ even though the tariff would allow a price of OM, ML/OL would be the available rate of protection and JL/OL would be the utilized rate. Since it is the utilized rate that determines the impact of the tariff on production, this is the nominal rate that should be used in the effective protection formula.

In the case of Argentina where there is a great deal of "water" in the tariffs, particularly those for final products, making use of available nominal protection with which to measure effective protection will yield rates much higher than those obtained with utilized protection. If the "water" in the tariff varies between industries, the ranking of domestic industries by utilized effective protection can differ from a ranking by

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[3] Ibid., p. 22.

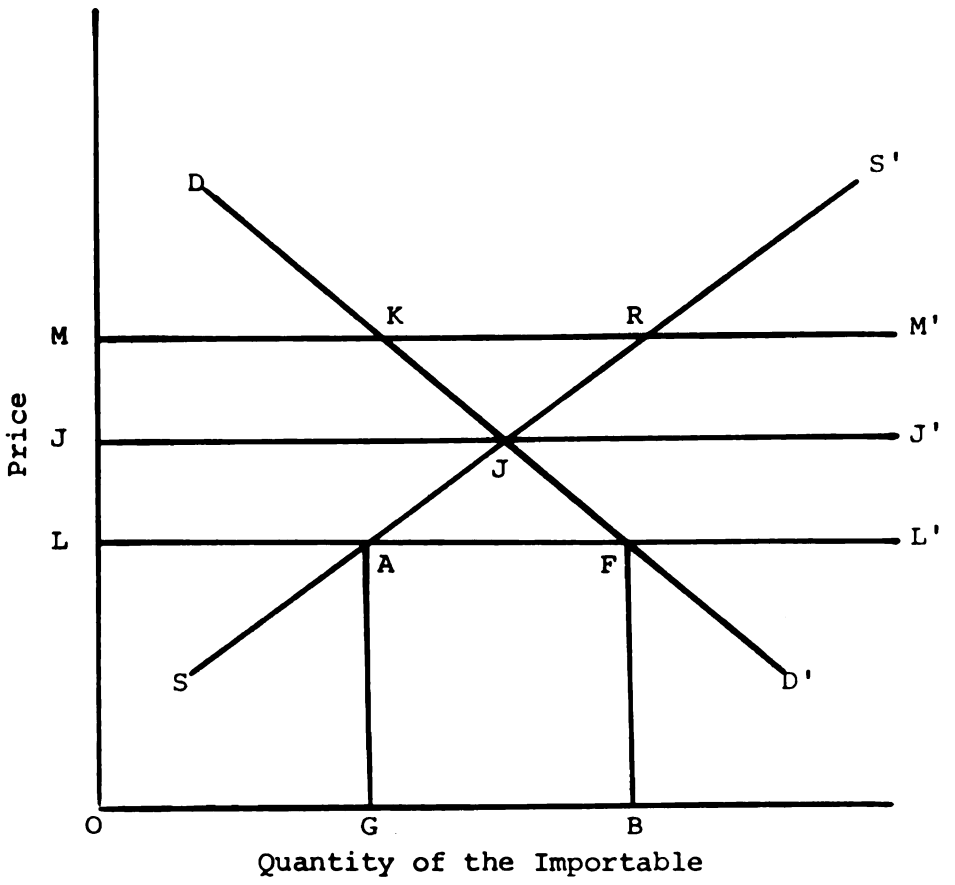

Figure 6-1.--Utilized vs. Available Protection

available effective protection. Thus, for Argentina, to see the true impact of the structure of protection on the domestic allocation of resources, it is necessary to deal with utilized protection.

Time series for rates of effective protection computed on the basis of utilized protection have been estimated by Loser for the years 1939-68.[4] Using a methodology similar to that of Loser, we have computed rates of effective protection for the years 1966, 1968 and 1970. Since Loser gives neither the basis for his computation of different tariff rates for inputs and final products nor the rates themselves, it proved impossible to link rates for 1970 with his rates for 1966 and 1968. Here we describe the method used in the estimation of our rates and their conversion into rates of net effective protection.[5]

If the implicit rate of protection is understood as the difference between the domestic and external prices

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[4]Claudio Loser, "The Intensity of Trade Restrictions in Argentina, 1939-1968" (unpublished Ph.D. dissertation, The University of Chicago, 1971).

[5]The technique for the computation of effective protection is Loser's with the modification that the same nominal tariff is used for an industry regardless of whether its output is treated as a final good or an input.

of comparable commodities, the domestic price of a traded good can be expressed as follows:[6]

$$P_i = W_i R (1 + t_i) \qquad (1)$$

where

P_i is the domestic price of good i,

W_i is the world price of good i,

t_i is the tariff equivalent to all trade policies affecting good i and

R is the overall exchange rate.

When the rest of the data are available, the nominal tariff can be calculated by means of this same formula expressed as follows:

$$1 + t_i = \frac{P_i/W_i}{R} \qquad (2)$$

Thus the nominal tariff plus one is the ratio of the domestic price of the good to the world price over the exchange rate. Given the difficulty in specifying the world price of goods, United States prices are used as a proxy for the world trade alternative. Over time the exchange rate will take account of the differential rate of inflation in the United States and Argentina. The

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[6]Relative implicit exchange rates have been employed to estimate the degree to which the terms of trade for Pakistan were shifted against agriculture. See Stephen R. Lewis, Jr., "Effects of Trade Policies on Relative Prices: Pakistan, 1951-1964," American Economic Review, LVIII, No. 1 (March, 1968), 60-78.

exchange rate we would prefer to use is the ratio of deflators of gross domestic product for the two countries since this measure would gauge changes in the implicit price ratio for a traded good relative to the ratio for all goods and services. Because the data for this ratio are not available for all years, we have used instead the ratio of wholesale prices.[7] The changes in these two ratios tend to be quite similar and indeed between 1966 and 1968 they were identical. The nominal rate of protection is defined then as follows:

$$N_i = \frac{P_i/W_i}{\overline{P}/\overline{W}} - 1 \qquad (3)$$

where

N_i = nominal rate of protection of good i,

P_i = Argentine wholesale price of good i,

W_i = U.S. wholesale price of good i,

$\overline{W}$ = U.S. wholesale price index and

$\overline{P}$ = Argentine wholesale price index.

Nominal rates of protection were calculated by comparing Argentine and U.S. wholesale price indexes which correspond to the categories of the Argentine

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[7]Argentine import prices could not be used since they are available for only 6 of the 15 industries considered. This measure does not take into account transport costs for which the data are not available. Since doing so would lift U.S. prices, it would lower nominal rates of protection.

input-output matrix. This measure was used to give changes in protection relative to the base year 1960 in which the exchange rate was at or near equilibrium and for which Medina has estimated nominal rates of protection on the basis of average tariff rates weighted by imports.[8] Making use of the official input-output matrix updated from 1953 to 1960, effective rates of protection, F_i, were computed according to the Corden method with the following formula:

$$F_i = \frac{P_i - \Sigma_j A_{ji}}{\frac{P_i}{1+N_i} - \Sigma_j \frac{A_{ji}}{1+N_j}} \qquad (4)$$

where the symbols are the same as above except that

A_{ji} = the domestic value of input j per unit of output i.

According to a methodology described by Bela Balassa,[9] our effective rates were corrected for the overvaluation of the exchange rate due to the existence of trade restrictions. If tariffs were restricting imports and subsidies were encouraging exports, balance of trade equilibrium would be attainable at an exchange

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[8] On page 23, Loser cites the following reference: Juan Medina, "Estructura tarifaria, protección nominal y protección effectiva" (unpublished Ph.D. dissertation, Mendoza, Argentina, 1967).

[9] Bela Balassa and Associates, The Structure of Protection in Developing Countries (Baltimore: Johns Hopkins University Press, 1970), pp. 324-31.

rate higher (dollars per peso) than would bring equilibrium under free trade conditions. The free trade rate would then yield higher levels of world trade value added and thus lower rates of effective protection. The computation of the free trade equilibrium exchange rate theoretically involves two steps. In the first, it is assumed that the tariffs and subsidies are removed and, using the relevant trade elasticities, the resulting trade deficit is calculated. In the second step the size of the devaluation necessary to restore trade equilibrium is calculated and the percentage devaluation necessary indicates the degree of overvaluation. Since the two formulas contain the same elements, the two steps can be calculated as one by means of the following formula:[10]

$$\frac{R'}{R} = \frac{\varepsilon_f X + \eta_m M}{\frac{\varepsilon_f X}{1+S} \quad \frac{\eta_m M}{1+T}}$$

These symbols are explained below and the data for 1966, 1968 and 1970 are in parentheses:[11]

[10] Ibid., p. 328.

[11] The elasticity of import demand is our own estimate from p. 60 of Chapter 3. The elasticity of export supply is calculated on the basis of the domestic demand and supply elasticities treated in Chapter 3, pp. 72-78. For the elasticity of export supply formula, see M. E. Kreinin, International Economics: A Policy Approach (New York: Harcourt Brace Jovanovich, Inc., 1971), p. 354. We assume that the rural sector alone exports. The ratio of exports to output in this sector is approximately .33.

		1966	1968	1970
R'	= free trade exchange rate	(220.0)	(366.6)	(388.6)
R	= exchange rate with protection	(198.4)	(350.0)	(379.0)
X	= exports	(1,593)	(1,368)	(1,773)
M	= imports	(1,124)	(1,096)	(1,685)
S	= level of subsidies	(-1.7%)	(-8.9%)	(-8.3%)
N	= level of nominal t tariffs (calculated from prices)	(30.0%)	(23.0%)	(15.4%)
η_m	= elasticity of import demand		(.45)	
ε_f	= elasticity of supply of foreign exchange which is obtained by the formula		(.38)	

$$\varepsilon_f = \frac{\varepsilon_x (\eta_x - 1)}{\varepsilon_x + \eta_x}$$

where

ε_x	= elasticity of export supply	(.44)
η_x	= elasticity of export demand	(10)

Exports and imports are in millions of dollars. The subsidy rate is a weighted average of negative subsidies (taxes) to primary products and positive subsidies to manufactured products in which the weights are the percentage shares of total exports. The nominal tariff rates are the weighted average of Loser's figures with

percentage shares of total imports as the weights. In accordance with the discussion in Chapter 3, the elasticity of export supply selected, 10, is very high but less than infinity.

Once the free trade exchange rate is estimated, net effective protection is calculated by adjusting the rates obtained at the implicit exchange rate for its overvaluation due to the existence of protection measures. In the absence of trade restrictions, balance of trade equilibrium would require a devaluation which would raise the domestic prices of importable goods and the implicit exchange rate with them. The actual adjustment is based on formula (1) applied to value added where the domestic price of value added is defined as the world price times the product of the implicit exchange rate and the effective rate of protection. In the absence of trade restrictions, the domestic price will equal the international price times the free trade exchange rate:

$$P_{iv} = W_{iv} R (1+F_i) \quad (5)$$

$$P'_{iv} = W_{iv} R' \quad (6)$$

where

P_{iv} = the domestic price of value added of good i,

W_{iv} = the international price of value added of good i,

F_i = the effective rate of protection of good i

and the prime designates a free trade value.

Dividing equation (5) by (6), we get

$$F_i' = \frac{P_{iv}}{P_{iv}'} - 1 = (1 + F_i) \frac{R}{R'} - 1 \qquad \text{or}$$

$$F_i' = \frac{R\ (1 + F_i)}{R'} - 1.$$

Changes in Levels of Discrimination

Discrimination Among Domestic Industries

Changes in the ranking of industries by rates of effective protection will indicate shifts in the extent to which production in one industry is favored at the expense of another. Table 6-1 gives our effective rates of protection for 1966, 1968 and 1970 together with their relative ranking in those years. The tendency in developing countries has been for manufacturing to be favored at the expense of primary industries.[12] Weighting the rates for 1966 by domestic value added the expected structure appears as the rate for domestic non-food manufacturing is 43.9 per cent and that for agriculture and food is minus 3.1 per cent. The same relationship is apparent if we divide the goods producing industries on the basis of

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[12]Balassa, The Structure of Protection, p. 58.

TABLE 6-1.--Effective Rates of Protection, 1966, 1968 and 1970

	Effective Protection			Ranking by Effective Protection		
	(1966)	(1968)	(1970)	(1966)	(1968)	(1970)
Weighted Totals						
1) Manufacturing	35.0	29.2	22.3			
2) Manufacturing (except food)	43.9	34.6	22.1			
3) Food and agriculture	- 3.1	3.7	11.1			
1) Export goods (E)	- 3.1	3.1	10.2			
2) All import competing goods	45.9	36.5	23.5			
3) Import competing-resource limitation (ICRL)	- 2.6	- 7.3	- 9.2			
4) Other import competing (IC)	59.6	48.9	32.7			
1. Stone, clay and glass (IC)	107.4	87.5	62.5	1	1	1
2. Textile products (IC)	75.4	61.5	50.5	2	2	2
3. Vehicles and machinery (IC)	58.8	39.1	21.8	3	4	6
4. Electrical products (IC)	46.5	29.5	20.5	4	7	7
5. Chemical products (IC)	44.1	59.8	50.4	5	3	3
6. Paper and paperboard (IC)	43.6	33.5	32.5	6	6	4
7. Metals (IC)	37.7	34.0	10.8	7	5	9
8. Apparel (IC)	20.0	7.1	- 2.1	8	9	13
9. Leather products (E)	- 1.4	- 3.8	- 0.5	9	12	12
10. Petroleum products (ICRL)	- 1.9	-11.7	-15.5	10	14	14
11. Agricultural Products (E)	- 2.8	3.0	6.9	11	11	10
12. Wood products (ICRL)	- 3.7	- 8.0	11.3	12	13	8
13. Food and beverages (E)	- 3.8	5.7	23.1	13	10	5
14. Rubber products (ICRL)	- 5.3	17.3	2.8	14	8	11
15. Tobacco (E)	- 12.8	-42.4	-55.6	15	15	15

whether they produce export or import-competing type goods with a rate of 45.9 per cent for import type goods and minus 3.1 per cent for export type goods. The contrast is all the stronger if we remove those import type intermediate products such as rubber, wood and petroleum in which Argentina does not have an adequate resource base for extensive import substitution. All natural rubber is imported; Argentina is heavily import dependent for most types of wood and the domestic petroleum deposits lack the ingredients for many petroleum derivatives. The weighted average of effective protection rates for these products, at minus 2.6, is just above that for export type products and without them the weighted average of import type manufactured products rises to 59.6 per cent.

Given this structure, the rates and their rankings in Table 6-1 demonstrate the impact of the plan measures on domestic resource allocation. The most striking change came in the higher ranking of export type goods which went from just below the import type goods which lack a strong resource base to well above them in 1970. While agricultural products only improved their ranking from 11th to 10th, food and beverages rose from 13th to 5th. Although the tendency was strongly upward for export products as a whole, the rankings for non-food exports either stayed the same (tobacco) or fell (leather).

For import competing goods, the general tendency was for rankings to fall as industries accounting for 64 per cent of all value added in the production of import competing goods had lower relative rankings while those whose rankings rose accounted for only 19 per cent and the rest were constant. The exceptions, wood, paper, chemicals and rubber, were the industries that had become the most likely prospects for import substitution. With the import basket consisting largely of intermediate products and capital goods, the products of these four industries, which made up 27.4 per cent of imports in 1966, are among the least capital intensive of those on which Argentina is still heavily import dependent. Of the other seven import competing industries, the two industries that rank one and two overall, stone, clay and glass and textiles, maintained their relative positions and the five others (apparel, petroleum, metals, vehicles and machinery and electrical products), had relatively lower rates of effective protection.

By looking at the specific factors that have modified the implicit rates of protection for individual industries, the influence of changes in U.S. prices and of the Argentine price agreement and devaluation are easily observed while the tariff reform seems to have played a very minor role.

The intent of the price policy was to keep relative prices stable and to the extent that it succeeded all changes in implicit protection would have been due to world price changes. The protective changes that did take place were largely due to world price changes in the face of domestic relative price stability and to the differential impact of the price stabilization measures. Table 6-2 presents the Argentine and world price ratios of manufacturing to primary prices. From 1966 to 1968, the increase in domestic agricultural protection was produced more by the rise in the world ratio than by the slight decline produced in the Argentine ratio by the compensated devaluation. Thus, though the domestic ratio of manufacturing to agricultural prices declined only 3 per cent between 1966 and 1968, the fact that the same ratio of world prices rose 5 per cent during this period produced higher levels of protection for agricultural products. In the case of food, the higher ranking rose from a combination of lower than average U.S. food price increases and, with the domestic price agreement not applying to food products, higher than average Argentine price increases. From 1968 to 1970, the bulk of the higher protection for agricultural products was generated by more rapidly rising relative prices for these products in Argentina as the lack of price-control pressure allowed domestic processors to increase their prices much more rapidly than was called for by the higher costs of raw agricultural products.

TABLE 6-2.--Argentine and World Terms of Trade Between Industrial and Agricultural Products

Year	(1) (Argentina) Ratio of Non-rural Domestic to Rural Prices	(2) (World) Ratio of Manufacturing to Primary Prices	(3) Ratio of (1) to (2)
1965	1.00	1.00	1.00
1966	1.03	1.02	1.01
1967	1.00	1.06	.94
1968	1.00	1.07	.93
1969	.96	1.06	.91
1970	.87	1.08	.80
1971	.76	1.08	.70
1972	.67*	1.03	.65

Sources: Column (1): Various issues of Bóletin de Estadística. In order to make it comparable with the index for world manufactures, non-rural domestic prices are exclusive of food.

Column (2): Various issues of the United Nations' Monthly Bulletin of Statistics. Note that columns (1) and (2) contain somewhat different product mixes in that the Argentine rural price index does not include mining products.

*This figure is based on averages for the first 11 months of 1972.

For the non-food manufacturing sector the crucial factor seems to have been the impact of the price agreement which was entered into by all the firms except the rubber companies. Thus, between 1966 and 1968, non-food manufacturing prices rose 32.3 per cent while the overall wholesale price index rose 37.6 per cent. From 1968 to 1970 these figures were 10.7 per cent and 20.9 per cent respectively. Potential import competition played its part not so much through relative import prices which on the whole were slightly higher for these products, but through the threat of duty-free imports of products whose prices were clearly out of line with the price stabilization policies. In the case of metals between 1968 and 1970, the much lower ranking of effective protection stemmed from a much higher than average increase in the U.S. price, causing the measured nominal rate of protection to decline.

Omitting the export industries as strongly influenced by non-price factors, the changes in these ranking clearly influenced the domestic allocation of resources. Though the physical volume of production according to the categories of the input-output matrix has not been published for 1970, the evidence for the 1966-68 period is very strong. Over this span, as can be seen in Table 6-3, manufacturing production increased faster than the overall average for manufacturing in every industry

TABLE 6-3.--Impact of Effective Protection Rankings on the Physical Volume of Production

	% Change in Physical Volume of Production
1966-1968	
Total for manufacturing	8.3
Manufacturing industries with higher effective protection ranking	
Chemical products	10.0
Rubber products	13.5
Metals	14.4
Manufacturing industries with lower effective protection ranking	
Apparel	- 1.0
Wood products	- 1.1
Paper and paperboard	- 2.5
Petroleum products	0.8
Vehicles and machinery	
Vehicles	6.1
Machinery	0.0
Electrical products	6.7

Source: Origen del Producto y Distribución del Ingreso--Años 1950-1969, Supplement to BCRA, Bóletin Estadístico, January 1, 1971.

in which the ranking by effective protection rose and slower than the average in every industry in which the ranking declined.

Our conclusion, then, regarding the impact of effective protection shifts on the domestic allocation of resources is that the changes that occurred were only partially the design of policy. Changes in relative rankings and in the ratio of rural to industrial prices indicate a lowering of the degree of discrimination against agriculture and in favor of manufacturing. In this way, price incentives for an allocation of resources more in line with Argentina's comparative advantage were strengthened. Between 1966 and 1968, the lowering of discrimination can be said to have been policy-induced since it was the combined result of the voluntary price agreement and the manipulation of rural prices through devaluation and export tax changes. Between 1968 and 1970, however, the higher domestic prices of rural products were the result of higher world meat prices and unanticipated domestic shortages.

Granted that the relative rankings moved in the desired direction, it was some time before they began to produce the expected reallocation of resources. Within the manufacturing sector the higher effective protection rankings brought higher production in intermediate products, suggesting the continuance of the import

substitution strategy. Prior to 1970, the increase in effective protection for food and beverages came largely from the fact that the omission of food processors from the price agreement allowed them to raise their prices much faster than the average. With higher relative prices, the demand would most likely not absorb a greatly increased supply. The higher effective protection for agricultural products resulting from the changing world ratio of rural to manufacturing prices did not affect the domestic supply of these products but with higher relative domestic prices for cattle beginning in 1970 and for grains beginning in 1972, after the expected production lags, output of both types of rural products soared in 1973.

Net Discrimination Against Exports and Imports

Converting these figures to rates of net effective protection gives the degree of discrimination against imports in import-competing industries and against exports in export industries. As was shown on page 148 above, we have calculated the overvaluation of the exchange rate due to the existence of trade restrictions as 11.0 per cent in 1966, 4.7 per cent in 1968 and 2.9 per cent in 1970. These relatively low figures are due to the fact that since tariffs on imports are partially compensated for by export taxes, then dropping all trade restrictions would mean increases in imports and exports. The existing over-valuation is due to the fact that with higher taxes on

imports and with a greater price elasticity for the demand for imports than the supply of exports, the removal of trade restrictions would bring a greater increase in imports than in exports. The decline in the overvaluation between 1966 and 1968 was caused by the combination of a decline in import taxes and a boost in export taxes while the decline between 1968 and 1970 was due solely to lower import taxes.

Table 6-4 contains rates of net effective protection for the individual industries as well as various weighted averages. The picture that emerges is one of discrimination against exports in export industries declining steadily over the whole period, while discrimination against imports in import-competing industries stayed constant between 1966 and 1968 and declined between 1968 and 1970. Thus the rate of net effective protection for all exports, dominated by food and agricultural products, went from minus 12.8 per cent in 1966 to 7.1 per cent in 1970. For import-competing goods, with the overall rate at close to 31 per cent in 1966 and 1968 and dropping to 20 per cent in 1970, the decline was due entirely to goods that lend themselves more to import substitution with their rate falling from 43.6 per cent in 1966 to 42.2 per cent in 1968 and 29.0 per cent in 1970.

The weather and the low price elasticity of supply of rural products blur the connection between

TABLE 6-4.--Net Effective Rates of Protection, 1966, 1968 and 1970

		1966	1968	1970
1.	Food and beverages	-13.4	0.9	19.7
2.	Tobacco	-21.5	-45.0	-56.8
3.	Textile products	57.9	54.2	46.3
4.	Apparel	8.0	2.3	- 4.8
5.	Wood products	-13.3	-12.1	8.2
6.	Paper and paperboard	29.2	27.5	28.8
7.	Chemical products	29.7	52.6	46.2
8.	Petroleum products	-11.7	-15.6	-17.8
9.	Rubber and products	-15.0	12.0	- 0.1
10.	Leather products	-11.3	- 8.1	- 3.3
11.	Stone, clay and glass	86.7	79.1	58.0
12.	Metals	23.9	27.8	7.7
13.	Vehicles and machinery	42.9	32.8	18.4
14.	Electrical products	31.9	23.7	17.1
15.	Agricultural products	-12.5	- 1.6	3.9
Weighted Totals				
1.	Manufacturing	21.5	23.4	18.9
2.	Manufacturing (except food)	29.5	28.5	18.7
3.	Food and agriculture	-12.8	- 1.0	8.0
1.	Exports goods (E)	-12.8	- 1.5	7.1
2.	All import competing goods	31.3	30.4	20.0
3.	Import competing--resource limitation (ICRL)	43.6	42.2	29.0
4.	Other import competing (IC)	-12.3	-11.5	-11.7

discrimination and rural exports. However, despite the low price elasticity of demand for imports, changes in rates of discrimination against imports were reflected in the level and composition of imports. The normal expectation is that a decrease in net effective protection will reduce the incentive to import substitute for a good and will bring a higher import/consumption ratio.[13] Based on constant peso figures, column (1) of Table 6-5 indicates that from 1966 to 1968, the import/consumption ratio, like the rate of net effective protection of import-competing goods, hardly changed at all. Between 1968 and 1970, however, with a decline in net effective protection, the ratio rose from .09 to .10. For individual industries, changes in net effective protection explain the variation in the import-consumption ratio. Of the fourteen cases from Table 6-5 where we can compare changes in net effective protection and the import-consumption ratio, in nine they move in opposite directions and in three of the others (wood, metals and stone, clay and glass between 1966 and 1968) both changes were quite small. In no case did the two figures experience a significant change in the same direction.

On the basis of these rates and the increases in the Argentine ratio of rural to manufacturing prices since

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[13]Domestic consumption is calculated as the ratio of imports to home production minus exports.

TABLE 6-5.--Ratios of Imports to Consumption

Year	(1) Total Economy (1960 Pesos)	(2) Wood Products	(3) Paper and Paper-board	(4) Chemical Products	(5) Rubber Products	(6) Stone, Glass and Clay Products	(7) Metals and Metal Products	(8) Vehicles and Machinery	(9) Electrical Products
1966	.092	.374	.500	.360	.287	.076	.333	.399	.204
1967	.090	.358	.519	.384	.257	.071	.350	.401	.189
1968	.090	.384	.538	.382	.222	.059	.315	.394	.242
1969	.104	.374	.571	.394	.193	.066	.372	.448	.291
1970	.100	.346	--	.385	--	.064	.378	.453	.259
1971	.104								

Sources: Columns (1)-(4), and (7): Based on data from Informe Económico, 1971, #4, Statistical Appendix, pp. 4 and 10; CONADE, Distribución del Ingreso y Cuentas Nacionales en la Argentina, Buenos Aires, 1965; and various issues of Bóletin de Estadística and Comercio Exterior.

Columns (5), (6), (8), and (9): Same as for (1)-(4), and (7) except for U.S. wholesale price indexes taken from various issues of Department of Commerce, Survey of Current Business.

1970, the level of discrimination against traditional exports has declined steadily and by 1973 had begun to affect rural production and exports. The level of discrimination against imports in import-competing industries declined noticeably between 1968 and 1970, and though the change in the import/consumption ratio was slight, it signified a move toward greater import competition. In late 1971, however, when the loss of foreign exchange began to threaten the capacity to import, the substantial tariff and non-tariff restrictions which were instituted raised the level of discrimination against imports in 1972. Relative to the first three quarters of 1971, the comparable figures for 1972 suggest a declining import/consumption ratio as dollar imports fell 4 per cent despite the inflation experienced by Argentina's chief trading partners.

In discussing changes in the structure of protection between 1966 and 1970, three measures have been employed:

(1) rates of effective protection
(2) the ratio of the Argentine to the world terms of trade between primary and manufactured products
(3) import/consumption ratios

The terms of trade and the import/consumption ratios all support the conclusions suggested by the rates of

effective protection. On the import side there was some reduction in the bias against imports in import-competing industries between 1968 and 1970, though with little impact on the import/consumption ratio. Given that another feature of the plan was to maintain or increase employment as workers in inefficient state enterprises were transferred to the private sector, this was not a time in which the authorities were going to allow a flood of imports great enough to have a noticeable effect on domestic employment. With the sluggish price responsiveness of the rural sector, the steady decline in discrimination against exports did not significantly affect production and trade until 1973.

Discrimination Against Exporting and in Favor of Domestic Production

In estimating the third form of bias, that against exporting and in favor of domestic production, adjustment for the overvaluation of the exchange rate due to existence of trade restrictions is not a concern since the comparison is between two types of domestic value added. This bias, Z_i, is the ratio of the percentage excess of domestic value added in import substituting over that in exporting:[14]

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[14]Balassa, The Structure of Protection, p. 332.

$$Z_i = \frac{[P_i - \Sigma A_{ji}] - [(\frac{P_i}{1+N_i} + S_i) - \Sigma A_{ji}]}{(\frac{P_i}{1+N_i} + S_i) - \Sigma A_{ji}}$$

where

S_i = the sum of all export subsidies minus the sum of all export taxes on product i

This bias will exist to the extent that the subsidy for exporting, S_i, does not cover the difference between the domestic price, P_i, and the world price, $P_i/1+N_i$.

In the actual measurement of the bias, the main difficulty was in determining the total subsidy for an industry arising out of several different measures which boost the price obtained for export sales. The principal types of subsidy were:[15]

(1) a drawback scheme designed to refund import taxes on imported inputs

(2) subsidies designed to overcome higher costs due to internal taxes

(3) exchange rate policies which affected the prices received for manufactured exports without altering their domestic prices.

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[15]The range of export promotion measures are described in Ministerio de Economía y Trabajo, Cómo Exportar, Secretaria de Estado de Comercio Exterior, 1970, pp. 23-32.

The drawback scheme had been in effect since 1960 and allowed individual producers to petition the National Board of Industry to determine the cost of necessary imported inputs relative to the overall cost of production and to fix the size of the drawback. Since drawbacks involve a fairly small sum, the assumption has been made that each industry paid the average nominal tariff on its imports and the drawback was determined by multiplying this tariff by the import coefficient for the particular industry.

The other direct subsidies came in two forms. According to the first, for the great majority of manufactured exports a certain percentage of the f.o.b. price was paid to the producer. In 1966, these subsidies were 6, 12, or 18 per cent depending on the degree of processing of the product. After being discontinued at the time of the March, 1967 devaluation, a 12 per cent subsidy was restored at the end of the year for a slightly different set of products. The second direct subsidy was also inaugurated at the end of 1967 and gave the exporters of these designated manufactured products a reduction in their income tax liability of 10 per cent of the value of these promoted exports. Since the average tax is about one-third of the tax liability, the overall subsidy has been increased by 3.3 per cent to take account of this measure.

Between 1966 and 1968, however, the principal stimulus to exports came through exchange rate changes which far exceeded the rate of increase of domestic prices. Measures that influence the bias against exports through changes in domestic price indexes are captured by Loser's rates of nominal protection. Where the price of good i rises faster than the price index for all goods, nominal protection is increased and the ratio of value added in domestic production to that in exporting will rise. But what Loser's figures do not capture are deviations of the overall implicit exchange rate from the actual exchange rate received by exports. Since in 1959 there had been a substantial devaluation as the exchange rate was freed to find its own level, 1960 was taken as a base year in which there was no exchange rate discrimination against exports. The subsidies were adjusted by the difference between the implicit and nominal exchange rate arising since 1960. With a subtraction of 27.0 per cent in 1966 and of only 3.5 per cent in 1968, between these two years export earnings for manufactured products got a substantial boost from the exchange rate. By 1970, the subtraction had risen to 6.7 per cent, somewhat lowering the exchange rate stimulus.

Of the three types of protective discrimination, the bias against production for export experienced the

greatest reduction. The rates of bias and the overall subsidies for 1966, 1968 and 1970 are contained in Table 6-6.

Between 1966 and 1968 most of the impetus given to increasing exports came from the 40 per cent devaluation which was compensated for only in the case of traditional rural products. Since the drawback scheme remained unaltered and subsidies amounting to about 15 per cent were eliminated at the time of the devaluation and restored in early 1968, the export incentive was in the devaluation and the differential impact of the export taxes and subsidies. Columns (1) to (3) give the total subsidies adjusted for the impact of the exchange rate. For 1966, the failure of the exchange rate to keep pace with domestic prices between 1960, in which the subsidies were zero, and 1966 more than wiped out the subsidies provided by the promotional measures. Between 1966 and 1968, while the introduction of export taxes in 1967 greatly reduced the exchange rate stimulus provided to food and agricultural products, for the other industries, with minor deviations due to the differential impact of the direct subsidies, the total subsidies increased by about 25 per cent. In 1970, the subsidies were lower due to: (1) the failure of the devaluation of June 1970 to compensate for the inflation that had occurred since 1968, and (2) a reduction in the overall

TABLE 6-6.--Discrimination Against Exporting and in Favor of Domestic Use

		Total Subsidy			Bias Against Exporting		
		1966	1968	1970	1966	1968	1970
1.	Food and beverages	-25.3	13.1	- 6.7	97.8	70.3	70.6
2.	Tobacco	- 9.0	6.7	- 1.1	- 2.1	-45.7	-42.7
3.	Textile products	-15.0	9.7	1.4	264.3	86.6	92.3
4.	Apparel	- 9.0	12.7	6.6	79.6	20.0	3.3
5.	Wood products	-15.0	7.8	3.1	26.0	14.5	12.6
6.	Paper and paperboard	- 9.4	12.8	6.7	*	24.4	33.0
7.	Chemical products	-12.0	14.1	5.6	97.8	47.4	63.3
8.	Petroleum products	-27.0	- 0.6	- 4.3	47.0	- 4.8	- 4.3
9.	Rubber and products	-15.0	12.1	6.1	31.9	11.1	-16.6
10.	Leather products	-18.1	- 0.9	- 6.3	41.6	0.2	20.5
11.	Stone, clay and glass	- 9.0	12.6	6.6	*	73.2	51.6
12.	Metals	-12.0	14.2	7.6	95.9	24.9	6.7
13.	Vehicles and machinery	- 9.0	14.8	8.3	90.1	26.1	14.2
14.	Electrical products	- 9.0	14.5	8.1	104.4	19.6	19.6
15.	Agricultural products	-29.0	-17.5	-16.3	29.9	32.5	34.4

Sources: Subsidies calculated from data in various issues of Anales de la Legislación Argentina, Buenos Aires, and Bóletin Informativo, Organización Techint, Buenos Aires.

*Indicates negative value added in exporting.

subsidy at the time of the June 1970 devaluation from 15 per cent to 6 per cent.

As the rates in columns (4) and (5) of Table 6-6 show, between 1966 and 1968 the bias against exporting as opposed to domestic use declined in every industry but agriculture. To a lesser degree than agriculture, the export taxes on processed foods countered the exchange rate subsidy and yielded a relatively small reduction of the bias. While the export tax on hides and skins rose from 11 to 19 per cent, the leather industry taken as a whole benefitted from the subsidy increase and the bias was lowered considerably. The decrease for tobacco was the result of a decline in its nominal rate of protection. Since the domestic price is deflated by the nominal tariff in order to get the domestic currency equivalent of the world price, a lower tariff will reduce this bias.

For the import-competing industries, the reduction in the bias against exporting depended on the size of the subsidy and the change in the nominal tariff. By 1968, despite substantial reductions, the bias remained high on textiles and stone, clay and glass products which still had nominal tariffs of 46 to 52 per cent respectively and on chemicals on which nominal protection has risen from 33 to 37 per cent. Though the rates on wood, petroleum and rubber were reduced further, these industries could not be expected to provide a significant addition to

manufactured exports. And while the bias against apparel exports was greatly lowered, the tariff policies of other countries severely limit export opportunities here. In the remaining import-competing industries (paper, metals, vehicles and machinery, and electrical products), high discrimination was reduced to levels which might permit a significant increase in industry exports.

A preliminary inspection indicates that the reduction in discrimination against exports of non-rural products increased their sales significantly between 1966 and 1968. Though weather affected the supply of traditional crop exports, exports of processed foods and manufactures expanded by 51.3 per cent. While most of the absolute rise came from prepared meat products, due more to new sanitary requirements than to promotion measures exports of specifically promoted products grew from 95 to 157 million dollars.

Two-thirds of this increase came from the four import-competing industries which make up 40 per cent of value added in manufacturing and for which the bias was brought well under 100 per cent. Most of the other manufactured exports experienced increases that were small in absolute terms but high relative to insignificant previous levels. Thus, manufactured leather products rose only 9 million dollars but by 95 per cent.

This examination suggests some success for the combined exchange rate and promotion measures in obtaining the expansion of non-traditional manufactured exports through price incentives.[16] It might seem likely then that fiscal export measures for manufactures are a promising source of foreign exchange earnings. The results for the 1968-1970 period, however, raise some doubts. As can be seen in Table 6-7 which contains dollar exports for subsidized industries, despite increases in the 1970 discrimination figures for chemicals and leather products, the exports of these two industries expanded by 21 and 103 per cent respectively. At the same time, further reductions in the bias against exports of metals and vehicles and machinery also brought increases of 20 and 91 per cent respectively. This conflicting evidence regarding the price responsiveness of manufactured exports plus several cases in which substantial reductions of the bias failed to increase exports suggested the worthwhileness of a regression analysis designed to identify the factors to which manufactured exports do respond.

John Eriksson did such a study for the 1951-1965 period. With a price elasticity of supply of only .84, most of the fluctuation in exports of manufactures came

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[16]With an increase in subsidies of 25 per cent, the 65.3 per cent increase in manufactured exports between 1966 and 1968 would imply a price elasticity of 2.6.

TABLE 6-7.--Dollars Exports of Subsidized Industries (in Millions)

		1966	1968	1970
1.	Food and beverages	-	-	-
2.	Tobacco	0.0	0.0	0.2
3.	Textile products	0.8	2.9	4.6
4.	Apparel	0.1	0.2	.4
5.	Wood products	0.0	0.2	0.1
6.	Paper and paperboard	11.2	16.9	16.9
7.	Chemical products	24.9	32.0	39.0
8.	Petroleum products	13.8	10.8	7.3
9.	Rubber and products	1.0	4.6	7.8
10.	Leather products	9.2	17.9	36.4
11.	Stone, clay and glass	0.5	1.0	2.3
12.	Metals	11.9	32.5	39.2
13.	Vehicles and machinery	17.2	30.5	58.3
14.	Electrical products	3.4	5.3	8.2
15.	Agriculture products	-	-	-

Sources: Based on data in various issues of Comercio Exterior C, INDEC, and Intercambio Comercial Argentino Según C.U.C.I., INDEC.

from a positive correlation with total world exports and a negative one with domestic production of manufactures.[17] This negative correlation would correspond to the "vent-for-surplus" explanation of exports which argues that while production may be basically geared to home demand, the ability to increase participation in world trade in time of domestic recession gives the producer some freedom from fluctuations in home demand.

As was shown above, it was only in the years 1967 and later that the promotion measures succeeded in reducing the discrimination against production for export. By including these years we would hope to gain a better picture of the price elasticity of supply of manufactured exports. Also, with the founding of the Latin American Free Trade Association and the gradual reduction of tariffs within the association, dollar exports to LAFTA were included as a proxy variable for the impact of LAFTA on

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[17] John R. Eriksson, "El Comportamiento de la Exportación de Manufacturas en la Argentina, 1951-1965," Desarrollo Económico, IX, No. 36 (January-May, 1970), pp. 553-80. With manufactured exports in millions of 1960 pesos (pE) as the dependent variable, Eriksson employed as the independent variables: (1) F = the effective rate of exchange adjusted for subsidies and deflated by an index of unit labor costs; (2) Q = an index of manufacturing production; and (3) W = world exports in billions of dollars. His best result was as follows:

$$\ln pE = -.448 - \underset{(0.673)}{2.037} \ln Q + \underset{(0.516)}{2.915} \ln W + \underset{(0.256)}{0.840} \ln F$$

$$\bar{R}^2 = .872$$

manufactured exports.[18] After testing with different alternatives, world exports of manufactures were selected as the world trade variable and the wholesale price index as the deflator of the effective exchange rate.

Employing yearly data for the period 1951 to 1970, the results were as follows:

$$(1)\quad pE = \underset{(0.22)}{-5.86} - 1.14\,Q + \underset{(0.21)}{2.18}\,W - \underset{(0.53)}{1.65}\,F_{WPI}$$

$$\bar{R}^2 = .967 \quad D.W. = 1.92 \quad \text{degrees of freedom} = 16$$

$$(2)\quad pE = \underset{(0.23)}{-24.16} - .99\,Q + \underset{(0.27)}{1.91}\,W + \underset{(0.58)}{2.02}\,F_{WPI}$$

$$+ \underset{(.05)}{.07}\,L$$

$$\bar{R}^2 = .969 \quad D.W. = 2.05 \quad \text{degrees of freedom} = 15$$

where,

pE = manufactured exports in millions of 1960 pesos

Q = an index of real manufacturing production in Argentina

W = world manufactured exports in billions of dollars

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[18] While some progress toward trade liberalization has been made within LAFTA, the pace has been painfully slow due to the fears of some of the less industrialized countries that they will lose more than they will gain. The preferences granted by Argentina are probably typical, and Bell, using world trade weights, estimated that by 1969 relative preferences for LAFTA imports into Argentina were 8 per cent vis-a-vis third parties. See Harry H. Bell, Tariff Profiles in Latin America: Implications for Pricing Structures and Economic Integration (New York: Praeger, 1971), p. 20.

F_{WPI} = the net effective exchange rate adjusted for subsidies and deflated by wholesale prices

L = Argentine exports to LAFTA in millions of dollars

With a very high $\bar{R}^2$ in each case and Durban-Watson statistics close to two, these equations point to world exports of manufactures as the most significant determinant of Argentine manufactured exports and home demand for productive capacity as another major influence. In equation (1), though the exchange rate coefficient is significant at the 0.7 per cent level, it implies a price elasticity of supply of manufactured exports of only .6 and its elimination from the equation causes only a slight reduction in the R^2 (from .972 to .956).[19] In equation (2), the addition of exports to LAFTA countries as a variable also adds little. While the exchange rate elasticity rises to .73 and the L coefficient is of the correct sign, it is only significant at the 17.0 per cent level. The lack of significance of the L coefficient would appear to be due partially to the modest degree of trade liberalization achieved thus far in LAFTA and partially to the high degree of correlation between Argentine exports to LAFTA and world exports of manufactures. The price elasticity might be

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[19]The price elasticity of supply, .6, is the price coefficient, 1.65, divided by the ratio of mean of the dependent variable, 42.1, to the mean of the price variable, .153.

somewhat higher if the price variable could incorporate the impact of tariff reductions within LAFTA and other incentives such as cheaper credit for exporters, but these incentives were simply not large enough to make a notable difference.

The conclusion indicated then is that the strong increase in manufactured exports between 1965 and 1971 was only marginally due to the promotion measures. Other than exports to LAFTA, the regression variables for 1965-1970 are given in Table 6-8. In terms of equation (1) the coefficient for world exports of manufactures indicates that an increase of one billion dollars has brought an increase in Argentine manufactured exports of 218 million 1960 pesos (2.8 million dollars). Each one point increase in the production index (2,304 million 1960 pesos) has brought a decline in manufactured exports of 114 million 1960 pesos. This equation gives price measures a very minor role in the more than three-fold increase in these exports between 1965 and 1970. Between 1965 and 1968, when the net effective exchange rate increased by 29 per cent, a supply elasticity of .6 called for an increase in exports of 1,190 million pesos. The increase in world exports would be expected to provide a further increase of 6,870 million and the higher domestic production would bring a reduction of 1,600 million. These changes sum to a rise of 6,257 million as opposed to an actual increase

TABLE 6-8.--Data for Regressions on Manufactured Exports, 1965-1970

Year	Dependent Variable	Independent Variables		
	(1) Exports of Manufactures in Millions of 1960 Pesos	(2) Domestic Production Index (1960-100) for Manufacturing	(3) World Exports of Manufactures in Billions of U.S. Dollars	(4) Net Effective Exchange Rate
1965	3790	138.4	83.3	1.25
1966	4548	137.6	93.1	1.26
1967	7277	138.4	99.8	1.43
1968	10188	149.5	114.8	1.61
1969	12734	169.0	134.6	1.52
1970	15027	180.0	155.0	1.34

Source: See the Statistical Appendix, p. 261.

of 6,398 million. From 1968 to 1970, the 16 per cent decline in the net effective exchange rate called for a decline of 1,027 million while domestic production and world trade increases specified a decline of 3,477 million and an increase of 8,764 million respectively, summing to 4,260 million. The actual increase was 4,839 million.

These figures suggest that the subsidies brought an increase in foreign exchange earnings of less than their own domestic currency equivalent. For the most part they served as windfall gains to manufacturers of products that would have been exported anyway in response to the doubling of world trade in manufactures between 1965 and 1970.

Stern has pointed out that in the early 1960's many less developed countries ran into serious foreign exchange difficulties because of heavy dependence on an autarkic strategy of import substitution. Seeking a solution through the promotion of manufactured exports, they generally offered subsidies to overcome the inefficiencies introduced through import substitution efforts rather than moving toward a restructuring of the economy. Though up to 1967 Argentina was typical of such countries in that export promotion measures were enacted within an overall strategy of import substitution, the 1967 plan explicitly linked tariff reform and export promotion. The complex of measures was designed to do no more than put the Argentine manufacturer on an equal competitive footing

with his international competitors; (1) the tariff reform was to force a move toward greater efficiency in the import substituting industries by increasing the pressure of import competition; (2) the subsidies were designed to overcome the higher costs the internal producer encounters by paying import tariffs and internal taxes; (3) the compensated devaluation was to deal with the disadvantage the exporting manufacturer experienced through a consistently overvalued exchange rate.

The last two types of measures, both of which directly increase the peso return for exporting, were fairly successful in 1968 but somewhat less so in 1970. All through this period, if they were willing to wade through a great deal of red tape, exporters were able to get back the tariffs they actually paid on imported inputs. While in 1966 the subsidies subtracted from the sum of the exchange rate disadvantage and internal taxes still left production for export at a 22 per cent disadvantage relative to production for domestic use, in 1968 exporting enjoyed a 1 per cent advantage and in 1970 an 8 per cent disadvantage. Thus these forms of discrimination were eliminated in 1968 and had begun to creep back in again in 1970. The lowering of the bias arising from internal taxes was not uniform since the tax level varied from industry to industry but the subsidies did not.

The efforts to increase productive efficiency through changes in the structure of protection have already been treated. The declines in nominal tariffs, averaging 7 per cent in the 1966-68 and 1968-70 periods, also reduced the difference between the prices obtainable in exporting and in domestic production. Though between 1966 and 1968 this reduction combined with the subsidies to decrease the bias against production for export, between 1968 and 1970 the decrease in those subsidies cancelled out the lower nominal protection.

The evidence seems to indicate then that even with the modest changes that did take place in the domestic allocation of resources, the inefficiency of the manufacturing sector is such that attempts to increase foreign exchange earnings through direct subsidies will be very expensive in terms of domestic resources.

Summary and Conclusions

The opening of the economy to trade basically involved the reversal of discrimination against domestic production for export. The major shifts in effective protection were the much higher relative ranking of processed foods and the higher net effective protection for all food and agricultural products. Despite domestic terms of trade ever more favorable to the rural sector, due to the limited price elasticity of supply and the poor weather conditions, this resulted in very little increase

in agricultural supply until 1973. The 200 per cent expansion of manufactured exports that did take place between 1966 and 1971 was basically due to expanding world trade in manufactured products. Tests of their price elasticity of supply suggest that attempts to expand these exports through direct subsidies are highly inefficient. On the import side, the combination of the price agreement and compensated devaluation lowered net effective protection and reallocated resources in a manner consistent with a strategy of continued import substitution for intermediate type products. However, there was little increased competition from imports which might slow down domestic production or add to unemployment.

The failure of exports to expand meant that after the return of rapid inflation brought a substantial capital outflow in 1971, minimal foreign exchange reserves had to be protected by tight tariff and non-tariff import restrictions through 1972 and early 1973. In 1973, the continued high relative rural prices and the higher world price for meats and grains gave promise of a rise in exports from 1.8 billion in 1972 to 3 billion in 1973.

CHAPTER 7

STABILIZATION POLICY, 1967-1971: THE RESULTS ACHIEVED

Introduction

Through 1969 the plan succeeded in achieving the basic economic goals initially laid down. The highly organized labor unions, however, were less conscious of the macroeconomic criteria of stable prices, growth and balance of payments surplus, and more aware of meager wage gains and their inability to participate in any bargaining process over work and wage conditions. For this reason economic policy was conducted in an atmosphere of continual strife, occasionally flaring up to great intensity when labor and student protests resulted in civilian deaths.[1] This struggle reached crisis proportions in June of 1969 when widespread rioting in the city of Córdoba forced concessions from the government, including the resignation

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[1]The sequence of these events is described in Andrew Graham-Yooll, Tiempo de Tragedia: Cronologia de la Revolutión Argentina (Buenos Aires: Ediciones de la Flor, 1972).

of Krieger Vasena as economics minister. Nevertheless, while the wage increases that year reflected the desire to pacify the urban worker, the basic direction of economic policy remained unchanged through most of 1970, and the unchallenged control of the military insulated economic policy from being greatly affected by the street confrontations.[2]

In setting policy for 1970, Vasena's successor, Jóse M. D. Pastore, announced the continued commitment to the essentials of the stabilization plan. Given the high level of reserves and the low rate of inflation, the exchange rate would not be modified nor would there be a wage increase beyond the 7 per cent increase previously promised for March. His forecast was for no increase in inflation, a 6 per cent growth rate and a $250 million trade surplus.[3] No sooner had these pronouncements been made, however, when higher food prices set up a contest of wills between the government and the principal labor unions over wage increases. During 1970 and 1971, discontent with the rising cost of living and with military rule intensified the struggle over income shares. This unrest

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[2]An ad hoc treatment of the policies designed to control inflation in this early period is contained in Juan Carlos De Pablo, Política Antiinfacionaria en la Argentina, 1967-1970 (mimeographed). Here, as elsewhere, he argues that Argentine inflation is endemic and should be institutionalized.

[3]The First National Bank of Boston, The Situation in Argentina, February 2, 1970, Buenos Aires, p. 1.

and the frequent changes in government created uncertainty about stabilization policy and thus invited inflationary expectations. While Moyano Llerena, economics minister from June to October of 1970, showed a clear commitment to the policies he helped formulate in 1967, his successor, Aldo Ferrar, was more inclined to see Argentine inflation as a problem of economic development to be attacked by modernizing the economic infrastructure. While reaffirming the incomes policy, he cited some of the price measures, particularly the lowering of relative meat prices, as detrimental to future supply.[4]

The measures designed to bring about short-term changes in inflation, output and the balance of payments are discussed here in terms of the economic relationships of Chapter 2. The individual treatment of each of the policy goals is preceded by a summary discussion of the whole stabilization effort.

Summary on the Impact of the 1967 Stabilization Plan

Even though the military government in Argentina was not in serious danger of popular overthrow, the tenure granted any particular military president by his peers had much to do with his ability to keep order and to appear to be following a promising economic policy. This, plus the

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[4]The Situation in Argentina, February 1, 1971, p. 2.

desire of the military to justify its seizure of power, created the need for short-term economic success. While the plan that was formulated involved both long and short-term strategies, the implementation tended to stress the short-term in a way that eventually contributed to the longer-term failure of the program.

The quick success of the anti-inflationary policy supports the contention that inflation was caused by competitive pressure from the different economic groups for a larger share of the national income. Once the industrial sector agreed to link price hikes to cost increases, it was a relatively short time before the now fixed wage and exchange rates limited further increases in non-rural domestic prices. The problem here was that setting a wage rate in April 1967 that would last until the end of 1968 and, in the same breath, promising to maintain relative income shares was equal to a bet that prices would rise at the anticipated rate. When in fact they rose more rapidly, the decline in real wages was limited by a reduction in the relative price of beef of 6 per cent in 1967 and 9 per cent in 1968.[5] Given the perverse short-term supply response of beef, such a policy

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[5]The introduction of export taxes on beef in March 1967 gave the government the ability to lower relative beef prices by not reducing the taxes when other domestic prices rose more rapidly than that of beef. The relative price index discussed here is the peso price per live kilo divided by the cost of living.

had to be pursued carefully lest it lead to a decline in herd size and a future decline in beef production. Even with the slower rate of industrial price increases and efforts to support the real wage, the burden of the stabilization plan fell on the wage earner. Though per capita income expanded, the real family wage was consistently below its 1966 level.

What was noteworthy about growth policy in 1967 was the success, in contrast with past stabilization efforts, in avoiding a downturn in domestic product. The manipulation of short-run capital flows created an additional source of liquidity not restricted by the IMF agreement and, by means of the devaluation and export taxes, the government was able to move toward a balanced budget without reducing its real spending and without having a negative impact on private spending. Thus it was possible to pursue a mildly expansionary monetary policy and to maintain real federal spending while seeming to pursue the traditional anti-inflationary policies of restricting Central Bank lending to the federal government and cutting the treasury deficit.

In 1968 with the rate of inflation under control, monetary-fiscal policy became more expansionary. The decline in the official budget deficit of from 1.7 to 0.7 per cent of gross domestic product concealed the fact that the deficit for the total government impact on the economy rose from 1.3 to 1.9 per cent of gross domestic product. The real boost, however, came from monetary

policy as the lowering of reserve requirements permitted an 18.6 per cent increase in the real supply of money. Since the undervaluation of the exchange rate in 1967 had produced the hoped for inflow of short-run capital, the greater ability to import and the increase in credit during a wage freeze produced the increase in non-rural output that our supply function would predict. The rate of growth of real non-rural output went from 2.2 per cent in 1967 to 6.2 per cent in 1969, and with the same favorable conditions, to 8.6 per cent in 1969.

Agricultural output proved less responsive to the increases in real credit. The policy toward agriculture was to stabilize relative prices at their 1966 level and to use credit expansion to stimulate production. The implicit assumption was that 1966 prices were high enough for such a strategy to work, but, despite constant relative agricultural prices, output stagnated between 1966 and 1969. The problem was the choice of 1966 as the norm for relative prices. In 1963-1964, relative agricultural prices much higher than the 1966 level had been accompanied by a rapid expansion of agricultural production. What was apparently the case in the 1966 to 1969 period was than an unsuccessful effort was made to substitute a large increase in real credit to the agricultural sector for lower relative prices.

By early 1969, the considerable success in achieving the goals of the plan clearly validated the short-run strategy. Without restricting the ability to import and with a limited impact on domestic prices, the compensated devaluation had drawn in enough short-term capital so that the reserve position was strong. At the end of the first quarter of 1969 reserves were almost three times the value of imports for that quarter. With the wage freeze and an exchange rate that had been constant for two years, inflation was proceeding at a very moderate rate. The wholesale price index averaged a 9.6 per cent increase in 1968 after a 25.6 per cent rise in 1967. The declining rate of inflation was consistent with a strong expansion of real credit which had a highly favorable impact on non-rural output.

The long-run strategy was faring less well. In the price realm, after the incomes policy succeeded in damping inflationary expectations, the plan called for domestic market forces, aided by increased import competition, to dictate relative price increases. However, because the incomes policy had shifted income away from the wage earner, union demands for wage increases were so high that in September of 1969 decreed wage increases had to be substituted for the contemplated return to collective bargaining. There was little doubt that dropping the incomes policy would revive the inflationary spiral.

While the use of short-term credit provided effective stimulation to short-run output and employment, the stimuli were not present which could generate longer-term growth from increased foreign investment and manufactured exports. Further, the analysis of effective protection showed that the reallocation of resources to increase productivity was at best minimal and the strategy of import substitution was continuing.

The reliance on short-term capital inflows had been a temporary means of overcoming the exchange shortage, but by 1969 no new source of exchange earnings had emerged. The failure of credit expansion to increase rural output meant a deteriorating trade balance since the increased activity in the non-rural sector was drawing in more and more imports.

The lack of adequate policy tools began to be a serious hindrance in the second half of 1969. Dissatisfaction with military rule and declining real wages resulted in serious riots in June, 1969, and forced the resignation of Krieger Vasena. The political unrest was compounded by higher food prices and rising world interest rates as the year wore on, giving rise to serious speculation against the exchange rate. Because the policy chosen to counter the outflow was a cutting back on the expansion of the nominal money supply in late 1969 and early 1970,

non-rural output suffered in 1970 and, quite possibly, rural output in 1971.

The policy of steadily declining relative beef prices might have been reversed in 1969 when beef production took a dangerously large leap upwards, but the other threats to the stabilization effort were such that a deliberate increase in meat prices might have collapsed the whole plan. Instead, a very sharp increase in the price of meat was forced on the economy when the combination of depleted herds and rising meat prices in external markets signalled a move into that phase of the cattle cycle in which animals are retained on the ranch in order to rebuild herd size. Once inflationary pressure arose from a source other than policy instruments capable of manipulation, the policy of maintaining relative income shares became the mechanism for the operation of the inflationary spiral as higher meat prices called for higher wages which were quickly translated into higher prices. When, in early 1971, the minister of economy stated that wage determination would be returned to the collective bargaining process and that prices did not have to be linked to specific cost increases, the stabilization program in the form in which we have been studying it was ended. Its official demise was not so much a rejection of the goals but a refusal to administer the inevitable inflation.

When inflation began to pick up steam in late 1970, speculative capital flight was successfully countered by an interest rate differential that drew funds into Argentina. However, as inflation accelerated in early 1971, the interest rate differential was wiped out by the rising cost of forward exchange. Seeing that the spot rate could not be long maintained without the devastation of exchange reserves through speculative capital flight and the speculative purchase of imports, an attempt was made to imitate the Brazilian minidevaluation experiment. Unfortunately, neither the economic circumstances nor the judgment with which this policy was pursued contributed to its success. The rate of inflation was so rapid that the small devaluations only slowed down the ever greater overvaluation of the exchange rate. Since domestic interest rates lagged behind the rate of inflation, the real cost of holding money in Argentina also climbed rapidly. Thus the inability to forecast accurately the inflation and the refusal to deal with its balance of payments repercussions in terms of appropriate interest rate and exchange rate policies created strong incentives to get funds out of the country. The short-run capital outflow in 1971 cut reserves in half and put the country dangerously close to having to cease payments.

In sum, then, the 1967 stabilization effort was a clever short-run strategy which, skillfully taking into

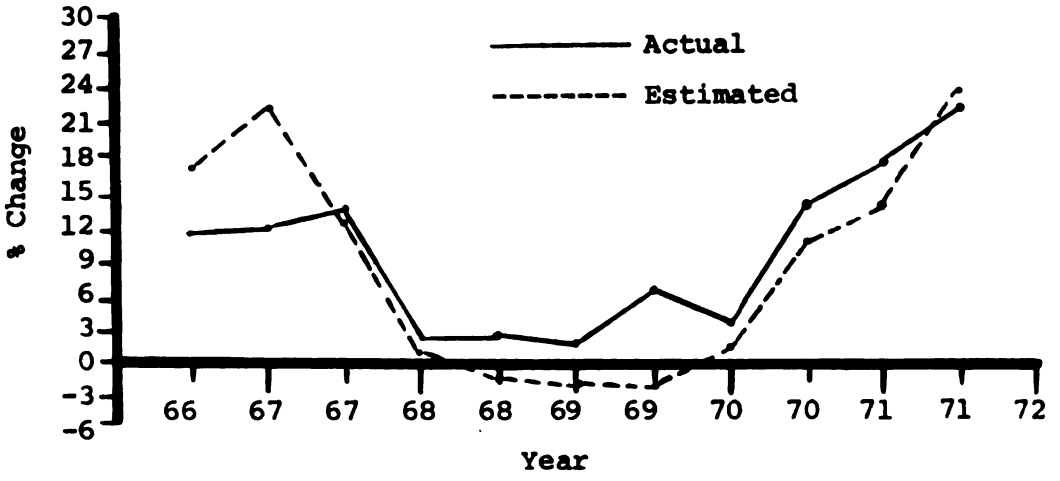
account some of the special characteristics of the economy, quickly achieved its short-run goals of increased exchange reserves, accelerated growth and moderation of inflation. However, the emphasis on the short-run and the way in which the policy mix was put together created difficulties that began to crop up in 1969 and gradually made the plan unworkable. The level at which relative agricultural prices were fixed failed to provide an incentive for the expansion of rural production and, in addition, the decline of relative meat prices added to short-term stability at the cost of a serious inflationary stimulus in 1970. The reliance on changes in the money supply to deal with problems of internal and external balance involved a conflict in which non-rural output suffered in 1970. Because wage demands had been stirred by the steady decline of the real wage and because import competition had not checked the domestic producers control of his prices, a planned move away from the incomes policy was not feasible.

The short-run capital inflows and the incomes policy had won a temporary respite and were to provide an opportunity for structural transformation. However, the urgency with which across the board short-term success was pursued made the long-term transformation much more difficult to attain. When the respite was over and the transformation had not advanced very far, the long-ingrained inflationary procession quickly took over.

Price Stabilization

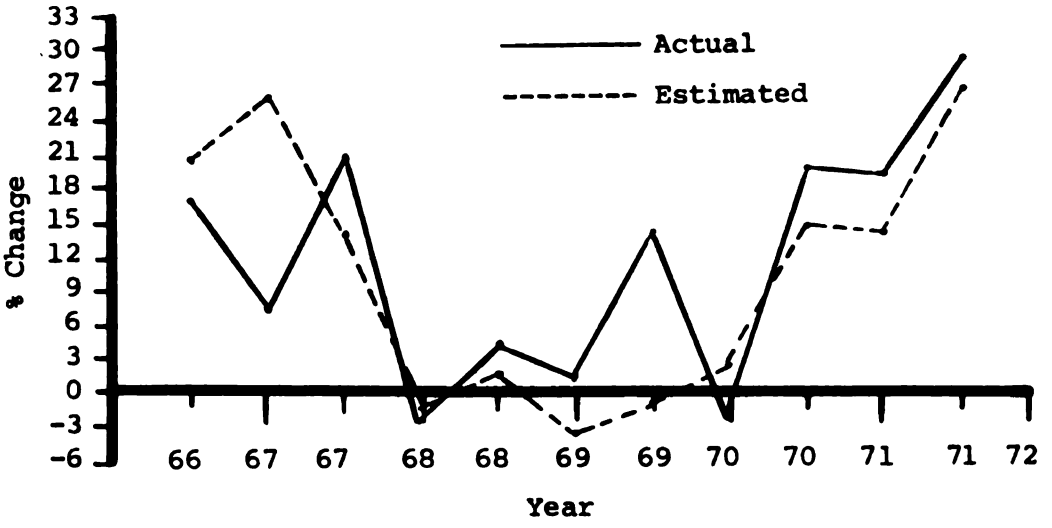
In Chapter 4 it was postulated that fluctuations in the price level are best explained by changes in the domestic supply of goods and services and by changes in three policy variables: the nominal money supply, the exchange rate and the level of nominal wages. In Figures 7-1 to 7-4, as a way of seeing the effects of policies designed to limit price level increases, the actual rates of price variation are presented along with those estimated by the regressions equations on page 107 of Chapter 4. Since the goal of price stability was to be achieved by manipulation of the policy variables as well as through the price agreement and the compensated aspect of the devaluation, it would be expected that these last two measures would introduce some deviation between the actual and estimated rates of price increase. Figures 7-2 to 7-4 measure these deviations for the component indexes of the wholesale price index, shown in Figure 7-1.

As can be seen by examining the independent variables for the inflation regressions, given in Table 7-1, the measures of the plan would normally have constituted strong inflationary pressures. In the first half of 1967, the average money supply was 18 per cent higher and the average wage increase in the previous two semesters had been 15 to 16 per cent. However, the real source of the estimated acceleration of inflation was a 39 per cent



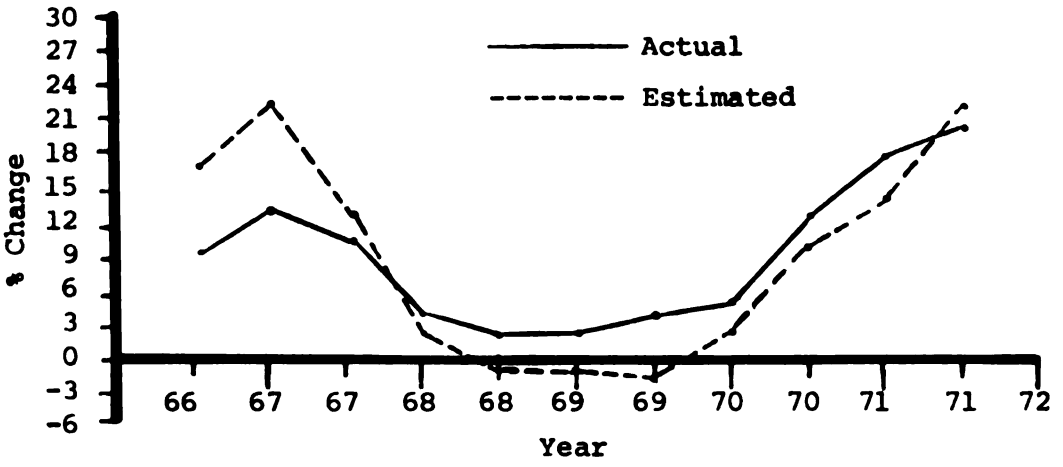
Source: See Table A9.

Figure 7-1.--Actual and Estimated Rates of Price Increase: Wholesale Price Index



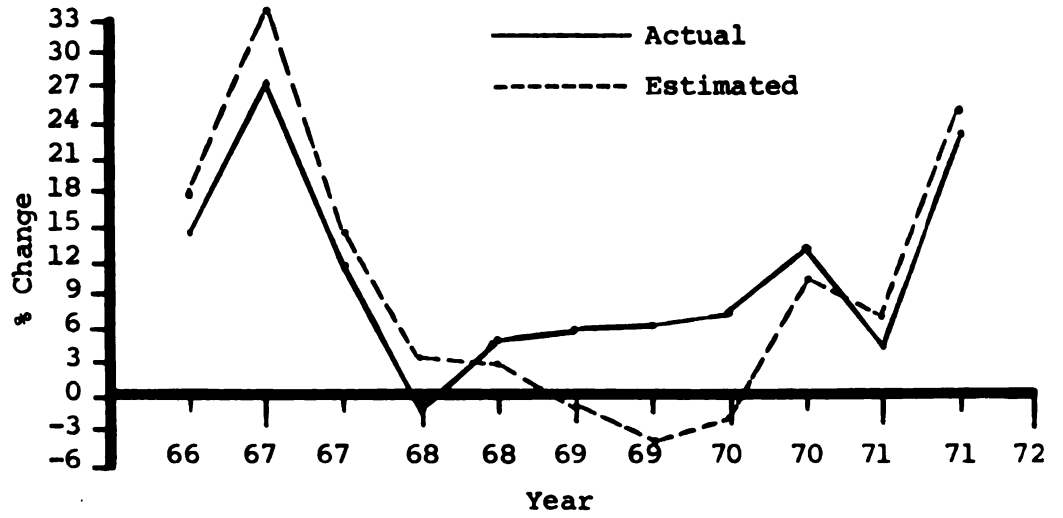
Source: See Table A9.

Figure 7-2.--Actual and Estimated Rates of Price Increase: Rural Price Index



Source: See Table A9.

Figure 7-3.--Actual and Estimated Rates of Price Increase: Non-rural Domestic Price Index



Source: See Table A9.

Figure 7-4.--Actual and Estimated Rates of Price Increase: Price Index of Imported Goods

TABLE 7-1.--Independent Variables for Regression Equations on Prices (All variables are percentage changes in semi-annual averages. The dependent variables are the wholesale price index and its three main components.)

Year	Semester	Money Supply	Exchange Rate	Wages	Global Supplies
1965	1	16.2	9.7	17.6	1.1
	2	8.9	10.2	15.2	6.4
1966	1	14.7	8.1	16.8	-5.3
	2	14.5	15.5	14.9	4.1
1967	1	18.0	39.3	15.6	0.4
	2	10.0	14.3	9.9	-0.9
1968	1	16.6	0.5	0.0	1.6
	2	12.9	0.1	0.0	6.6
1969	1	10.6	0.1	8.0	2.0
	2	4.7	0.0	3.6	4.4
1970	1	5.8	1.1	11.5	0.3
	2	9.3	11.5	7.5	2.1
1971	1	10.8	1.9	21.7	0.7
	2	16.4	27.2	18.7	5.1

Sources: See page 259 of the Statistical Appendix.

increase in the average exchange rate. Taken all together, the estimated rise in the wholesale price index was 23 per cent.

Reflecting the terms of the price agreement and the tax changes on traded goods, the actual rate of inflation stayed at 12 per cent. As Figure 7-2 indicates, the greatest deviation took place in the case of rural products where export taxes rose from 2 to 16 per cent, eliminating most of the impact of the devaluation on rural prices and accounting for the bulk of the 18 per cent difference between the actual and estimated rural price increase. The deviation is much smaller in the case of the price index of imported goods where import tax collections fell by precisely the size of the 6 per cent deviation.

The terms of the price agreement applied principally to non-rural domestic prices which were only supposed to reflect higher costs minus a 3 per cent deduction as a contribution to the success of the plan. The 13 per cent increase in non-rural domestic prices in the face of a 21 per cent estimated increase points to the impact of the agreement.

In late 1967, though the decreasing inflationary pressure stemming from wage and exchange rate increases began to lower the rates of price rise for import and non-rural domestic prices, weather restricted rural supplies causing sharply higher food prices and a slight

increase in overall inflation. Through 1968 and 1969 the anti-inflationary measures were quite effective. The wage increases granted with the announcement of the freeze were almost entirely absorbed by the end of 1967 and wages and the exchange rate were constant throughout 1968. While an average increase of 18 per cent in the money supply was managed within the terms of the IMF agreement during 1968, the economic slack seems to have been sufficient to prevent a situation of excess demand. The price increases that did take place stemmed from higher world prices for imported goods, as can be seen in Figure 7-4, and from the expanded margins of wholesalers whose services were not covered by the price agreement.

The success in lowering the rate of inflation was greater than that in maintaining relative income shares. Table 7-2 contains the ratio of rural to non-food manufacturing prices and indexes of real wages for single and family workers. Due to export tax cuts on some products and the short supply of others, rural prices made a slight gain on the prices of manufactured goods, with the ratio reaching 103.9 per cent of its 1966 level in the last half of 1968. For real wages, however, the small initial gains were more than eliminated by the unexpectedly high food prices at the end of 1967. Despite a 7 per cent deduction in the social security tax in January 1968, by the end of the year the combination of the wage freeze and even slowly

TABLE 7-2.--Indicators of Changes in Relative Incomes (1966 = 100)

Year	Semester	Real Wage for a Single Worker	Real Wage for a Family Worker	Internal Terms of Trade	
				Rural/ Non-Rural Domestic	Rural/ Non-Rural Domestic Exc. Food
1967	1	104	100	97	97
	2	97	92	105	109
1968	1	98	94	101	105
	2	94	91	99	104
1969	1	98	96	100	102
	2	98	94	108	114
1970	1	104	98	102	109
	2	101	95	110	126
1971	1	103	92	111	132
	2	104	94	118	137

Source: Based on data in various issues of Informe Económico and Bóletin de Estadística.

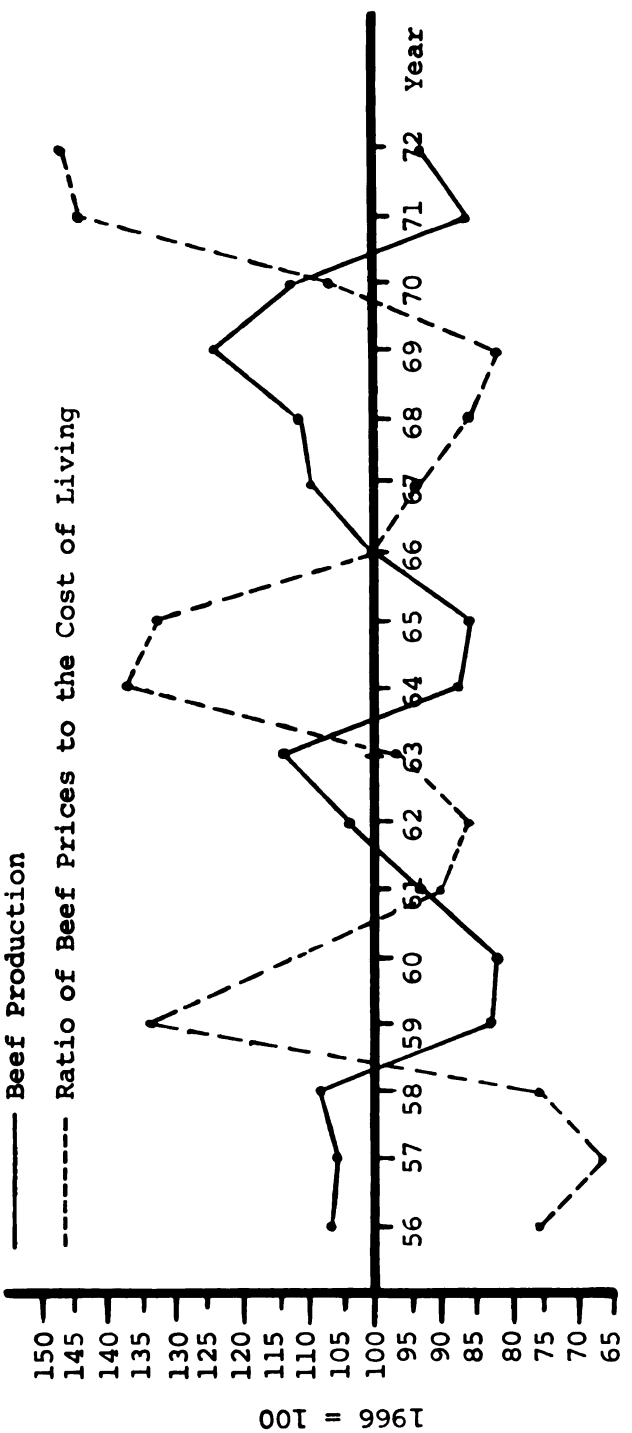
rising prices reduced real wages for single workers to 94 per cent of their 1966 level and those for married workers to 91 per cent. Thus in 1967 and 1968 while relatively high agricultural prices continued to gain and the industrial producer was able to pass along all cost increases and received substantial increases in bank credit at negative real rates of interest, the burden of the stabilization effort was falling on the industrial worker. Efforts were made to raise the real wage in 1969 but a rise in food prices with supply shortages in late 1969 took away the marginal wage gains and moved the domestic terms of trade further in favor of agriculture. In the second half of 1969, unfavorable rural supply conditions again caused a sizeable difference between the actual and estimated rate of rural price increase. The actual non-rural price increase for the same period was 5 per cent above the estimate of a -1.4 per cent change due to the fact that the negative coefficient for money supply two periods earlier more than overcame the impact of higher wages on the estimate.

Despite the higher wages and rural prices in 1969, a good harvest at the beginning of 1970 and the continued observance of the price agreement lowered the increase in the wholesale price index from 6.5 per cent in the last half of 1969 to 3.2 per cent in the first half of 1970.

As Figure 7-2 indicates, the principal factor was a reduction in the rate of rural price increase from 13.4 to -0.7 per cent. After early 1970, the stabilization effort quickly came apart with a series of wage and exchange rate increases resulting in higher actual and estimated manufacturing and rural prices.

While the appearance is that the authorities lost the nerve to pursue the anti-inflationary effort, the real problem lay in the cumulative impact of three years of relatively low beef prices followed by a surge in the export price. The discussion of agricultural supply in Chapter 3 treated the perverse response of beef producers to higher prices as they restrict supply in order to build up herds and take greater advantage of the higher prices.

Figure 7-5 illustrates this relationship for the period 1958 to 1971. Though the overall incentives for agricultural production were adequate in the 1967 to 1969 period, the 11 per cent increase in the ratio of cereal to non-rural domestic prices between 1966 and 1969 was balanced out by a 7 per cent decline in the ratio for livestock prices which translated into a 17.2 per cent decline in the ratio of beef prices to the cost of living. Thus, the slow rate at which export taxes on meat were reduced caused a decline in relative domestic meat prices and made a distinct contribution to the early success of the



Source: See Table A10.

Figure 7-5.--Indexes of Beef Production and the Ratio of Beef Prices to the Cost of Living, 1956-1972 (1966 = 100)

anti-inflationary measures. One of the clear advantages with which this stabilization effort began was that 1964 and 1965 had been years of high world prices and low domestic production with the consequent building up of herds. Despite increased beef production in 1966, the plan was undertaken with large herds. Due to the difficulties in marketing beef abroad in 1968, lower prices were accompanied by only moderate increases in production and, at least according to current estimates, increases in herd size. However, in 1969 the opening of European markets and the growing domestic demand for beef combined to increase sales and cause a rapid reduction in herd size. There was no real attempt to offset the increased beef production with higher prices since coming at the same time as higher crop prices, wage increases and a large outflow of speculative capital, the higher beef prices could easily have signalled the demise of the whole plan. When the official census of June, 1970, revealed the extent of the herd reduction, rising external beef prices were adding to the incentives to retain cattle in order to build up herd size. Despite higher dollar prices, domestic prices rose slightly faster due to the price inelastic demand for beef and a higher percentage of the shrinking domestic production went to domestic consumption. Beginning with September, in order to limit the loss of foreign exchange

earnings and to keep the exporting meat packers from complete bankruptcy, increasingly severe restrictions were placed on domestic consumption.[6] Nevertheless, the damage was already done. By allowing beef prices to decline relatively up to 1969, the authorities had precipitated a significant reduction in herds. When external prices rose in 1970, with a larger cattle stock, the authorities could perhaps have tried to moderate the impact on domestic prices through export taxes. However, with a serious domestic shortage, export taxes would only have increased the squeeze between rising internal and less rapidly rising external prices faced by the meat exporter.[7] Thus the moderate contribution to price stability obtained by declining relative beef prices was won at the price of much greater boost to inflation in a later period.

The relationships of actual to estimated price increases conceal the extent to which the higher prices originated in the livestock sector. In 1970, crop prices did not rise at all and in the manufacturing sector, non-food prices averaged 5 per cent higher while those for food products rose 28 per cent. The 34.3 per cent increase

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[6] The Situation in Argentina, November 2, 1970, p. 3. During September and October the reduction in slaughtering for domestic consumption was successively increased from 15 to 20 and then 30 per cent.

[7] Due to the capital investment required to satisfy the sanitary regulations for exporting, production for export is a separate industry.

in average meat prices for 1970 not only provided a serious boost to inflation by itself but by further distorting the relative income balance, the workings of the inflationary spiral were once again set in motion. Between the first and second halves of 1970, the ratio of rural to non-food manufacturing prices went from 108.9 to 126.4 per cent of its 1966 level and real wages, which in the first half were approximately at their 1966 level, declined 3.5 per cent. Another compensated devaluation, this time of 14 per cent, had little impact on rural prices but lifted the rate of expansion of imported prices from 6.5 per cent in the first half of 1970 to 12.7 per cent in the second.

The rapid price expansion of 1971 represented the efforts of the labor unions and the industrial sector to resist further declines in their relative income shares in the face of continually rising rural prices. Moving away from the price and wage restraints of 1967-1970, the government announced that it would not set maximum prices for goods other than consumer staples and wages increases were once again negotiated through collective bargaining. Massive wage increases and rapidly expanding manufactured goods prices were merely attempts to maintain real wages and to slow the rate of decline of relative industrial incomes. Inflation continued unchecked through early 1973 when, with good crops and cattle herds more than 20 per

cent higher than their June 1970 levels, an incomes policy was again resorted to with some hope that rising rural prices would not ruin attempts to regulate relative income shares. The problem of continually rising world prices for beef remains but with an adequate domestic supply there is some leeway for the use of export taxes without eliminating the supply of meat for export.

Two further aspects of the price stabilization measures should be considered, namely the differential impact of the price agreement and the role of monetary policy. An examination of the implicit price deflators of the different sectors that produce the gross domestic product shows up the uneven impact of the price control measures. Specifically included in the plan were manufacturing and mining products at the level of the producer. The government also owns and sets the price of basic utilities. Once the exchange rate has been set, policy makers maintain some control over the prices of crops which are sown annually through support prices and through export tax changes. Not included in the agreement and beyond control are distribution and retailing, construction, services and the prices of many agricultural products such as fruits, vegetables and dairy products. Table 7-3 gives an indication of the way various industries reacted to the price measures. The companies in categories 5 through 9 were much less governed by the price regulations, nor in

TABLE 7-3.--Per cent Changes in Implicit Price Deflators of GDP at Factor Cost, 1966-1969

		1966	1967	1968	1969	1966-1969
(1)	Ag., hunting, forestry and fishing	12.9	20.2	12.7	10.2	49.3
(2)	Mining	31.6	7.0	6.7	5.3	20.2
(3)	Manufacturing industries	18.9	21.6	5.8	5.2	35.3
(4)	Electricity, gas and water	35.4	37.8	13.4	- 5.6	47.1
(5)	Construction	28.9	28.8	7.6	9.6	51.9
(6)	Commerce, W & R, hotels & restaurants	19.0	27.6	11.0	10.1	55.9
(7)	Transport, warehousing, communications	39.3	28.9	15.6	8.0	56.6
(8)	Finance, insurance & real estate	18.0	26.5	29.5	18.9	94.8
(9)	Services	32.0	26.4	11.9	9.1	54.3
	GDP at Factor Cost	22.9	24.5	10.7	7.6	48.3

Source: Based on data in BCRA, Origen del Producto y Distribución del Ingreso--Años 1950-1969, Supplement to Bóletin Estadístico, January 1, 1971.

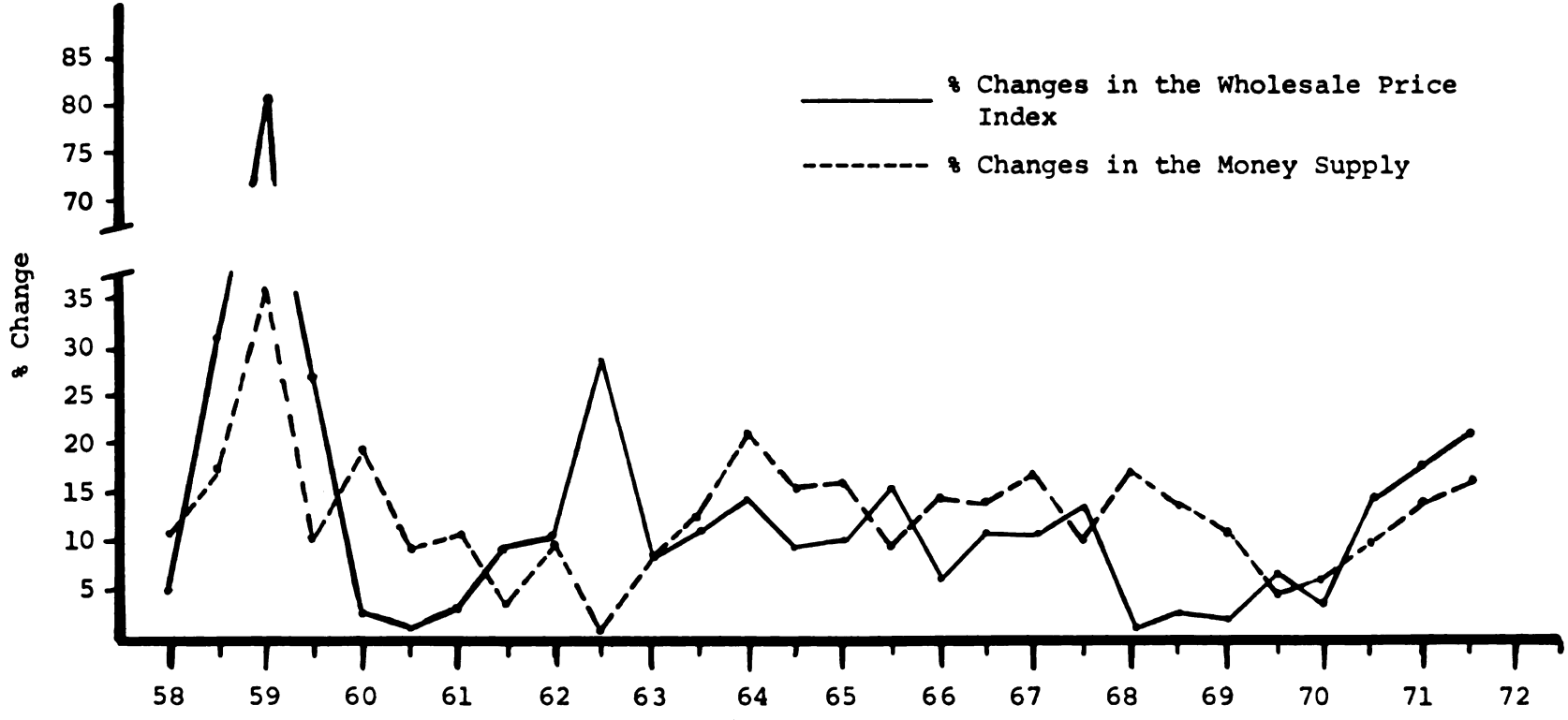
many cases were their workers specifically included in the wage control measures.

In 1967, the highest increases in the implicit price deflators can be traced directly to the stabilization measures, since the steep January increases in utility prices were responsible for the 37.8 per cent increase in the implicit price of electricity, gas and water. The lowest increases were in agriculture, where the export taxes limited the price increases derived from the devaluation, and in mining and manufacturing, both dominated by firms in the price agreement. By focusing on mining and manufacturing the price agreement consistently disadvantaged them relative to the service industries. Weighting by share of the gross national product in 1966, the implicit price deflator for mining and manufacturing increased by 34.6 per cent between 1966 and 1969 while that for the service industries together with wholesaling and retailing grew by 58.3 per cent. Though implicit prices are not available beyond 1969, the success of the price agreement in controlling manufacturing and mining prices in 1970 would suggest that the trend continued as long as the agreement was operative.

The interrelationship between money supply increases and rising prices was discussed in Chapter 4 where in place of Diz's hypothesis of an initial overshooting of prices and later deceleration, an explanation was offered

which linked the money coefficients in the price equation to the characteristics of the Argentine inflationary cycle. The economic performance of the 1967-71 period strongly reinforces this explanation. Figure 7-6 shows the semiannual percentage increases in money supply and wholesale prices for the 1959 cycle as well as the period with which we are dealing. In the first semester of 1967, money supply expansion accelerated in order to accommodate the higher prices coming from the wage increases and the compensated devaluation, while no overshooting of prices took place. By the first semester of 1968, with prices increasing at a much slower rate, money supply growth was increased in order to stimulate demand. Thus the money expansion of early 1967 was linked with declining prices a year later as the price measures took effect. In the second half of 1969, with the viability of the plan called into question, money flowed out of the country and the rate of money supply expansion declined noticeably. When price stability was lost a year later, this decline was negatively associated with a price acceleration two periods later. With no observable overshooting of prices, as in the earlier period the negative coefficient for the lagged impact of money on prices is best explained by forces other than the changing demand for real money balances.

The price measures, then, succeeded up to early 1970 by allowing no increase in real wages as gross



Sources: See Table A5, column 1; and Table A6, column 1.

Figure 7-6.--Semiannual Percentage Changes in the Wholesale Price Index and the Money Supply, 1958-1971

domestic product expanded at an annual rate of 4 per cent or better and by focusing on mining and manufacturing prices which could more easily be controlled. These producers, however, were not caught in a squeeze between costs and prices since their higher costs for labor, materials and services could be passed along in price hikes. Where these measures did not succeed was in limiting inflation rising from the domestic shortage of rural products. When the emphasis of price policy was limiting cost-push inflation, the goal of maintaining relative income shares served to minimize the build-up of inflationary expectations, but with runaway cattle prices this goal became a mechanism for the operation of the inflationary spiral as wage increases sought to maintain the ability to buy meat that was not available.

Stressing the control of prices of standardized industrial goods produced a redistribution of income away from manufacturing, the sector in which any substantial growth would be centered. The terms of the price agreement also meant that resources could not be reallocated within the manufacturing sector in terms of demand considerations since profit margins could not be enlarged on the basis of higher demand pushing up the price of a product. After Aldo Ferrar took office as economics minister in October of 1970, the accelerating inflation that was current was attributed to the

"artificial" price restraints of the earlier period and with the return to collective bargaining and the lack of enforcement of the price agreement, a supposed return to market forces occurred while earlier officials were blamed for the problems at hand. What this came down to was that the price agreement was unworkable in time of rapid inflation and the high wage increases were not granted by government decree.

Increasing Short-term Output

Given the restrictions in 1967 on monetary and fiscal policies, expansion of aggregate demand was to come from the impact of price stabilization on the inflow of long-term private capital and from the expansion of manufacturing production induced by export promotion-measures. Reasons were suggested above why these instruments did not seem likely to succeed and the results achieved justify this skepticism. Table 7-4 gives the ratios of private capital inflows and of changes in the level of manufactured exports to gross domestic product. In 1967, the combination of these two sums made no addition to the gross domestic product. Private long-term capital flows only became a positive force in 1969, the second of two years of above average growth, and at their peak in 1970, they amounted to only 0.4 per cent of gross domestic product. In 1968 the year when export subsidies were at their highest, new manufactured exports were 0.3 per cent of

gross domestic product and thereafter the additions were less significant. Thus with the low base from which manufactured exports increased and given political uncertainty and the absence of a sustained higher growth rate, a significant increase in aggregate demand had to come from elsewhere.

TABLE 7-4.--Ratios of Private Long-term Capital and of New Exports of Manufactures to Gross Domestic Product

Year	Private Long-term Capital/ GDP	New Exports of Manufactures/ GDP
1966	-0.2%	---
1967	-0.1%	0.1%
1968	0.0%	0.3%
1969	0.3%	0.2%
1970	0.4%	0.1%
1971	0.3%	0.1%

Source: Based on data in various issues of Informe Económico and Bóletin Estadístico.

Since the official budget was being employed as an anti-inflationary measure at a time when the economy was well short of full use of productive capacity, there was no attempt to design a budget that came into balance at full employment. Nevertheless, after a measure of price stability was achieved in 1967, a bolder use was made of fiscal policy. While in each year from 1967 to 1970, an

official budget was announced which planned and realized a deficit that shrank relative to gross domestic product, as de Pablo pointed out for 1968 the economic impact of the federal government could differ from the official budget figures.[8] In Table 7-5, the planned and actual budget deficits are presented together with the actual and total deficits relative to gross domestic product.[9] The

TABLE 7-5.--The Fiscal Deficit.

Year	Planned Deficit in Millions of Pesos (%)	Actual Deficit in Millions of Pesos ($)	Actual Budget Deficit/ GDP	Total Deficit/ GDP
1966	---	1375	3.1%	3.3%
1967	1296	992	1.7%	1.3%
1968	485	498	0.7%	1.9%
1969	432	472	0.6%	1.2%
1970	428	593	0.6%	0.9%
1971	773	2260	1.6%	2.1%

Source: Based on data in Informe Económico, No. 4, 1971.

federal government had a clearly contractionary effect in 1967 as real budget expenditures stayed constant and new taxes, particularly those deriving from the taxes on traditional exports, lifted budget revenue as a percentage

[8] J. C. De Pablo, Política Antiinflationaria, pp. 94-99.

[9] The term total deficit indicates the sum of official budget and other sources of government impact on aggregate demand.

of gross domestic product. In addition to the budget restraint on aggregate spending, the social security system exercised a further drag by collecting more than it paid out, yielding a reduction in the total deficit of from 3.3 to 1.9 per cent of gross domestic product.

Though the official 1968 budget called for and realized a deficit reduced to 0.7 per cent of gross domestic product, the total deficit increased from 1.3 to 1.9 per cent due to three factors of equal importance: (1) an increase in government debt to suppliers; (2) foreign borrowing to finance infrastructure projects; and (3) a deficit in the social security system caused by the reduction of collections. In 1969 and 1970, the total budget deficit while declining, stayed above the official budget deficit due mainly to the investment expenditures financed through foreign borrowing. In accord with the relationship specified in Chapter 2, with the return of inflation in 1971, the lag in tax collections caused official budget revenues to lag behind expenditures. The increase in the real deficit was due almost entirely to the 0.9 per cent decline in tax revenues as a percentage of gross domestic product.

A second way in which fiscal policy sought to influence growth was through a government spending mix which greatly increased the share of capital expenditures. In addition to the need to enlarge productive capacity in

government industries, these expenditures would be expected to have a stronger multiplier effect than transfer or wage and salary payments, a portion of which might be saved. This decision was reflected in a 50 per cent increase in government capital expenditures relative to gross domestic product in 1967 and in increases in public construction of 21 and 24 per cent in 1967 and 1968 respectively. The extent of the redirection of government spending is indicated by the fact that between 1966 and 1971 public construction increased by 213 per cent while government consumption rose only 5.2 per cent.

The IMF agreements on monetary expansion placed less restriction on monetary policy than the pursuit of an ostensibly balanced budget did on fiscal policy. The chief instruments of monetary policy in Argentina are the Central Bank's controls over the money supply through reserve requirements and loans to commercial banks. Since the cost of borrowing money is treated as a strong cost push element in the inflationary process, interest rates are not used to manipulate the demand for money but rather fixed at levels so low that they are rarely positive in real terms.[10] As much as was consistent with the limits agreed upon with the IMF, the goal of monetary policy was to

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[10]The failure to use interest rates as an instrument of monetary policy is discussed in Dante Simone, "Sobre Política Monetaria en Alta Inflación," Económica, XVIII, No. 1 (January-April, 1972), 55-70.

maintain a level of liquidity adequate to finance an expanding level of economic activity while having a neutral impact on the price level.

Up to the middle of 1969, while the price measures were highly effective, the real money supply was steadily enlarged without any need for concern about its impact on the price level, and gross domestic product expanded along with it. With price stability called into question by labor unrest in June of 1969 and speculative capital flowing out of the country, in late 1969 and early 1970 economic growth became a less important goal than controlling inflation and monetary policy was directed more toward dealing with the capital outflow and the speculative purchasing of imports. In order to curtail the demand for foreign exchange, the Central Bank followed a policy of limited credit expansion to the private sector, instructing banks to discriminate against large foreign firms which have recourse to outside financial resources. After the capital outflow was reversed in the first half of 1970 and the exchange rate was devalued, monetary policy was again directed toward the now slower growth rate. With the explosive impact of meat on prices in 1971, the money supply was not used to check the inflation but rather to maintain a level a liquidity that would not restrict the operations of the other sectors of the economy.

Tables 7-6 and 7-7 present the rates of expansion of the money supply and its relative sources. In 1967, the 5.3 per cent expansion of the real money supply left the Central Bank well short of the limit agreed on with the IMF since 36.6 per cent of the monetary expansion came from the external sector, a category not included in the restrictions. The contractionary fiscal policy for that year made possible a very sharp reduction of bank credit to the public sector, a category which stayed low as long as the price measures succeeded. The short-term private capital inflow was much smaller in 1968, and since the IMF agreement for that year effectively limited the increase in the nominal money base to 12.9 per cent, the bulk of the 18.6 per cent increase in the real money supply was permitted by lowering the reserve requirements and increasing the money supply expansion possible with a constant money base. Most of the 13.2 per cent increase in the real supply of money during 1969 came in the first half of the year after which, as the minus 19.6 per cent contribution of the external sector to monetary expansion indicates, the monetary authorities did not act to compensate for the funds lost through the capital flight. The price increases in late 1970 nullified the much more rapid monetary expansion at that time and the real money supply did not change for the year. In 1971, as inflation accelerated, the real demand for money declined, permitting a much lower real

TABLE 7-6.--Per Cent Changes in Money Supply Variables, 1966-69

	1966	1967	1968	1969	1970	1971
Per cent change in money supply	35.0	29.8	26.8	10.7	20.0	36.5
Money plus quasi-money	31.4	30.8	30.0	13.1	22.7	38.9
Net bank credit to the public sector	30.2	2.6	8.9	5.8	13.9	18.4
Total banking credit to the private sector	33.5	30.6	44.3	26.2	20.1	46.4
Real money supply	6.8	5.3	18.6	13.2	- 0.7	-10.2

Source: Based on data in various issues of BCRA, Bóletin Estadístico, Buenos Aires.

TABLE 7-7.--Sources of Monetary Expansion, 1966-1969

	1966	1967	1968	1969	1970	1971
Money and quasi-money	100.0	100.0	100.0	100.0	100.0	100.0
External sector	4.2	36.6	8.5	-19.6	18.4	- 9.0
Net bank credit to the public sector	34.8	3.2	3.1	8.5	13.6	22.9
Net bank credit to the private sector	61.0	60.2	88.4	111.1	67.9	86.1

Source: Based on data in various issues of BCRA, Bóletin Estadístico, Buenos Aires.

money supply without causing a recessionary reduction in the level of liquidity.

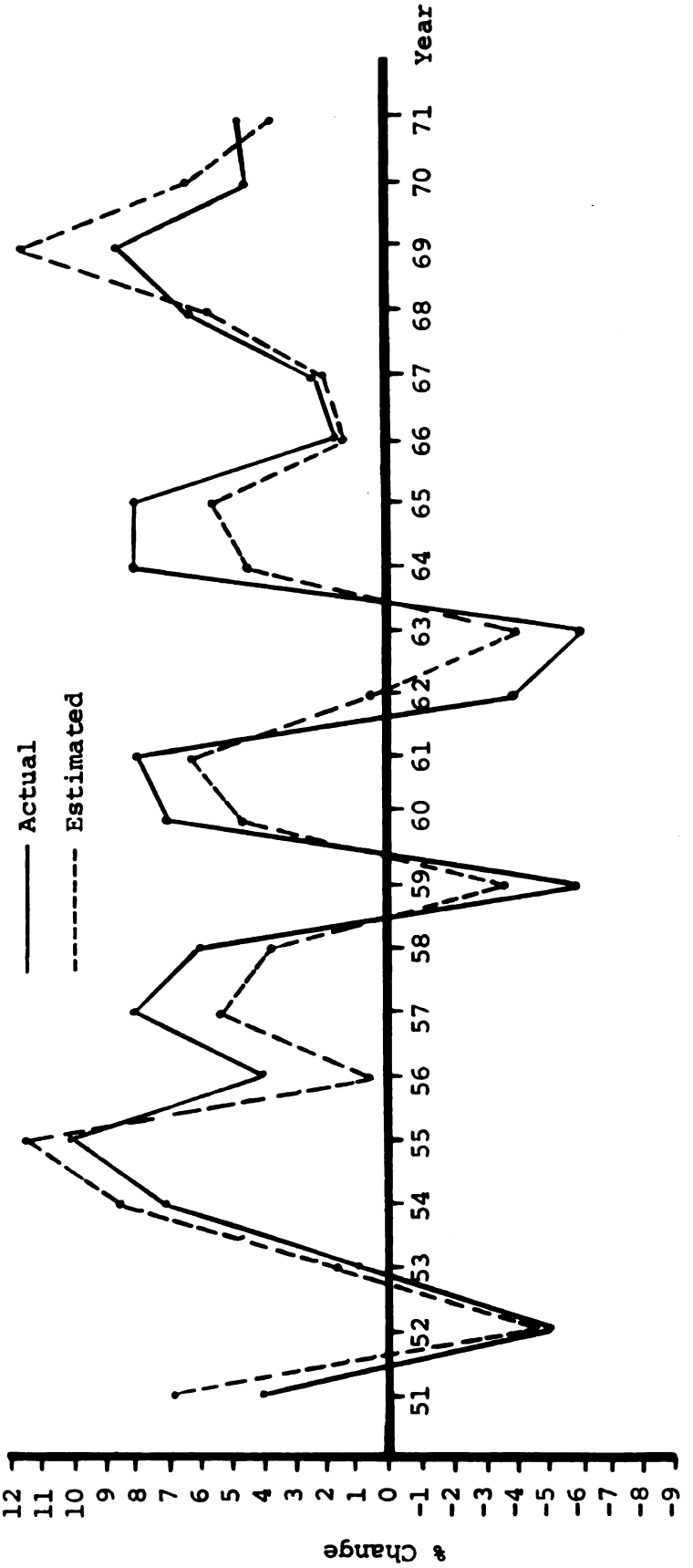
The impact of monetary policy can be seen in terms of the supply function for non-rural output postulated in Chapter 2 and tested in Chapter 3. The variables of the regression are given in Table 7-8 and the actual and estimated values in Figure 7-7. While agricultural output and bank credit increasing more rapidly than wages act as direct stimulus. After price and wage increases were slowed in 1967, during the next two years credit increases of 40.5 and 38.6 per cent at real rates of interest close to zero stimulated production. Given nominal interest rates for loans of a year or more of 23 to 25 per cent in the extra bank market and 8 to 15 per cent in the banking system, the money supply expansion meant that borrowers were able to satisfy a much larger percentage of their credit needs with cheaper bank loans. In 1970 and 1971, rising wage costs and tighter money combined to reduce the credit stimulus to non-rural production without, however, creating the credit squeeze that in 1959 and 1962 contributed strongly to declines in non-rural production of 6 and 4 per cent respectively.

Imports of non-capital goods were a very necessary part of this process. Accepting the notion that in Argentina devaluation cannot greatly increase exports or decrease imports without a significant decline in non-rural

TABLE 7-8.--Variables from the Output Function, 1966-1971 (Percentage Changes)

	1966	1967	1968	1969	1970	1971	1966-71
1. Real output of the non-rural sector	1.6	2.2	6.2	8.6	4.5	4.7	29.0
2. Non-rural sector: bank credit - wages paid	-1.4	5.0	35.9	28.6	3.5	2.4	94.5
3. Imports of non-capital goods (lagged 1/3 period	-1.2	-7.0	1.0	25.4	16.2	6.8	46.2
4. Output of the rural sector	-3.8	4.3	-3.9	4.2	1.5	-2.6	3.3

Sources: Based on data in various issues of Informe Económico and Bóletin Estadístico.



Source: See Table A2, columns 1 and 2.

Figure 7-7.--The Supply of Non-rural Production, 1951-1971

production, this expansion would not have been possible without an exchange policy directed toward the capital account. With the decline in traditional exports and the steady drain of financial service payments, the current account went from a $255 million dollar surplus in 1966 to $15 million dollar deficit in 1968. While exports recovered in 1969, the level of imports could not have been financed without the high level of reserves acquired through the capital inflows of the previous two years. With the current account deficit growing to $135 million in 1970, the stock of reserves and the capital inflow of that year were again important for financing a level of imports 54.0 per cent above the 1963-1967 average. The loss of these reserves meant that the acquisition of necessary imported inputs was put into question until rising world prices for meat and grains created a moderate trade surplus in early 1973. Yet consciousness of the experience of 1963 when the inability to maintain the level of imports sharply reduced non-rural production, prevented any sustained attempts to reduce imports.

As Figure 7-7 indicates, the increased import capacity and credit availability lifted the rate of growth of non-rural production from 2.2 per cent in 1967 to 6.2 per cent in 1968 and 8.6 per cent in 1969. A speculative buildup of imports accounted for the over-estimation in 1969. In 1970 and 1971, the growth rate

declined as higher wages reduced the gap between credit expansion and labor costs. Allowing monetary policy passively to validate the higher rural prices and wages avoided a liquidity crisis and the consequent reduction of output.

Though the agricultural sector accounts for only about 14 per cent of gross domestic product, because of its importance to exports and food prices, the performance of this sector was particularly disappointing. Granting the negative impact of weather on crop production in 1968, 1969 and 1971, much of the difficulty can be traced to policy variables. The research of Reca, discussed in Chapter 3, indicated that the principal determinants of agricultural output have been relative prices and short-term credit, both lagged a year, and technological improvements which he assumes are on a steady upward trend. Table 7-9 lists the increases in output along with indexes for relative prices and short-term capital for the years 1960-71. In the 1961 to 1965 period agricultural output expanded steadily in response to increasing relative prices and, presumably, technological innovations. This growth took place despite credit contractions in 1962 and 1963 which had a depressing effect on non-rural production. Stabilizing the ratio of agricultural to industrial prices with 1966 as the base year put agriculture at a considerable disadvantage relative to these earlier years

TABLE 7-9.--Agricultural Production and Its Principal Determinants, 1960-1971 (1960 = 100)

Year	(1) Index of Agricultural Production	(2) Index of Rural to Non-Rural Domestic Prices	(3) Index of Real Bank Credit to the Agricultural Sector
1960	87.0	104.4	77.8
1961	86.3	100.3	96.4
1962	89.9	107.8	76.7
1963	91.8	115.3	64.7
1964	98.0	117.4	90.4
1965	103.8	98.5	99.2
1966	100.0	100.0	100.0
1967	104.3	100.9	102.9
1968	100.2	101.2	132.4
1969	104.6	104.0	155.6
1970	109.8	106.5	140.5
1971	104.6	115.6	

Source: Based on data in various issues of Informe Económico and Bóletin Estadístico.

of expanding production. In 1968 and 1969 an attempt was made to use increases in real credit in place of relative price incentives with only a moderate impact on output in 1969 and 1970. Poor weather and a cutback in credit expansion lowered the volume of production in 1971.

Table 7-10 presents production increases and relative price changes for the crop and livestock sectors between 1966 and 1971. For the crop sector the only relative price stimulus was in 1969, followed by a 12.4 per cent expansion of output in 1970. Weather, lower real credit and lower relative prices all contributed to the output decline in 1971.

In the cattle sector, the strongest force was the steady decline of prices through 1969 followed by their sudden sharp rise. Thus in 1967, 1968 and 1969 domestic beef production increased in response to lower prices with a particularly strong boost in 1969 when European barriers against Argentine meat were dropped. The higher prices of 1970 and 1971 triggered a build-up of herds with the consequent sharp decline in current production.

Overall, then, the principal instrument for encouraging short-term production increases was the rate of growth of the real money supply. After the increases in private long-term capital inflows and manufactured exports failed to materialize in 1967, a combined policy of concealed deficit spending and strong monetary expansion

TABLE 7-10.--Production and Relative Price Changes for Crops and Beef, 1966-1971 (1966 = 100)

Year	(1) Index of Crop Production	(2) Index of Beef Production	(3) Ratio of Crop to Non-Rural Domestic Prices	(4) Ratio of Livestock to Non-Rural Domestic Prices
1966	100.0	100.0	100.0	100.0
1967	109.7	109.8	100.5	99.2
1968	101.1	110.8	101.0	94.1
1969	103.9	124.3	107.4	92.6
1970	116.8	112.6	95.1	124.4
1971	114.0	86.2	88.8	162.1
1972		93.8		

Source: Based on data in various issues of Informe Económico, Indicadores de Coyuntura, and Bóletin Estadístico. The index of beef production is taken from Review of the River Plate, February 9, 1973, p. 174.

boosted non-rural production in 1968 and, relying more on monetary policy, in 1969. While increases in real credit provided a moderate stimulus to production in 1969 and 1970, using 1966 as the base year for fixing relative prices worked against agriculture. In late 1969, when the stabilization plan was threatened by political disturbances, higher rural prices and capital flight, the policy makers switched the goal for monetary policy away from the growth of output toward combating the capital flight. With the loss of funds decreasing the level of liquidity and a higher cost of forward exchange, speculation against the exchange rate was made more expensive and speculative funds were more difficult to obtain. The problem was that all funds became more difficult to obtain and the use of monetary policy to deal with the capital outflow was felt in the slower growth of non-rural output in 1970 and of rural output in 1971.

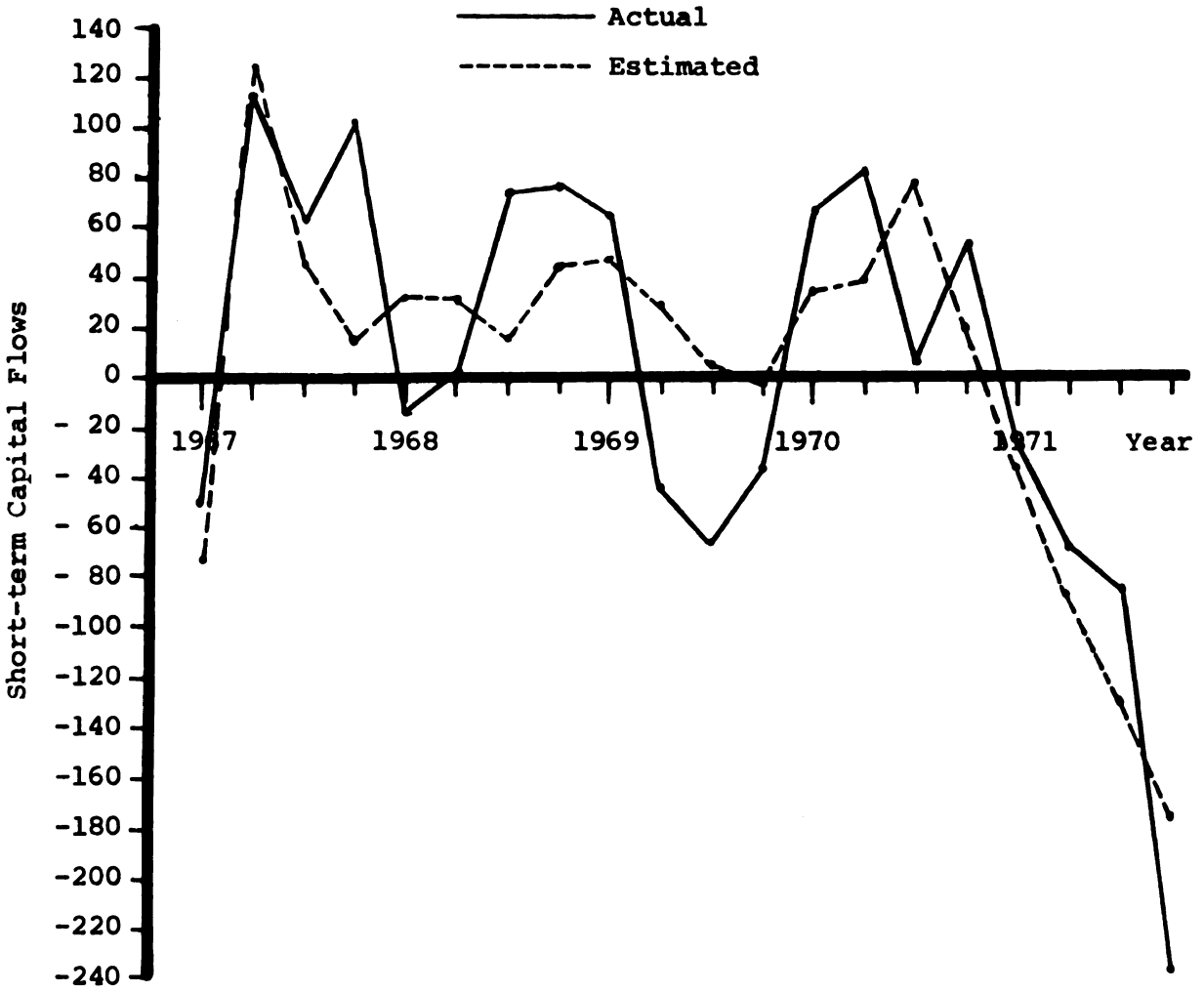
The decision not to deal with the inflation and balance of payments problems of 1971 with expenditure reducing policies meant that non-rural output continued to expand while monetary policy passively validated the inflationary spiral of wage, price and exchange rate increases.

The Balance of Payments

The strategy for the external sector called for an initial building up of the stock of foreign exchange

through capital inflows and earnings from non-traditional exports to be gradually supplemented by greater earnings from traditional export products. This build-up was crucial to maintaining an uninterrupted flow of necessary imported inputs while continuing selected import substitution projects. For reasons indicated above, the big increase in long-term private capital flows and manufactured exports did not materialize nor did the supply of rural exports perform in accordance with the original plan. The chief impact of the stabilization measures on the balance of payments was an inflow of short-term capital which provided a degree of freedom from the foreign exchange constraint for the first time since 1962. With a strong reserve base, imports were able to expand along with domestic production.

The reform of March, 1967, deliberately undervalued the exchange rate in order to bring home speculative capital. The gradual slowing down of prices reduced the cost of holding money in Argentina and added to the inflow of short-term capital. In Chapter 3, it was shown that these capital flows are basically a function of the interest rate differential and of the impact of the current rate of inflation on the prospects of a devaluation. In Figure 7-8, which gives actual and estimated short-term capital flows, the fit is best in those instances where the speculative motive was strongly in operation, namely



Source: See Table A4, columns 1 and 2.

Figure 7-8.--Short-term Flows of Private Capital: Quarterly Data, 1967-71 (in Millions of Dollars)

immediately after the deliberate undervaluing of the exchange rate in 1967 and when domestic inflation lifted the theoretical equilibrium exchange rate well above the actual rate in 1971. The principal deviation of actual and estimated values was in the second and third quarters of 1969 after the June riots in Córdoba forced the resignation of Krieger Vasena as economics minister and created an atmosphere of serious political uncertainty. From 1967 to 1970, however, through slightly higher interest rates on government securities, moderate rates of inflation and the compensated devaluations of March, 1967 and June, 1970, the net balance on short-term capital was 522 millions of dollars.

From June, 1970, to March, 1971, the theoretical equilibrium rose 19 per cent relative to the actual rate, overvaluating it by about 10 per cent. Avoiding the expediency of a single large devaluation, in April a system of mini-devaluations similar to that of Brazil was initiated.[11] The exchange rate would be lowered a few percentage points at a time in response to internal prices rising more rapidly than world prices. This signalled the reversal of a fundamental assumption of the 1967 plan. The devaluation at that time was to be the last because it

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[11]For a discussion of the Brazilian experience, see Edwardo M. Suplicy, "The Effects of Mini-devaluations on the Brazilian Economy" (unpublished Ph.D. dissertation, Michigan State University, 1973).

was believed that inflation could be reduced to a level no greater than that of the U.S. and Europe, Argentina's major trading partners. With the return to a strategy stressing structural bottlenecks, the mini-devaluation scheme provided a means of institutionalizing the inflation that was currently and had been since the late 1940's considerably higher than that of the major industrial countries. The system of mini-devaluations would hopefully eliminate the speculation against the exchange rate due to its large scale overvaluation. Such a scheme would also give the rural and import substituting producers the assurance that their relative prices would not be subject to the steady erosion and subsequent sharp increases that come from periodic large devaluations.

The problem with the institution of this scheme was that it did nothing about the initial overvaluation of the exchange rate and then proceeded to increase the exchange rate much more slowly than the rate of domestic inflation. Consequently, the possibility of considerable future devaluation of the peso was increased by the mini-devaluation scheme. In addition, as inflation accelerated, from mid-1970 on domestic interest rates increased only marginally,[12] causing the real rate of interest at home to

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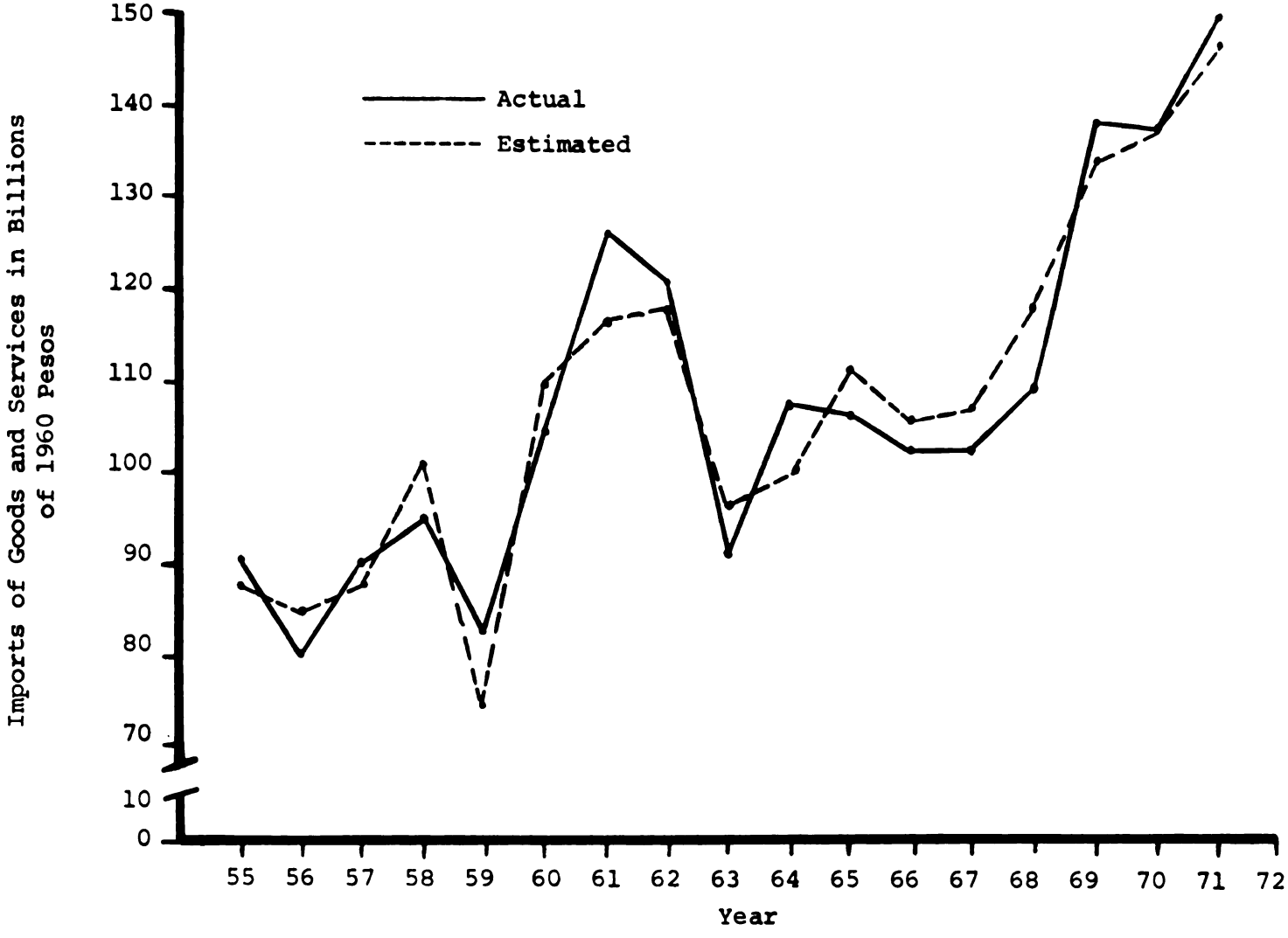
[12]The rate on 180-day treasury bills went from 9 per cent in January of 1970 to 13.8 per cent in December of 1971. Source: various issues of Bóletin Estadístico, BCRA.

return to strongly negative rates. Deflating by increases in the wholesale price index, the real rate of interest on 90-day treasury bills went from 1.6 per cent in the first quarter of 1970 to -13.9 per cent in the first quarter of 1971. Thus in the second quarter of 1971 when the mini-devaluation scheme was inaugurated with its one and two per cent devaluations, in addition to the increasing over-valuation of the exchange rate, the real rate of interest on 90-day treasury bills was -14 per cent and the positive covered interest differential disappeared for the first time since the first quarter of 1970. Thus the motivation for getting funds out of the country was extremely strong and for the remainder of the year it grew as the real rate of interest continued to fall, the increasingly larger mini-devaluations failed to keep pace with inflation and the covered interest differential grew more negative. Despite controls, the net outflow of short-term capital accelerated as the year went on, largely through the timing of short-term debt payments. Thus, by the end of 1971, the capital that had been drawn in by undervaluation of the exchange rate and real rates of interest close to zero had been lost by an overvalued exchange rate and high negative real rates of interest.

Exchange reserves were greatly helped by the earlier capital inflow and despite the limitation erratic rural production placed on exports, up to September, 1971,

imports were able to fluctuate with production. Figure 7-9 gives the estimated and actual changes in import demand for 1955 to 1971. The period was one of rapid growth of imports, stimulated by the expansion of domestic production. In 1967, the 3 per cent increase in absorption was counter-balanced by a 13.5 per cent increase in the relative price of imports while total absorption 5.5 per cent higher in 1968 was the principal force behind a 6.2 per cent increase in imports. The 24 per cent increase in 1969 overshot the estimated increase, apparently due to the speculative tendency responsible for the outflow of short-term capital. With an 8.5 per cent increase in total absorption, imports of raw materials and intermediate products increased 37.9 per cent in dollars terms. This build-up of stocks had its impact in 1970 when actual imports declined despite a 4.2 per cent increase in absorption. The 1971 estimated increase of 8.8 per cent would not be so close to the actual one if strict import controls in the last quarter had not held down the speculative building up of imports which had been encouraged by a 10.0 per cent reduction in relative import prices as the exchange rate failed to keep pace with domestic inflation.

Other factors besides absorption and relative prices affected imports during this period. Though the plan was supposed to involve a move away from an import substituting strategy, the growth of import substituting



Source: See Table A3, columns 1 and 2.

Figure 7-9.--The Demand for Imports, 1955-1971

capacity grew by 43.6 per cent between 1966 and 1971, greatly reducing import demand. Also, the dollar figures for imports of goods and services grew much more rapidly than the constant peso figures due to rising world prices. Over the 1966 to 1971 period, the ratio of dollar to constant peso imports of goods and services increased 14 per cent, contributing to the current account deficit.

As the balance of payments figures in Table 7-11 show, while total exports generally followed the movements of rural supply, the behavior of non-traditional exports introduced a slight upward trend. Experiencing the same downturns in 1968 and 1971 as rural supply, traditional exports in 1971 were 98 per cent of their 1966 level and agricultural production was 103.2 per cent of its 1966 figure. Yet due to a 148 million dollar increase in non-traditional exports, the overall level rose by 9.2 per cent.

Except for a 4 per cent dip in 1967, world prices for Argentine exports of goods and services were above their 1966 level with the higher meat prices of 1970-1971 bringing the ratio of dollar to peso exports in 1971 to 107.9 per cent of its 1966 level. Despite these increases, by 1971 the much higher import prices had reduced the overall terms of trade to 90.5 per cent of their 1966 level.[13] In addition to the increasing burden of the

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[13]For terms of trade data, see page 264 of the Statistical Appendix.

TABLE 7-11.--Balance of Payments, 1966-1971 (in Millions of Dollars)

	1966	1967	1968	1969	1970	1971
A. Goods and Services	256	177	- 14	- 219	- 137	- 395
Goods	469	369	199	36	87	- 129
Exports	1593	1465	1368	1612	1773	1740
(Non-traditional)	95	108	157	209	243	276
Imports	1124	1096	1170	1570	1685	1869
Services	- 213	- 192	- 213	- 255	- 224	- 266
Investment income	- 151	- 119	- 142	- 159	- 223	- 256
B. Unilateral Transfers	- 3	- 3	- 4	- 4	- 3	- 3
C. Capital (Non-compensatory)	- 210	244	175	160	390	- 181
Private sector	- 213	233	128	- 7	307	- 324
Long-term	- 37	- 22	- 5	72	93	79
Short-term	- 177	254	134	- 79	214	- 403
Public sector	5	- 1	75	103	88	128
National government	5	1	76	102	83	125
D. Errors and Omissions	- 18	- 3	3	8	8	17
E. International Payments	24	415	160	- 110	260	- 563
Change in reserves	- 5	480	57	- 260	185	- 385
Compensatory capital	28	- 65	102	150	134	- 131
SDR's	--	--	--	--	- 59	- 47

Source: Various issues of Bóletin Estadístico and Informe Económico.

terms of trade, from 1966-71 the out-payments connected with foreign investment, averaged 175 million dollars a year or 11 per cent of average yearly exports.

The balance of payments picture for this period then was one of exports failing to keep pace with the rapid growth of imports together with the outflow of service payments. The result was a decline in the current account balance from plus 256 million dollars in 1966 to minus 395 million in 1971. Through 1970, non-compensatory capital inflows provided the reserves necessary to finance the higher level of imports, largely through the successful manipulation of short-term capital flows, though the combination of government and private long-term inflows provided almost two hundred million dollars a year in the period 1969-1971. At the end of 1970, foreign exchange reserves were still 91 per cent of their 1968 peak. However, when the trade balance turned negative in 1971 and the government refused to add to the mounting inflation by devaluing, the likelihood of losses through future devaluations and an increasingly negative real rate of interest caused a 400 million dollars outflow of short-term capital that cut foreign exchange reserves in half. Without higher domestic interest rates to keep capital at home, the policy of mini-devaluations was introduced too late and too gingerly to make a difference.

CHAPTER 8

SUMMARY AND CONCLUSIONS

As the new government of Juan Perón sought to find a set of policies with which to tame the most rapid inflation in Argentine history, it showed an inclination to revive the stabilization plan of 1967. In the light of selected special features of the economy this dissertation has been an attempt to assess the success and subsequent failure of the 1967 plan.

The special features we have postulated appear to have been the underlying assumptions of stabilization policy in 1967. The high level of available protection shields most manufactured products from import competition and the essential nature of the remaining imported goods causes import demand to be income elastic and price inelastic. This, together with the low price elasticity of supply of rural exports in the short-run, makes devaluation an ineffective tool for dealing with balance of payments problems. At the same time, short-run capital flows are responsive to interest rate differentials and to the likelihood of a devaluation in the near future. Inflation is

due not so much to excess demand created by too rapid an expansion of the money supply as a struggle over income shares carried on through wages, the exchange rate and the ability of the highly concentrated manufacturing sector to raise prices without fear of competition. Finally increases in domestic manufacturing production have proved to be extremely sensitive to the rate of growth of bank credit and the availability of imported inputs.

While in some instances existing estimates were cited as support for these contentions, several tests were conducted. Previous estimates of the import demand function, done on the basis of data transformed into first differences, showed the income variable as the single significant determinant. A respecification of the equation which took account of the impact of long-term capital inflows was undertaken. A proxy variable for the import intensiveness of these flows was introduced, and, to allow for the effect of past foreign investment on current service payments, total imports of goods were used as the dependent variable instead of total imports of goods and services. With these changes, not only do we obtain the high income and low price elasticities postulated but, in addition to the income variable, the import intensiveness of capital flows and import substituting capacity are also significant and the relative price variable is marginally significant. Regression analysis also shows fluctuations

in non-rural output to be closely associated with changes in non-capital goods imports and with the difference between increases in bank credit and increases in wages to this sector. Thus attempts to improve the trade balance through import restrictions and to check inflation by curtailing the money supply would sharply reduce non-rural output. In tests of the determinants of short-run capital flows, two-thirds of the variation in the dependent variable was explained by interest rate differentials between Argentina and the United States and, with greater significance, the difference between the actual exchange rate and the theoretical equilibrium of exchange taken as a proxy variable for the likelihood of a devaluation.

In fashioning a price equation that would link the rate of inflation with the policy variables, an attempt was made to explain the contradictory regression results of Diz and Alejandro. Diz had found that money supply changes and expectations concerning the cost of holding money were the principal determinants of the rate of inflation, and that wage and exchange rate changes added little to this explanation. Studying roughly the same period, Alejandro contended that wage and exchange rate changes were the chief forces spurring the inflation and that money exercised a passive role. To reconcile these results, an equation was tested in which Diz's expectation variable, put on a semiannual basis, was used along with

Alejandro's changes in the semiannual averages for wages and the exchange rate. With this equation, the expectations variable was insignificant and the highest positive coefficient for the money supply was significant at about the 5 per cent level. At the same time the coefficients for changes in wages and the exchange rate were all significant at well under the 5 per cent level. The significance of Diz's proxy variable for expectations we attributed to the failure of his particular wage and exchange rate variables to capture the variation in prices they cause. Also, where Diz attributed the negative and highly significant coefficient for the money supply lagged two periods to the deceleration of prices after an initial overshooting, we contend that a more plausible explanation is to be found in the interaction between the passive character of monetary policy and the temporary decline in inflation achieved after the initial impact of the stabilization measures has been absorbed. Though not discounting the essential relationship between price and money supply increases, the various price regressions demonstrate the strong and active influence that wage and exchange rate changes have exercised on the price level.

The stabilization plan enacted sought to succeed by taking into account these special features. Rather than employing expenditure switching policies, improvement

in the balance of payments was sought through a compensated devaluation aimed at manufactured exports and at short-term capital flows. Instead of a cut in the real money supply and real government expenditures, the price policy attempted to regulate relative incomes through export taxes introduced with the compensated devaluation, a voluntary agreement that tied higher prices to cost increases, and a freezing of wages after initial increases designed to take into account recent past and anticipated increases in the cost of living. An attempt was made to avoid a downturn in non-rural output by maintaining imports and real credit. The 40 per cent devaluation was in part compensated by a reduction in tariffs and, though an agreement with the IMF on the upper limit of government credit and net central bank credit was used to obtain standby loans, cuts in real private borrowing would be avoided in the inflow of short-term private capital materialized. By means of the tariff reform, the taxes on traditional exports and the subsidies for manufactured exports, a move was to be made toward a more efficient resource allocation, greater import competition and the diversification of exports.

In assessing the impact of this program, we concluded that the measures designed to change the structure of protection were only moderately successful while the stabilization plan quickly approached its short-term goals.

Within the manufacturing sector, the policy-induced reallocation of resources brought the continued expansion of import substitution in some intermediate products. The early years of the program, 1966-68, saw moderate increases in the relative effective protection of food and agricultural products that were policy induced but which did not obviously affect production. After 1970, a domestic beef shortage and higher world prices for beef and cereals produced higher relative rates of effective protection and, in time, a significant increase in the production and export of these products.

Converting the effective protection rates to a net basis by taking account of the overvaluation of the exchange rate due to protective measures, the steady decline in the bias against exports in export industries is apparent. For import-competing goods the picture is less even. A comparison of net rates of effective protection and of the aggregate import/consumption ratios for 1966 and 1968 shows that the compensated devaluation did not increase the pressure of import competition. However, the same figures over the 1968-1970 span do show lower net effective protection and a higher import consumption ratio. The import consumption ratio rose again in 1971, but the import restrictions produced by the foreign exchange crisis later that year were mirrored in a lower ratio for the first three quarters of 1972.

While the bias against production of manufactures for export as opposed to domestic use was considerably reduced between 1966 and 1968, a regression analysis of the determinants of exports of manufactures suggested that the considerable increase that did take place was more the result of expanding world trade than of domestic export subsidies. The subsidy program itself succeeded in overcoming the bias against exporting due to internal taxes and an overvalued exchange rate, particularly in the 1966-68 period. However, given the negative impact of the long-term import substitution strategy on manufacturing efficiency, the low price elasticity of supply of manufactured exports implies that future export expansion through subsidies will be very expensive in terms of domestic resources and that efforts should be concentrated instead on increasing manufacturing efficiency.

The stabilization measures were initially quite successful in achieving the short-run goals of reduced inflation, faster growth and a balance of payments surplus, but this quick success turned out to have been won at the price of longer term stability. With the voluntary price agreement in force, fixed rates for wages and the exchange rate very soon limited the inflationary pressures. Once the inflation was under control, the expansion of output through the use of commercial bank credit was much more successful for non-rural than rural output.

The March 1967 devaluation which, in order to limit its impact on domestic prices had been compensated by reduced import tariffs and greatly increased export tariffs, still provided enough of a short-term capital inflow to reduce the import constraint.

This quick success proved to be somewhat costly in the longer term. With relative agricultural prices fixed considerably below their 1963-64 peak, a rapid expansion of real credit proved unable to secure the growth of rural production. The need to curb speculation against the exchange rate had led policy makers to promise to maintain the rate instituted in 1967. When speculation did arise in late 1969, it was treated with a tightening up on the money supply which caused the reduction of output in 1970. It proved impossible to move away from the controls of the incomes policy because of the impact on expectations of the steady decline of the real wage and the failure to use increased import competition to limit the monopoly power of domestic producers.

The use of steadily declining relative meat prices aided the stabilization effort up through 1969, but in mid-1970 rising external prices moved the cattle cycle into the stage in which animals are retained in order to increase the size of herds. Because herds had been so depleted by the price policies pursued thus far, the authorities could do little to control the rising price of

meat. While some kind of reversal of beef prices and supply was inevitable, the fact that sharply higher external prices would precede and aggravate the extent of the price hike and supply reduction was far less predictable. Once rising meat prices began to affect the cost of living, the policy of maintaining relative incomes became an inflationary force as higher wages were granted to overcome the increased cost of food and then employers used the higher wages as a justification for raising prices.

Without strong popular support, the military government had fashioned an economic program that would meet with minimal resistance and rapid success. The design and implementation of the plan displayed insight into the workings of short-term fluctuations, but because of the fear of generating unfavorable economic expectations economic policy was carried out within an outmoded framework of an ostensibly balanced budget, low interest rates, and a "permanent" exchange rate. Acceptance of these policy limitations left the authorities short of tools with which to deal with the many goals of policy. Also, due most likely to the lack of a clear political mandate, the short-term goals of employment and price stability were chosen in favor of the longer-term target of reallocating domestic resources in a way that would stress comparative advantage over substituting for imports.

After the collapse of the stabilization effort, it became increasingly clear that the military government could not enlist the cooperation necessary to curtail inflation or make significant modifications in the economic structure. With a political strategy of an orderly preparation for the elections that would return the country to civilian rule in March of 1973, the economic policy was to achieve the highest possible output while not alienating any economic class. Thus, in 1972 average wholesale prices were 76 per cent higher as government validated the efforts of the different income groups to keep up with rising agricultural prices.[1] The chief problem was obtaining the foreign exchange with which to continue meeting international payments, and, to this end, relative import prices were raised 19 per cent and meat exports were protected by restricting the domestic consumption of beef. Payments difficulties were considerably eased by the much higher external price of beef. Despite these considerations, the foreign exchange position was precarious all year with reserves averaging 310 million dollars as opposed to 572 million dollars in the 1970-71 period.[2] In early 1973, after a good grain harvest and

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[1]Data on 1972 price changes are taken from the United Nations publication, Monthly Bulletin of Statistics.

[2]International Monetary Fund, International Financial Statistics, October, 1973, pp. 46-47.

with an increased number of cattle being sent to market, the export picture greatly improved and by June Central Bank reserves had risen to 817 million dollars.[3]

Nevertheless, neither the inflation nor the exchange shortage precipitated measures that would restrict non-rural output. The level of dollar imports remained constant, indicating only a moderate decline in the import/consumption ratio, and the quantity of real credit to this sector grew by 9.0 per cent.[4] In response, gross domestic product, led by a 6.4 per cent increase in manufacturing production,[5] grew by 4.1 per cent.[6]

With the return of Juan Perón to power in May of 1973, a stabilization effort similar in some respects to the one studied here has been undertaken. Once again the government has assumed control of incomes and seeks to eliminate the deficits of state enterprises by raising the rates they charge. Where the 1967 plan was weakened by the need to achieve short-term success, the Perón government has a popular base that gives its measures far greater

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[3] Ibid., p. 47.

[4] BCRA, Bóletin Estadístico (January, 1972), 28 and 34; (February, 1973), 28 and 34; and Review of the River Plate, January 31, 1973, p. 122.

[5] IMF, International Financial Statistics, October, 1973, p. 46.

[6] Review of the River Plate, March 30, 1973, p. 428.

acceptance. If judged in the light of what was fearfully expected by the political opponents of Peronism, the new program appears moderate and conciliatory. However, evaluated in terms of previous economic experience, the measures seem to tred close to some old pitfalls.

The cornerstone of the new program appears to be a quick and large redistribution of income toward the working class by means of " . . . higher taxes, control of prices, an exchange rate divorced, as far as possible, from market forces and very stringent enforcement of all measures taken."[7] Since the wage share in the national income has declined from 50.2 per cent in 1952 to 43.0 per cent in 1967 and 36.1 per cent in 1972, a redistribution of income toward that sector is hardly a new and radical socialism. The aim of the incomes policy is to prevent the employers from passing on higher wages in price changes as they have done in the past. Where the 1967 stabilization effort was principally at the expense of the wage earner, this time the burden is to fall more directly on industrial and agricultural producers. The price aspect of the agricultural policy is alarmingly similar to the 1967 approach in that a deliberate 15 per cent cut in the price of beef and, to all appearances, lower relative agricultural prices are being used to

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[7] Ibid., June 12, 1973, p. 830. The description of the new economic policies is taken from this and subsequent issues of this publication.

maintain real wages. As part of the across-the-board control of wages and prices, the government is to maintain the landowner's income by controlling not only his price but also his costs, including the provision of cheap credit through index linked loans. An additional stimulus to production is to be the introduction of taxes on the potential yield of the land.

The industrial producer also faces higher taxes and wages along with fixed prices and, with the 12 per cent wage increase, his costs will most likely rise faster than his prices.

The program is beginning under quite favorable circumstances. Exchange reserves are high and the growth of gross national product appears to have exceeded 6 per cent in the first half of 1973. Whether the squeeze on profits will bring the hoped for increase in efficiency remains to be seen. If by nothing other than decree, the program will temporarily check the runaway inflation, but how high the cost will be in terms of the disruption of viable cost-price relationships will depend on the skill with which the price controls are administered. The agricultural price policy and the over-valued exchange rate are not good signs and, given the nationalistic orientation of the new government, it is not likely that there will be a renewed effort to reallocate resources away from inefficient manufacturing industries by means of greater import competition.

STATISTICAL APPENDIX

STATISTICAL APPENDIX

TABLE A1.--Annual Growth Rates of Real Gross Domestic Product at Factor Cost (percentage changes from previous year)

Year	Per Cent
1946	8.3
1947	13.7
1948	1.2
1949	- 4.6
1950	1.5
1951	3.9
1952	- 5.1
1953	5.4
1954	4.1
1955	7.1
1956	2.8
1957	5.1
1958	6.3
1959	- 6.5
1960	7.9
1961	7.1
1962	- 1.7
1963	- 2.4
1964	10.4
1965	9.1
1966	0.7
1967	2.5
1968	4.6
1969	7.9

Sources: BCRA, Origen de Producto y Composición del Gasto Nacional, Supplement to Bóletin Estadístico, June 6, 1966, p. 14; and BCRA, Origen del Producto y Distribución del Ingreso--Años 1950-69, Supplement to Bóletin Estadístico, January 1, 1971, pp. 30-31.

TABLE A2.--Regression Data for the Supply of Non-rural Output, 1951-1971 (percentage changes from previous year)

Year	(1) Estimated Gross Output of the Non-rural Sector	(2) Actual Gross Output of the Non-rural Sector	(3) Bank Credits to the Non-rural Sector	(4) Basic Wage Paid in the Non-rural Sector	(5) Non-capital Goods Imports Lagged 1/3 of a Year	(6) Gross Output of the Rural Sector
1951	6.8	4.0	36.0	19.0	8.0	6.0
1952	- 4.7	- 5.0	10.0	28.0	-14.0	-15.0
1953	1.7	1.0	11.0	4.0	-27.0	29.0
1954	8.6	7.0	21.0	17.0	27.0	0.0
1955	11.6	10.0	24.0	3.0	30.0	4.0
1956	0.5	4.0	28.0	37.0	- 2.0	- 4.0
1957	5.3	8.0	18.0	3.0	6.0	0.0
1958	3.8	6.0	31.0	47.0	11.0	5.0
1959	- 3.9	- 6.0	18.0	70.0	- 3.0	- 1.0
1960	4.5	7.0	36.0	18.0	1.0	0.0
1961	6.2	8.0	30.0	24.1	16.0	- 2.0
1962	0.5	- 4.0	12.0	25.0	- 3.0	1.0
1963	- 4.0	- 6.0	13.0	25.1	-23.0	- 2.0
1964	4.4	8.0	23.0	31.9	7.0	10.0
1965	5.5	8.0	25.0	36.0	13.0	10.0
1966	1.5	1.6	31.9	33.3	- 1.2	- 3.9
1967	2.1	2.2	34.6	29.6	- 7.0	4.3
1968	5.9	6.2	40.5	4.6	1.0	- 3.9
1969	11.5	8.6	38.6	10.0	25.4	4.2
1970	6.4	4.5	21.3	17.8	16.2	1.5
1971	3.7	4.7	40.3	37.9	6.8	- 2.6

Sources: Data for 1951-65 are taken from Maynard and Van Rijckeghem, "Stabilization Policy in an Inflationary Economy--Argentina," p. 213. Data for 1966-71, various issues of Bóletin Estadístico and Informe Económico.

TABLE A3.--Data for Import Demand Regressions, 1955-71

Year	(1) Estimated* Imports of Goods and Services	(2) Actual* Imports of Goods and Services	(3) Imports of* Goods	(4) Total* Absorption	(5) Relative Prices	(6) Import* Substituting Capacity	(7) Long-term Capital Inflow/Gross Domestic Investment
1955	9,780	10,037	8,983	89,080	.728	12,205	.024
1956	9,520	8,976	8,240	89,280	1.010	12,485	.066
1957	9,770	10,014	9,276	94,350	.898	13,601	.033
1958	11,040	10,447	9,549	100,430	.843	15,027	.039
1959	8,400	9,250	8,094	92,250	1.042	15,170	.039
1960	11,970	11,405	9,706	101,790	.993	17,486	.106
1961	12,600	13,561	10,401	111,870	.873	19,404	.060
1962	12,750	13,025	10,720	106,190	.911	19,896	.109
1963	10,660	10,139	7,827	100,530	.879	19,896	.070
1964	10,940	11,770	8,298	113,770	.795	21,759	.000
1965	12,110	11,640	9,708	122,910	.792	24,122	.001
1966	11,510	11,270	8,250	122,380	.793	24,354	-.013
1967	11,680	11,270	8,103	125,830	.900	24,643	-.007
1968	12,740	11,950	7,791	132,720	.886	26,506	-.002
1969	14,380	14,880	10,386	143,950	.935	29,993	.019
1970	14,760	14,792	10,517	149,550	.963	32,594	.023
1971	16,060	16,254	11,670	158,200	.867	35,379	.018

Sources: Columns (2) and (4): BCRA, Bóletin Estadístico, June, 1972, pp. 100-101; and Informe Económico, 1971, No. 4, Statistical Appendix, p. 1. Column (3): BCRA, Bóletin Estadístico, June, 1972, pp. 100-101; and Informe Económico, 1971, No. 4, Statistical Appendix, p. 1; plus various issues of International Financial Statistics. Column (5): Various issues of Bóletin de Estadística. Column (6): BCRA, Origen de Producto y Composicion del Gasto Nacional, Supplement to Bóletin Estadístico, June 6, 1966, pp. 26-27. Column (7): See Table 3-6 on page 60 of Chapter 3.

*In terms of millions of constant 1960 pesos.

TABLE A4.--Regression Data for Short-run Capital Flows, 1966-71

Year and Quarter	(1) Estimated Net Short-run Capital Flow in Millions of Dollars	(2) Net Short-run Capital Flow in Millions of Dollars	(3) Covered Interest Rate Differential Between the U.S. and Argentina	(4) Actual Exchange Rate Minus the Theoretical Equilibrium of Exchange
1967 I	- 71.3	- 50.7	-8.6	.15
II	126.1	114.6	2.6	.51
III	43.0	62.5	-2.4	.25
IV	16.7	101.5	-3.7	.15
1968 I	31.6	- 14.7	-2.7	.19
II	30.3	--	-3.0	.20
III	17.0	73.3	-3.5	.14
IV	45.1	76.9	-0.7	.16
1969 I	49.2	68.8	-0.9	.20
II	30.0	- 44.1	-1.4	.10
III	5.4	- 65.9	-2.5	.00
IV	- 0.7	- 37.3	-4.5	.08
1970 I	35.1	68.3	-0.5	.08
II	40.4	82.7	0.1	.08
III	79.9	7.7	2.2	.22
IV	20.0	55.5	1.6	-.15
1971 I	- 34.3	- 27.5	0.3	-.44
II	- 88.3	- 68.6	-3.1	-.60
III	-106.1	- 82.2	-6.9	-.49
IV	-173.2	-224.9	-9.3	-.80

Sources: Column (2): Various issues of Informe Económico. Column (3): (a) Argentine rates of interest on 180-day treasury bills are taken from various issues of BCRA, Bóletin Estadístico; (b) U.S. rates of interest on 180-day treasury bill are taken from various issues of Board of Governors of the Federal Reserve System, Federal Reserve Bulletin; and (c) the cost of 180-day forward exchange is taken from various issues of Bank of Boston, The Situation in Argentina. Column (4): Various issues of Organizacion Techint, Bóletin Informativo.

TABLE A5.--Rates of Inflation for Basic Price Indexes and the Cost of Living, 1950-71 (per cent change in semiannual averages)

		(1) Wholesale Price Index	(2) Rural Price Index	(3) Price Index for Non-rural Domestic Goods	(4) Price Index for Imported Goods	(5) Cost of Living
1950	I	7.4	3.9	9.4	6.8	10.2
	II	13.4	16.2	12.0	13.2	12.6
1951	I	26.6	34.6	20.4	34.1	14.9
	II	21.7	10.6	26.8	26.3	24.7
1952	I	14.0	6.4	17.8	14.4	21.8
	II	9.6	12.0	10.2	4.0	5.2
1953	I	6.3	13.3	4.1	2.4	2.4
	II	1.8	2.2	1.9	0.4	- 2.0
1954	I	- 0.5	- 1.7	0.0	- 1.6	0.1
	II	5.4	3.1	6.6	- 0.1	9.6
1955	I	3.5	- 0.2	4.5	5.7	5.5
	II	5.3	8.0	3.9	11.3	3.5
1956	I	16.2	25.4	10.4	46.4	6.8
	II	11.4	17.8	9.0	11.4	8.9
1957	I	9.1	5.9	11.0	1.0	10.7
	II	16.1	19.1	15.2	8.1	16.1
1958	I	5.4	1.2	7.4	3.1	8.0
	II	31.6	43.1	27.4	31.6	26.8
1959	I	81.0	86.6	76.7	113.4	65.1
	II	27.2	28.3	26.9	24.8	31.5
1960	I	2.6	- 1.1	4.2	3.4	10.4
	II	1.0	2.6	0.5	- 2.2	3.0
1961	I	2.7	- 1.6	5.0	- 2.3	5.8
	II	9.8	12.8	9.2	0.1	11.4
1962	I	10.4	7.6	11.4	13.9	10.7
	II	25.6	40.1	19.2	33.8	19.5
1963	I	9.5	7.4	10.9	5.1	8.2
	II	11.2	15.6	9.7	2.1	10.7
1964	I	14.7	16.1	14.5	8.0	12.1
	II	9.1	7.0	10.2	8.9	7.4
1965	I	10.2	- 1.2	15.3	16.6	13.2
	II	15.4	14.5	15.9	13.4	19.4
1966	I	5.8	4.9	6.3	4.1	14.3
	II	11.5	16.3	9.5	14.6	12.0
1967	I	11.9	6.4	13.3	27.7	13.3
	II	13.2	19.9	10.6	11.6	16.0
1968	I	1.8	- 1.8	3.5	- 1.0	6.2
	II	2.4	3.6	1.8	3.9	3.8
1969	I	1.8	0.7	2.0	5.5	3.4
	II	6.5	13.4	3.7	6.0	4.3
1970	I	3.2	- 0.7	4.8	6.5	5.6
	II	14.2	19.3	12.2	12.7	10.6
1971	I	17.3	18.6	17.6	3.9	18.1
	II	22.9	29.1	20.0	23.6	17.2

Sources: Columns (1)-(4): BCRA(3), September, 1962, pp. 51-62 (1950-56), Monthly Bulletin of Statistics (1956-57); DNEC Indices de Precios al for Major, October, 1960, 1957-59; DNEC, Bóletin Mensual de Estadística (1959-62); DNEC, Bóletin de Estadística (1962-1971). Column (5): DNEC, Costo de Nivel de Vida en la Capital Federal, 3rd ed., March, 1968, pp. 47-51 (1950-1962), and DNEC Costa de Vida, 1962-71.

TABLE A6.--Independent Variables for the Inflation Regressions, 1950-71

	(1) Money Supply	(2) Exchange Rate	(3) Basic Wage Rate	(4) Real Supplies	(5) Residuals (δ = .2)	(6) Expected Rate of Price Change
1950 I	12.9	9.4	17.1	- 2.0	--	--
II	11.0	31.0	5.4	3.4	3.6	0.0
1951 I	16.1	8.5	17.2	- 0.5	3.3	14.3
II	7.6	17.8	6.8	7.8	38.8	38.6
1952 I	5.6	- 4.4	15.5	- 5.0	12.9	15.6
II	5.5	4.0	9.0	-15.0	15.1	0.7
1953 I	17.2	4.4	4.3	9.9	- 5.2	- 5.6
II	7.3	-14.8	- 1.6	7.1	-11.0	- 9.0
1954 I	10.1	11.3	5.7	- 3.5	1.7	-16.4
II	5.3	0.0	17.3	12.4	5.2	-19.6
1955 I	10.9	1.2	3.5	4.0	- 2.7	- 6.1
II	4.5	20.3	- 0.5	- 3.4	- 5.7	- 9.1
1956 I	12.9	88.8	12.5	5.5	- 4.3	- 5.7
II	4.6	20.3	2.0	- 6.6	- 7.7	27.3
1957 I	13.9	18.3	41.3	7.5	2.3	7.1
II	1.1	3.7	- 9.1	4.3	-13.8	0.0
1958 I	10.8	4.4	29.1	3.2	11.9	15.6
II	17.7	32.6	23.2	2.9	- 3.4	- 9.6
1959 I	36.9	108.8	44.4	- 5.8	5.1	43.6
II	10.5	19.4	11.8	- 4.1	13.7	94.8
1960 I	19.1	2.1	19.5	7.0	-10.4	1.1
II	9.6	0.0	7.8	8.8	5.7	-16.2
1961 I	11.1	0.0	14.8	0.8	-14.6	-17.9
II	3.6	0.1	9.0	6.1	- 3.1	-15.8
1962 I	9.6	13.7	17.9	0.7	0.3	- 5.8
II	1.1	40.4	8.4	- 1.1	- 8.7	- 4.8
1963 I	9.0	2.9	14.1	- 5.0	- 2.4	17.4
II	12.0	2.7	9.8	11.1	- 5.5	- 7.4
1964 I	20.9	- 3.3	15.3	1.2	- 12.7	- 4.7
II	14.9	6.8	14.9	4.3	- 0.7	0.7
1965 I	16.2	9.7	17.6	1.1	- 8.8	- 6.7
II	8.9	10.2	15.2	6.4	- 1.3	- 4.5
1966 I	14.7	8.1	16.8	- 5.3	4.2	3.9
II	14.5	15.5	14.9	4.1	-12.4	-12.0
1967 I	18.0	39.3	15.6	0.4	-15.4	- 5.1
II	10.0	14.6	9.9	- 0.9	-17.4	0.0
1968 I	16.6	0.5	0.0	1.6	5.3	4.5
II	12.9	0.1	0.0	6.6	- 0.8	-15.5
1969 I	10.6	0.1	8.0	2.0	0.7	-13.3
II	4.7	0.0	3.6	4.4	1.2	-16.5
1970 I	5.8	1.1	11.5	0.3	13.3	- 1.4
II	9.3	11.5	7.5	2.1	- 3.7	-12.9
1971 I	10.8	1.9	21.7	0.7	19.3	24.6
II	16.4	27.2	18.7	5.1	19.1	23.7

Sources: Column (1): BCRA, Estadísticas Monetarias y Bancarias: Años 1940-1960, Supplement to Bóletin Estadístico, June, 1962; and BCRA, Bóletin Estadístico, various issues. Column (2): Diaz Alejandro, C. F., Essays on the Economic History of the Argentine Republic (New Haven: Yale University Press, 1970), p. 534; and various issues of International Financial Statistics. Column (3): Various issues of Bóletin de Estadístico and and Costo de Vida. Column (4): Diaz Alejandro, Essays on the Economic History, p. 534; and various issues of Informe Económico. Column (5): Residuals from regressions on the wholesale price index. Column (6): BCRA, Estadisticas Monetarias y Bancarias: Anos 1940-1960, Supplement to Bóletin Estadístico, June, 1962; and BCRA, Bóletin Estadístico, various issues.

TABLE A7.--Argentine Nominal Rates of Protection, 1966, 1968 and 1970.

	1966	1968	1970
1. Stone, clay and glass	.69	.52	.36
2. Textile products	.56	.46	.37
3. Vehicles and machinery	.46	.31	.17
4. Electrical products	.36	.26	.16
5. Chemical products	.33	.37	.29
6. Paper and paperboard	.36	.27	.25
7. Metals	.33	.27	.11
8. Apparel	.30	.24	.10
9. Leather products	.02	.01	.04
10. Petroleum products	.06	-.04	-.08
11. Agricultural products	-.01	.04	.07
12. Wood products	.02	-.02	.11
13. Food and beverages	.00	.06	.15
14. Rubber products	.09	.20	.09
15. Tobacco	.09	.36	.48

Sources: (a) 1960 rates of nominal protection, Claudio Loser, "The Intensity of Trade Restrictions in Argentina, 1939-68" (unpublished Ph.D. dissertation, University of Chicago, 1971), 95-99.
(b) Argentine prices: various issues of Bóletin de Estadística.
(c) United States prices: various issues of Survey of Current Business, U.S. Department of Commerce.

TABLE A8.--Data for Regressions on the Supply of Manufactured Exports

Year	(1) Actual Manufactured Exports in Millions of 1960 Pesos	(2) Production Index in Non-food Industries (1960=100)	(3) World Exports of Manufactures in Billions of Dollars	(4) Net Effective Exchange Rate	(5) Argentine Exports to LAFTA in Millions of Dollars
1951	1,514	64.0	29.3	1.71	177.6
1952	958	62.9	30.2	1.31	105.6
1953	1,119	62.1	31.6	1.03	269.4
1954	990	68.3	32.5	1.27	178.4
1955	1,010	78.4	35.6	1.18	199.7
1956	2,138	82.2	40.7	2.10	124.1
1957	2,818	90.9	44.7	2.29	143.3
1958	2,060	97.8	43.9	2.16	131.1
1959	1,762	87.9	47.0	1.67	148.5
1960	1,681	100.0	54.0	1.55	170.3
1961	1,723	111.4	56.5	1.43	112.2
1962	2,188	102.1	60.3	1.59	154.7
1963	5,129	96.0	65.3	1.64	197.5
1964	5,543	119.6	75.3	1.31	235.1
1965	3,750	138.4	83.3	1.25	246.7
1966	4,548	137.6	93.1	1.26	254.6
1967	7,277	138.4	99.8	1.43	283.7
1968	10,188	149.5	114.8	1.61	338.1
1969	12,734	169.0	134.6	1.52	364.3
1970	15,027	180.0	155.0	1.34	365.8
1971	15,868	192.3	175.8		

Sources: Column (1): Eriksson, "El Comportamento de la Exportación," p. 565; various issues of Comercio Exterior C and Bóletin Estadística. Column (2): BCRA, Origen del Producto y Distribucion del Ingreso - Anos 1950-69, Supplement to Bóletin Estadístico, January 1, 1971, pp. 34-35; and Informe Económico, 1971, No. 4, Statistical Appendix, p. 10. Column (3): Various issues of United Nations, Monthly Bulletin of Statistics. Column (4): (a) nominal exchange rate, various issues of IMF, International Financial Statistics; (b) subsidies: Eriksson, "Comportamiento de la Exportacion," p. 579, and various issues of Anales de la Legislación Argentina; and (c) wholesale prices: various issues of Monthly Bulletin of Statistics. Column (5): (a) 1951-53, INDEC, Comercio Exterior; (b) 1954-60, Felix Cordova Moyano, "Las Manufacturas y Su Participación en el Comercio Argentino con la ALALC," Revista de la Unión Industrial (July-September, 1969), p. 54; (c) 1969-1970, Informe Económico, No. 4, 1971, Statistical Appendix, p. 41.

TABLE A9.--Actual and Estimated Rates of Price Increase, 1966-71 (per cent increase from previous semiannual average)

	All Wholesale Prices		Rural Prices		Non-rural Domestic Prices		Imported Prices	
	Actual	Estimated	Actual	Estimated	Actual	Estimated	Actual	Estimated
1966 II	11.5	17.8	16.3	20.0	9.5	16.9	14.6	17.6
1967 I	11.9	22.6	6.4	24.8	13.3	21.1	27.7	33.9
II	13.2	12.8	19.9	13.0	10.6	12.4	11.6	14.6
1968 I	1.8	1.1	- 1.8	- 0.9	3.5	1.9	- 1.0	3.0
II	2.4	- 0.2	3.6	0.8	1.8	- 0.7	3.9	1.8
1969 I	1.8	- 1.1	0.7	- 3.6	2.0	- 0.0	5.5	- 0.6
II	6.5	- 1.3	13.4	- 0.8	3.7	- 1.4	6.0	- 3.4
1970 I	3.2	2.3	- 0.7	2.0	4.8	2.7	6.5	- 1.7
II	14.2	11.0	19.3	14.8	12.2	9.5	12.7	9.7
1971 I	17.3	13.7	18.6	13.9	17.6	14.1	3.9	6.3
II	22.9	23.4	29.1	26.8	20.0	21.9	23.6	25.7

Sources: BCRA, Bóletin Estadístico, September, 1962, pp. 51-62 (1950-56), Monthly Bulletin of Statistics (1956-56); DNEC, Indices de Precios al for Major, October, 1960, 1957-59; DNEC, Bóletin Mensual de Estadística (1959-62); DNEC, Bóletin de Estadística (1962-1971).

TABLE A10.--Beef Production and the Relative Price of Beef, 1956-72

Year	(1) Relative Price of Beef*	(2) Index of the Relative Price of Beef (1966 = 100)	(3) Beef Production (Thousands of Tons)	(4) Index of Beef Production (1966 = 100)
1956	10.15	76.0	2,510	106.4
1957	8.95	67.0	2,490	105.6
1958	10.10	75.6	2,559	108.5
1959	17.85	133.7	1,967	83.4
1960	15.10	113.1	1,932	81.9
1961	12.10	90.6	2,189	92.8
1962	11.50	86.1	2,443	103.6
1963	12.90	96.6	2,680	113.7
1964	18.35	137.4	2,062	87.4
1965	17.80	133.3	2,021	85.7
1966	13.35	100.0	2,357	100.0
1967	12.55	94.0	2,586	109.7
1968	11.45	85.7	2,613	110.8
1969	11.05	82.7	2,932	124.3
1970	14.20	106.3	2,654	112.6
1971	19.25	144.1	2,032	86.2
1972	19.45	145.6	2,213	93.8

Source: Review of the River Plate, April 10, 1973, p. 487.

*In 1960 pesos. Average peso price per live kilogram divided by the cost of living.

TABLE A11.--Terms of Trade Data: 1966-71 (1966 = 100)

Year	(1) Imports of Goods and Services: Dollar Figures/Constant Peso Figures	(2) Exports of Goods and Services: Dollar Figures/Constant Peso Figures	(3) Terms of Trade: (2)/(1)
1966	100.0	100.0	100.0
1967	98.9	96.2	97.2
1968	109.5	101.6	92.7
1969	111.5	100.4	89.8
1970	118.2	101.9	86.2
1971	119.2	107.9	90.5

Sources: (1) Dollar figures for total imports and exports of goods and services are taken from various issues of IMF, Balance of Payments Yearbook. (2) Constant peso figures for total imports and exports of goods and services are taken from various issues of Bóletin Estadístico.

SELECTED BIBLIOGRAPHY

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Books and Monographs

Balassa, Bela. The Structure of Protection in Developing Countries. Baltimore: Johns Hopkins Press, 1970.

Bell, Harry H. Tariff Profiles in Latin America: Implications for Pricing Structures and Economic Integration. New York: Praeger, 1971.

Corden, Warner M. The Theory of Protection. Oxford: Clarendon Press, 1971.

de Pablo, Juan C. "Política Antiinfacionaria en la Argentina, 1967-1970." Buenos Aires, 1970. (Mimeographed.)

Diaz Alejandro, Carlos F. Essays in the History of the Argentine Republic. New Haven: Yale University Press, 1970.

_____. Exchange-Rate Devaluation in a Semi-Industrialized Country. Cambridge: The M.I.T. Press, 1965.

Dutton, Dean S. "A Model of Self-Generating Inflation: The Argentine Case." Unpublished Ph.D. dissertation, Michigan State University, 1968.

Foley, James W. "The Balance of Payments and Import Substitution in Argentina, 1951-1961." Unpublished Ph.D. dissertation, Michigan State University, 1969.

Graham-Yooll, Andrew. Tiempo de Tragedia: Cronología de la Revolución Argentina. Buenos Aires: Ediciones de la Flor, 1972.

Guadagni, Alieto, and Petrecolla, Alberto. "La Función de Demanda de Carne Vacuna en Argentina en el Periodo 1935-61." 2d ed. Buenos Aires: Center of Economic Research, Torcuato Di Tella Institute, 1966.

Johnson, Harry G. International Trade and Economic Growth. London: Allen and Unwin, 1958.

Kmenta, Jan. Elements of Econometrics. New York: Macmillan, 1971.

Kreinin, Mordechai E. International Economics: A Policy Approach. New York: Harcourt Brace Jovanovich, 1971.

Loser, Claudio M. "The Intensity of Trade Restrictions in Argentina, 1939-68." Unpublished Ph.D. dissertation, University of Chicago, 1971.

Prebisch, Raúl. Towards a Dynamic Policy for Latin America. New York: United Nations, 1964.

Suplicy, Edwardo M. "The Effects of Mini-devaluations on the Brazilian Economy." Unpublished Ph.D. dissertation, Michigan State University, 1973.

Villanueva, Javier. "The Inflationary Process in Argentina, 1943-60." 2d ed. Buenos Aires: Center of Economic Research, Torcuato Di Tella Institute, 1966.

Warner, Pedro. "La Protección Aduanera Efectiva en la República Argentina." Buenos Aires, 1969. (Mimeographed.)

Warner, Percy de Forest. "The Impact of the Service on the Foreign Debt on the Monetary Structure in Argentina: 1955-65." Unpublished Ph.D. dissertation, Michigan State University, 1970.

Articles

Alemann, Roberto T. "La Reforma Arancelaría en la República Argentina." Hacia Una Tarifa Común en América Latina. Buenos Aires: INTAL, 1969.

Balassa, Bela. "Growth Strategies in Semi-Industrial Countries." Quarterly Journal of Economics, LXXIV (February, 1970), 24-32.

Becker, V. A. "Elasticidades de Oferta de la Producción Agropecuaria: Trigo, Maiz y Carne." Económica, XV (May-August, 1969), 72-87.

Braun, Oscar, and Joy, Leonard. "A Model of Economic Stagnation--A Case Study of the Argentine Economy." Economic Journal, LXXVIII (December, 1968), 868-87.

Diz, Adolpho C. "Money and Prices in Argentina: 1935-62." Varieties of Monetary Experience. Edited by David Meiselman. Chicago: Chicago University Press, 1970, pp. 69-162.

Eriksson, John R. "El Comportamiento de la Exportación de Manufacturas en la Argentina, 1951-1965." Desarrollo Económico, IX (January-May, 1970), 553-80.

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, XXVII (February, 1965), 1-44.

Harberger, Arnold C. "The Dynamics of Inflation in Chile." Measurement in Economics: Studies in Mathematical Economics in Honor of Yehuda Grunfeld. Edited by Carl F. Christ. Stanford: Stanford University Press, 1963, pp. 219-50.

Hemming, W. F. M., and Corden, W. M. "Import Restriction as an Instrument of Balance of Payments Policy." Economic Journal, LXVIII (September, 1958), 1-22.

Janvry, Alain de, and Nuñez, Agustin. "Análisis de Demanda para Productos Agropecuarios en Argentina." Económica, XVII (September-December, 1971), 267-79.

"La Oferta de Ganado Vacuno: Análisis de Sus Perspectivas." Estudios Sobre la Economía Argentina. Instituto de Investigaciones de la CGE - Argentina (May, 1968), 103-8.

Lewis, Stephen R., Jr. "Effects of Trade Policies on Relative Prices: Pakistan, 1951-1964." American Economic Review, LVIII (March, 1968), 60-78.

Llorens de Azar, Carmen, and Johansen, Frieda F. "Principales Estadísticas Argentinas: Metodologias y Fuentas." Revista de Administración y Economía, I, No. 4 (1970), 45-88.

Llosas, Hernan P. "Los Efectos Direccionales de la Protección Aduanera en la Argentina." Económica, XVII (September-December, 1971), 297-98.

Mallon, Richard D. "Exchange Policy-Argentina." Development Policy--Theory and Practice. Edited by Gustav F. Papanek. Cambridge: Harvard University Press, 1968, pp. 175-206.

Martinez, Miguel E. "Un Estudio Econométrico del Mercado Argentino de Carnes." Revista de la Facultad de Ciencias Económicas [National University at Cuyo], XX (January-April, 1968), 59-62.

Maynard, Geoffrey, and van Rijckeghem. "Stabilization Policy in an Inflationary Economy--Argentina." Development Policy--Theory and Practice. Edited by Gustav F. Papanek. Cambridge: Harvard University Press, 1968, pp. 207-35.

Reca, Lucio G. "Determinantes de la Oferta Agropecuaria en la Argentina, 1934/35-1966/67." Estudios Sobre la Economia Argentina, Instituto de Investigaciones de la CGE--Argentina (August, 1969), 57-65.

Simone, Dante. "Sobre Polítca Monetária en Alta Infación." Económica, XVIII (January-April, 1972), 55-70.

Magazines and Periodicals

Anales de la Legislación Argentina. La Ley. Buenos Aires, various issues.

The First National Bank of Boston. The Situation in Argentina. Buenos Aires, various issues.

Llerena, Moyano, ed. Panorama de la Economía Argentina. Buenos Aires, various issues.

Organización Techint. Bóletin Informativo. Buenos Aires, various issues.

Review of the River Plate. Buenos Aires, various issues.

Situación de Coyuntura. Centro de Estudios de Coyuntura, Instituto de Desarrollo Economico y Social. Buenos Aires, various issues.

Official Reports and Publications

Banco Central de la República Argentina. Bóletin Estadístico. Buenos Aires; various issues.

_____. Comercio Exterior (Fasciclo 2). Supplement to Bóletin Estadístico, May, 1969.

_____. Estadísticas Monetarias y Bancarias: Años 1940-1960. Supplement to Bóletin Estadístico, June, 1962.

_____. Memoria Anual. Buenos Aires; various issues.

_____. Origen del Producto y Composición del Gasto Nacional. Supplement to Bóletin Estadístico, June 6, 1966.

_____. Origen del Producto y Distribución del Ingreso-Años 1950-69." Supplement to Bóletin Estadístico, January 1, 1971.

Consejo Nacional de Desarrollo (CONADE). Cuentas Nacionales de la República Argentina. Buenos Aires, April, 1964.

_____. Distribución del Ingreso y Cuentas Nacionales en la Argentina. Buenos Aires, 1965.

Fundación de Investigaciones Económicas Latinoamericanas (FIEL). Indicadores de Coyuntura. Buenos Aires; various issues.

Instituto Nacional de Estadística y Censos. Bóletin de Estadística (formerly Boletin Mensual de Estadísticas). Buenos Aires; various issues.

_____. Comercio Exterior. Buenos Aires; various issues.

_____. Comercio Exterior C. Buenos Aires; various issues.

Instituto Nacional de Estadística y Censos. Costo de Vida. Buenos Aires; various issues.

_____. Intercambio Comercial Argentino Según C.U.C.I. Buenos Aires; various issues.

International Monetary Fund. Annual Report on Exchange Restrictions. Washington, D.C.; various issues.

_____. Balance of Payments Yearbook. Washington, D.C.; various issues.

_____. International Financial Statistics. Washington, D.C.; various issues.

Minister of Economy and Labor. "Report to the Inter-American Committee on the Alliance for Progress." Review of the River Plate, February 11, 1967, pp. 167-70, 189-90.

Ministerio de Economía y Trabajo. Cómo Exportar. Secretaria de Estado de Comercio Exterior, Buenos Aires, 1970.

Ministerio de Hacienda y Finanzas. Informe Económico. Buenos Aires; various issues.

United Nations. Economic Commission for Latin America. Economic Bulletin for Latin America. New York; various issues.

_____. Economic Commission for Latin America. Statistical Bulletin for Latin America. New York; various issues.

_____. Food and Agricultural Organization. Trade Yearbook, 1971. Rome.

_____. Monthly Bulletin of Statistics. New York; various issues.

_____. Yearbook of International Trade Statistics. New York; various issues.

U.S. Board of Governors of the Federal Reserve System. Federal Reserve Bulletin. Washington, D.C.: Government Printing Office; various issues.

_____. Department of Commerce. Survey of Current Business. Washington, D.C.: Government Printing Office; various issues.