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INTRODUCTION

Economic growth generates significant changes in the sectoral composition of an economy. In the early stages of growth, an economy is largely rural, while in mature economies, agriculture constitutes only a small portion of the economy. Since a large portion of the world's population still lives in rural areas, it is very important to understand the dynamics of this process.

The subject of sectoral growth can be placed in a broader perspective, because the process of growth in mature economies generates other sectoral changes of great importance, such as a shift toward services. This process has many similarities to the process of industrialization.

Growth is generated by an accumulation of physical and human capital and technical change. Technical change itself depends on the pace of capital accumulation. This is true, both for the rate of technical change and for its factor bias. The simple fact is that the capital-labour ratio increases generate incentives for innovations designed to produce labour saving techniques.¹ Thus, even though the process of sectoral growth calls for a movement of resources across sectors, it is applied differently to labour and capital.

Overall growth increases the possibilities for consumption. The utility functions of consumers are not homothetic and the income elasticity for food is less than one and, in general, is considerable less than one. Also, the price elasticity of demand for food is low. Thus, an equiproportionate increase in output must cause an excess supply in the income inelastic sector.² As a consequence, its relative price declines, and the lower the price elasticity, the larger the decrease in price caused by a given amount of excess supply. As a result, the value of output distributed to factors of production in agriculture declines, and their rates of return decline relative to those obtained in nonagriculture, and resources move from agriculture to nonagriculture.

This is a simplified statement of the process and, as such, it abstracts from many pertinent details which do not change the overall picture. The above description applies to a closed economy. Therefore, on the face of it, the behaviour of open economies, such as the economy of Argentina, should be different. This qualification is true. However, the world is a closed economy, and since the process is common to all countries, global excess supply is generated by the aforementioned process that causes world agricultural prices to decline, thereby affecting exporting countries. In a recent study, it was reported that the

* IEERAL-Fundación Mediterránea, Argentina.

** This paper draws heavily on ongoing research conducted by Yair Mundlak, Domingo Cavallo and Roberto Domenech with the support of CINDE, Fundación Mediterránea and IFPRI.

trend components of prices of the main agricultural products, deflated by US wholesale prices, declined over the period, 1900–84 at a rate of at least 0.5 per cent per year.³ Thus, the called-for adjustment in factor allocation does not skip over exporting countries.

Argentina's economy has experienced a significant decline in the dynamism of agricultural growth since the 1930s. Was it the exclusive effect of a worldwide decline in the terms of trade for agricultural products or was it mainly the effect of domestic economic policies? If policies played a role in reducing agricultural growth, was this phenomenon helpful to overall growth or did it damage Argentina's performance? These are the main questions our work attempts to clarify.

Some historical background

Until the Great Depression of the 1930s, agriculture was the staple sector of the Argentine economy. Between 1860 and 1930 the exploitation of the rich land of the Pampas strongly pushed economic growth. During this period, Argentina grew more rapidly than the United States, Canada, Australia, and Brazil—countries similarly endowed with rich land and which also hosted large inflows of capital and European immigrants. Table 1 shows that during the first three decades of this century, Argentina outgrew the other four countries in population, total income, and per capita income.

However, beginning in the 1930s, Argentine economic vitality deteriorated notably as is also shown in Table 1. This loss of vitality was especially dramatic in agriculture. An impressionistic picture of this phenomenon is provided by a comparison of crop yields in Argentina and in the United States which are plotted in Figure 1. In the late 1920s, crop yields were similar, but after that year, yields in Argentina were always below the US levels. Comparing the average yield for the periods 1913–30 and 1975–84, agriculture in the US tripled its yields. In Argentina they did not even double.

The main purpose of this paper is to examine the relationship between agriculture and overall economic growth in Argentina during the period from 1913 to 1984 and, particularly, the influences of economic policies on the sectoral composition of output and on the process of growth.

To simplify the references economic policies will be classified into two main groups: macroeconomic and trade policies.

Macroeconomic policy includes government decisions concerning the size of government expenditures, the way in which they are financed, and the rate of growth of the money supply.

Three relevant macropolicy indicators were constructed for the period analysed. The first is the share of government consumption in total income. This provides a measurement of the size of government expenditures. As can be seen in Figure 2, government expenditures show a clear upward long-term trend. The actual values are plotted in solid lines and, for the time being, the reader should ignore the dotted lines. After the mid-1940s, several significant ups and downs can be observed. This suggests that government expenditures drastically in-

TABLE 1 *Comparative growth in income and population*
(Average annual rates in percentages)

	Argentina	Australia	Brazil	Canada	USA
	i) Period 1900-4 to 1925-9				
Population	2.8	1.8	2.1	2.2	1.1
Income	4.6	2.6	3.3	3.4	2.9
Per capita income	1.8	0.8	1.2	1.2	1.3
	ii) Period 1925-9 to 1980-4				
Population	1.8	1.7	2.5	1.5	1.3
Income	2.8	3.9	5.5	3.9	3.1
Per capita income	1.0	2.2	3.0	2.4	1.8

Source: Cavallo (1986).

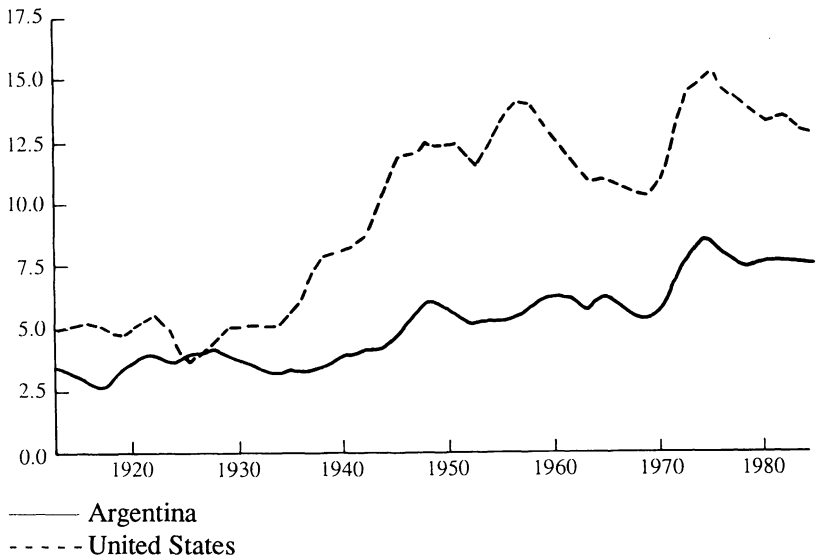


FIGURE 1 *Average crop yields (Argentina and USA, 1913-84)*

Notes: Weighted average of the yields of 15 crops expressed in tons per hectare. The weights are the shares in production in Argentina.

Sources: See Mundlak, Cavallo and Domenech (1988), Appendices 3 and 4.

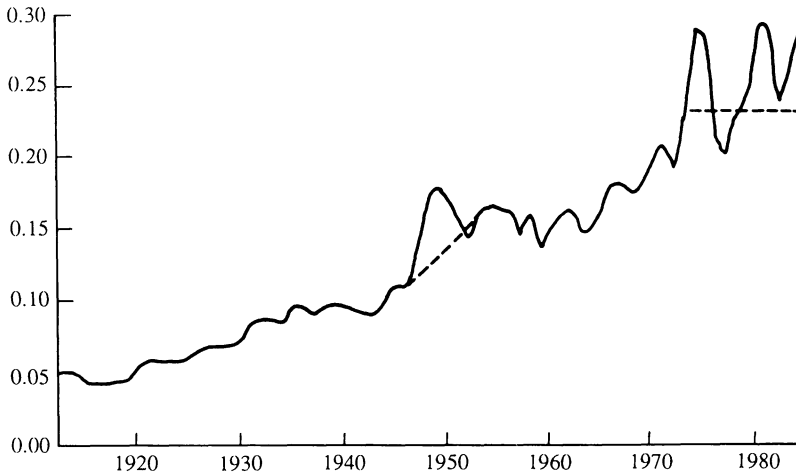


FIGURE 2 *Government expenditures* (Argentina, 1913–84)

Note: Government consumption as a proportion of total income.
Source: Mundlak, Cavallo and Domenech (1988), Appendix 3.

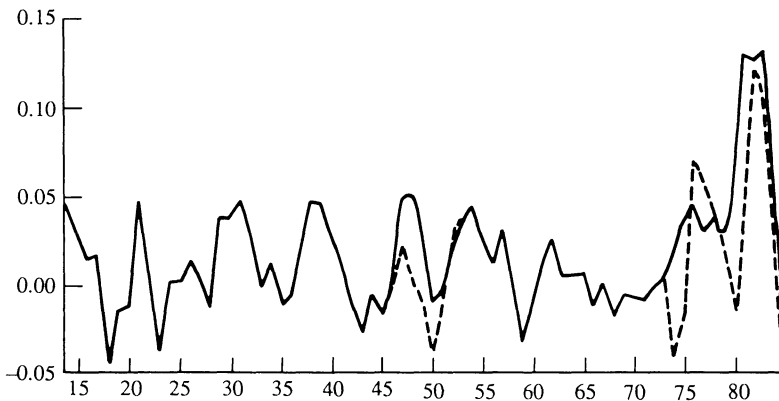


FIGURE 3 *Fiscal deficit financed by borrowing* (Argentina, 1914–84)

Note: Fiscal deficit financed by borrowing as a proportion of total income.
Source: Same as Figure 2.

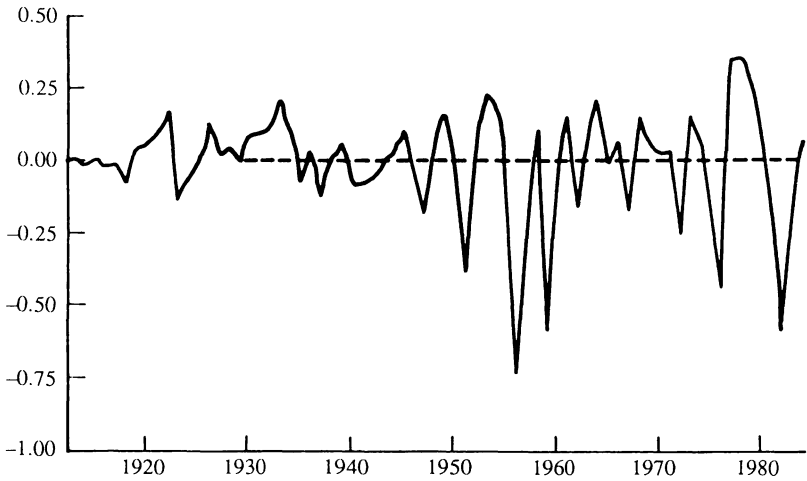


FIGURE 4 *Monetary expansion* (Argentina, 1914–84)

Note: Rate of monetary growth in excess of nominal devaluation, foreign inflation, and real growth.

Source: Same as Figure 2.

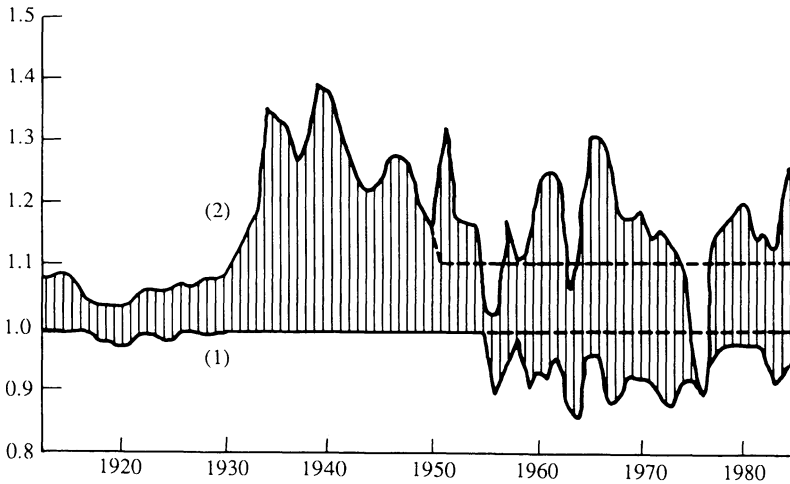


FIGURE 5 *Commercial policy* (Argentina, 1913–84)

Note: ¹One minus the tax rate on exports.

²One plus the tax rate on imports adjusted by the exchange rate differential.

Source: Same as Figure 2.

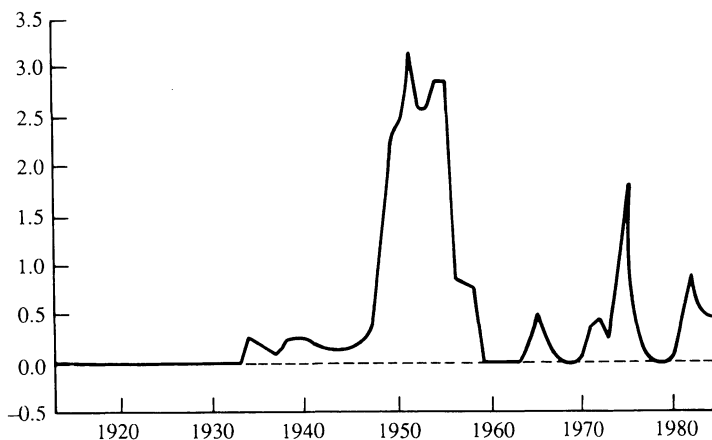


FIGURE 6 *Black market premium* (Argentina, 1913–84)

Source: Same as Figure 2.

creased but reached levels that could not be sustained later. Therefore, the high levels were partially reversed after a few years.

Another indicator of macro policies is the fiscal deficit. Figure 3 plots the fiscal deficit financed by borrowing as a proportion of national income. After 1930, the fiscal deficit was much larger than the levels it had reached previously, exceeding 10 per cent of total income during some subperiods.

Figure 4 shows the rate of growth of the money supply over and above the rate of growth of output valued at foreign prices or, in other words, the rate of devaluation adjusted for real growth and foreign inflation. The plot shows that monetary policy was very unstable after 1930. Some years showed large expansions that were followed by large contractions.

Trade policy includes taxes on exports and tariffs on imports as well as quantitative restrictions on both sides of foreign trade.

Taxes on exports and tariffs on imports are plotted in Figure 5. The shadowed area indicates the wedge between domestic and foreign prices caused by taxation on foreign trade. Note that this wedge increased significantly after the Great Depression. Taxes on imports are adjusted such that differential exchange rates for imports and exports are taken into account. In practice, whenever the official exchange rate for imports is set at a lower level than the exchange rate for exports, there is an implicit subsidy for imports that has a counterbalancing effect to that of taxes. This was particularly relevant during 1975–76 when the rate for imports was considerably lower than the rate for exports.

The reduction in the wedge that Figure 5 shows for later decades does not necessarily mean that trade distortions were reduced. This is because taxes on exports and tariffs on imports were estimated by dividing actual tax revenues by

the value of exports and imports, respectively, and therefore, they do not capture the effect of quantitative restrictions. While on the export side, taxes have been the most important restrictions on trade, in the case of imports, quantitative restrictions became dominant after the 1940s. Although there is no direct measurement of quantitative restrictions, they usually became more stringent whenever the black market exchange rate departed from the official rate. The black market premium is represented in Figure 6.

AN ANALYTICAL FRAMEWORK

The framework was derived from the basic idea that in dealing with economy dynamics, it is not meaningful to start assuming a long-term equilibrium and infer from it current movements in the economy. On the contrary, such movements are largely determined by the *state* of the economy. Whether the economy will eventually reach the presently perceived long-term equilibrium point depends largely on the economic signals that develop.

This particular formulation used for sectoral growth in a previous study by Yair Mundlak and myself for the period 1947–72⁴ made it possible to evaluate the consequences of significant economic policies implemented in Argentina. These policies mainly taxed agriculture, either directly through export taxes or indirectly through the protection of nonagriculture. A large and highly inefficient public sector was maintained, and not independently, a highly overvalued peso was frequently observed. Our study has shown that these policies caused agricultural growth to lag behind that observed in other countries with grain and livestock, such as the United States.

Our previous study also suggested that policies that harmed the performance of agriculture, especially those reflected in currency over-valuation, had a negative effect on overall growth. The present research looks at both issues in more detail and for a longer period of time. The effect of economic policies on the sectoral composition of output and overall growth is studied for the period 1913–84.

Sectoral disaggregation. The analysis distinguishes three sectors: agriculture (sector 1); nonagriculture excluding government (sector 2); and government (sector 3).

Agriculture produces the bulk of exportable goods. Nonagriculture excluding government produces import substitutes. Economic policies have different effects on agriculture and nonagriculture due to two basic sectoral characteristics:

(a) *Agriculture is more capital intensive than nonagriculture.* The shares of capital in sectoral income are summarized in Table 2. The share of capital averaged 60 per cent in agriculture and 40 per cent in nonagriculture. Note, however, that in the latter decades the difference became much smaller.

(b) *Agriculture is more internationally tradable than nonagriculture.* This can be seen in Table 3 where implicit shares of tradables in sectoral output are shown. While agriculture has an average tradable component of 67 per cent of sectoral output, nonagriculture averages only 47 per cent.

TABLE 2 *Sectoral shares of capital, (Argentina, 1913–84)*

Sector	Average	Standard Deviation	Maximum	Minimum
Agriculture	0.60	0.10	0.78	0.31
Nonagriculture excluding government	0.42	0.10	0.69	0.19

Note: Computed as one minus the ratio of the sector's of labour income to the sector's total income.

Source: Mundlak, Cavallo and Domenech (1988), Appendix 3.

TABLE 3 *Sectoral degree of tradability (Argentina, 1913–84)*

Sector	Average	Standard Deviation	Maximum	Minimum
Agriculture	0.67	0.06	0.81	0.53
Nonagriculture excluding government	0.47	0.04	0.56	0.42

Source: Mundlak, Cavallo and Domenech (1988), Chapters 1 and 3.

Functioning of the model. The price of government services is taken to be exogenous. The prices of sectors 1 and 2 relative to the prices of sector 3 are determined by the relative price of the traded component of each sector and some macropolicy indicators which influence the price of the nontraded component. The price of the traded goods is determined by foreign prices and the taxes on foreign trade, both of which are taken to be exogenous, and the real rate of exchange. The latter is explained by the foreign terms of trade, commercial policy, and some macropolicy indicators. The way each of the determining factors influence the real rate of exchange depends on the degrees of commercial and/or financial openness of the economy.

The intersectoral allocation of resources and technology are given at any one moment. The cultivated area is determined by the price of land, the price of livestock relative to crops, and credit market conditions as they relate to agriculture. This resource is specific to sector 1. Total employment is determined by wages and allocated to agriculture by a function that explains the rate of migration from this sector. Migration, in turn, is determined by wage differentials, urban unemployment, and the price of land. Labour that is not allocated to either agriculture or government is absorbed by sector 2. The stock of physical capital is determined by the additions of net investment. Investment, in turn, is assigned to agriculture by a function that is determined by the differential rate of return and the sectoral share of capital. Investment not assigned to agriculture or government goes to sector 2.

TABLE 4 *Price elasticities of output, labour, capital and land in agriculture*

Period	Output	Labour	Physical capital	Land
1	0.07	0.00	0.05	0.03
2	0.09	0.01	0.11	0.05
3	0.16	0.07	0.18	0.07
4	0.29	0.16	0.27	0.10
5	0.36	0.17	0.38	0.12
10	0.71	0.42	0.90	0.23
15	1.19	0.82	1.39	0.34
20	1.78	1.52	1.80	0.48

Notes: The elasticities are computed by assuming a 10 per cent increase in the price of agriculture but adjusting the price of government services in order to keep the general price level at historical levels. The price of land is increased in the same proportion as the agricultural price and government wages are reduced in the same proportion as the price of government services.

TABLE 5 *Price elasticities of output, labour, and capital in non-agriculture excluding government*

Period	Output	Labour	Capital
1	0.40	0.00	0.09
2	0.33	0.09	0.21
3	0.44	0.10	0.32
4	0.68	0.13	0.47
5	0.78	0.05	0.62
10	0.97	0.18	1.06
15	0.98	0.27	1.05
20	0.75	-0.03	0.91

Note: See notes to Table 4.

TABLE 6 *Price elasticities of output, labour, and capital in the aggregate economy*

Period	Output	Labour	Capital
1	0.29	0.00	0.06
2	0.25	0.06	0.14
3	0.34	0.08	0.22
4	0.53	0.12	0.32
5	0.62	0.07	0.42
10	0.82	0.20	0.77
15	0.87	0.32	0.83
20	0.77	0.17	0.78

Note: See notes to Table 4.

TABLE 7 *Price elasticities of output, labour, capital and land in agriculture*

Period	Output	Labour	Physical capital	Land
1	0.00	0.00	0.01	0.03
2	0.04	0.04	0.04	0.05
3	0.09	0.12	0.06	0.07
4	0.18	0.28	0.10	0.10
5	0.22	0.31	0.13	0.12
10	0.54	0.79	0.34	0.23
15	1.10	1.50	0.60	0.34
20	1.56	2.31	0.87	0.46

Notes: Elasticities are computed with respect to a 10 per cent increase in the price of agriculture but adjusting the price of nonagriculture (excluding government) in order to keep the general price level and the price of government services at historical levels. The price of land is increased in the same proportion as the price of agriculture.

TABLE 8 *Price elasticities of output, labour, and capital in non-agriculture excluding government*

Period	Output	Labour	Capital
1	0.00	0.00	0.00
2	-0.02	-0.03	0.00
3	-0.03	-0.05	0.00
4	-0.05	-0.10	-0.01
5	-0.06	-0.11	-0.01
10	-0.14	-0.23	-0.04
15	-0.29	-0.42	-0.12
20	-0.31	-0.44	-0.17

Note: See notes to Table 7.

TABLE 9 *Price elasticities of output, labour, and capital in the aggregate economy*

Period	Output	Labour	Capital
1	0.00	0.00	0.01
2	-0.01	-0.01	0.01
3	0.00	-0.01	0.02
4	0.00	-0.01	0.03
5	0.00	-0.01	0.03
10	-0.01	-0.01	0.05
15	-0.08	-0.03	0.02
20	-0.07	-0.03	0.02

Note: See notes to Table 7.

TABLE 10 *Response of relative prices to trade liberalization (Argentina, 1930–84)*

Variable	Base run average 1930–84) (1)	Simulated (2)	Percentage increase [100(2)/(1)] – 1
Degree of commercial openness	.24	.40	67
Real rate of exchange	.54	.82	52
Relative price of agriculture	.68	.95	40
Relative price of nonagriculture	.77	.91	18

Since the intersectoral allocation of resources and technology are predetermined, sectoral outputs are also predetermined. The sectoral production functions of sector 1 and 2 have the peculiarity of transforming factor productivity into functions of state variables. Some state variables are common to both sectors. These are the sectoral rates of return, the price of government services, the sectoral price volatility, and the degree of openness of the economy. Climatic conditions are a state variable for sector 1 and fiscal deficits and public expenditures for sector 2.

The utilization of total output is determined by the demand for its components. The demand for private consumption is determined by personal income and wealth. The demand for investment goods is determined by the expected rate of return on capital, the acceleration in growth, and government actions regarding both public investment and the method chosen to finance the fiscal deficit. Consumption and investment by the government are exogenous and net exports are determined as a residual.

In order to confront the model with the data, equations were estimated for the real exchange rate, sectoral relative prices, cultivated land, total employment, labour migration, investment allocation, sectoral production and factor shares, consumption, private investment, and total trade.

The estimated model quite closely reproduces not only the trends of Argentine growth in the period 1916–84, but also the main cycles of the endogenous variables.

The keys to this simple explanation of the Argentine economy suggested by economic theory lie in the formulation of resource allocation and of changes in productivity. In explaining the response of the economy to economic forces, it is essential to take the state of the economy explicitly into account.

SUPPLY RESPONSE

The model described in the previous section is used to compute the price elasticities all of the endogenous variables assuming a permanent 10 per cent

increase in agriculture prices. This increase is matched by the necessary adjustment in the price of government services in order to keep the economy's price level at its historical levels. On average, the price of government services was reduced by 9 per cent. The price of land was increased by the same proportion as the price of agriculture and government wages were reduced by the same proportion as the price of government services.

The computed elasticities of some of the endogenous variables are reported in Tables 4, 5, and 6. Only results for the first five years, and years 10, 15, and 20 are included. The results very clearly indicate that agriculture responds to prices, although some time is required. By the fourth year after the price increase, output has moved up by 30 per cent of the price change and the increase exceeds 100 per cent after 13 years. Over a 20 year time span, the permanent increase in agricultural prices increases sectorial output with an elasticity of 1.78, that is, 178 per cent of the price change. The response mainly results from a rapid process of capital accumulation. Nonetheless, employment also increases with an elasticity of 1.52 after 20 years.

An important result is that the effects of changes in agricultural prices also have a positive impact on nonagricultural output. This comes from the more rapid process of overall capital accumulation that takes place as a consequence of the response of aggregate investment to the rate of return. The latter increases as a consequence of the improvement in agricultural and nonagricultural prices *vis-à-vis* the implicit price deflator for government services (see Table 5). Note also that the economy's total output responds to the increase in agricultural prices when it is offset by a decline in the price of government services with an elasticity of 0.77 after 20 years (see Table 6).

Of course, the response would be different if the 10 per cent increase in agricultural prices was matched by a proportional reduction in the price of nonagriculture (excluding government) rather than offset by a reduction in the price of government services. Tables 7, 8, and 9 report the elasticities of a 10 per cent increase in the price of agriculture matched by an average reduction in the price of nonagriculture (excluding government) such that the general price level and the price of government services are restricted to their historical values. The resulting reduction in the price of nonagriculture (excluding government) was, on average, 2 per cent. As before, the elasticities are reported for selected periods.

Elasticities reported in Table 7 for agriculture show a response of this sector to price incentives similar to that of the previous case. Not surprisingly, the response of nonagriculture (excluding government) is negative and, consequently, the overall effect of this change in relative prices is also negative, although very close to zero (see Tables 8 and 9.)

The striking implication that emerges from these results is that drawing resources from sector 2 does not result in a positive effect for the aggregate economy. However, when the resources are taken away from sector 3 (government) the overall effect is positive and significant.

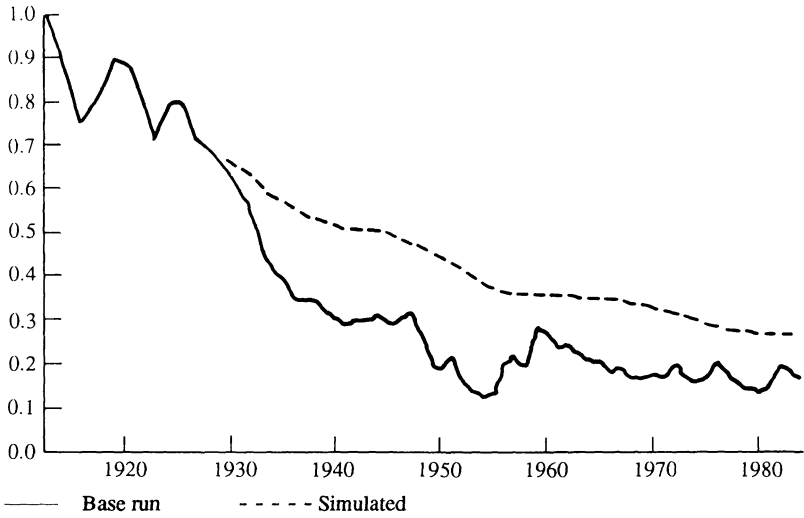


FIGURE 7 *Simulated values for the degree of commercial openness (Argentina, 1913–84)*

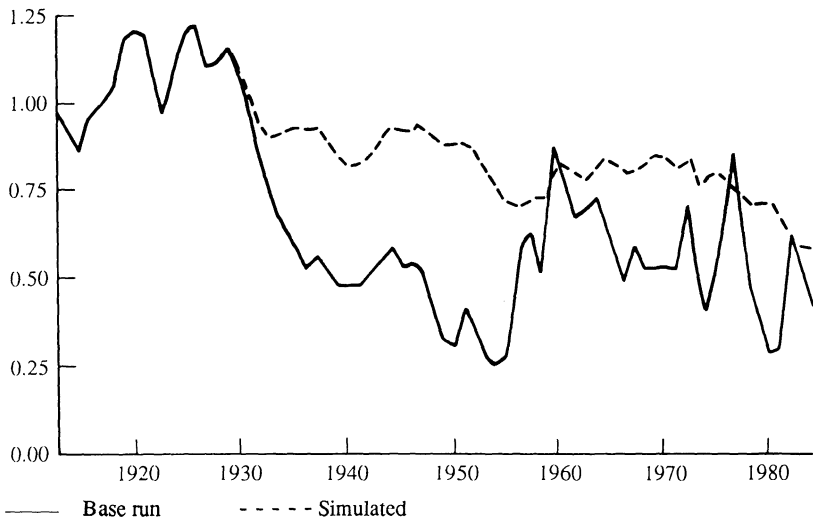


FIGURE 8 *Simulated values for the real exchange rate (Argentina, 1913–84)*

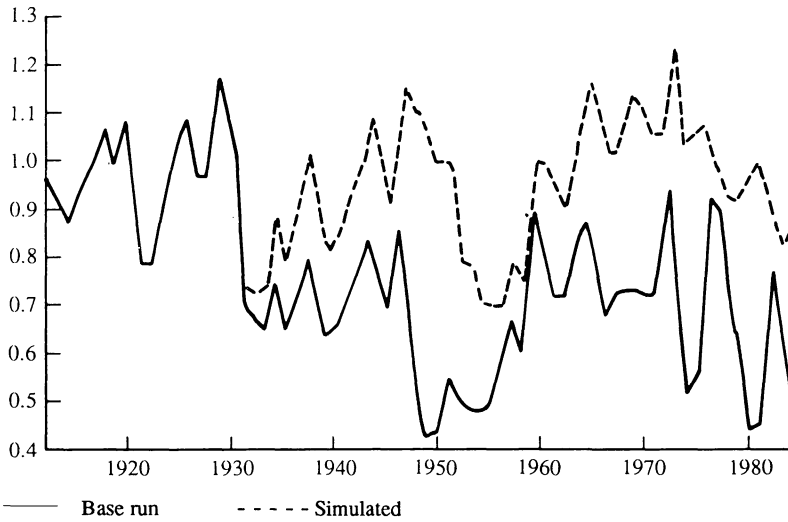


FIGURE 9 *Simulated values for the relative price of agriculture (Argentina, 1913–84)*

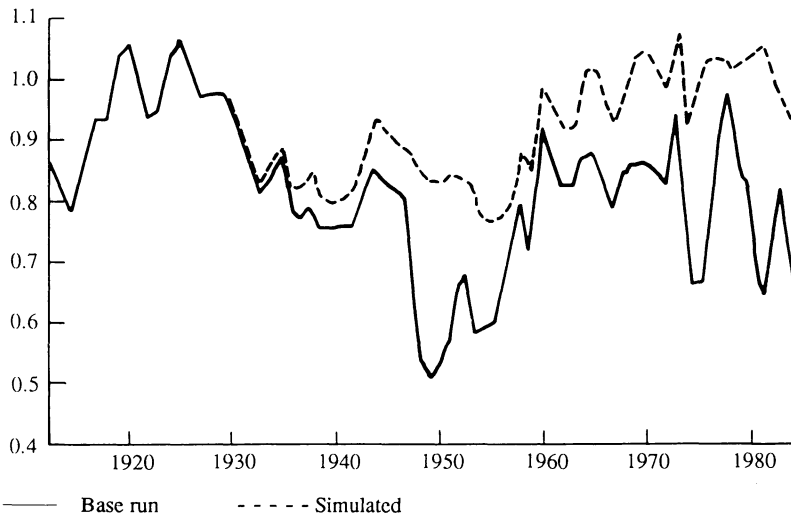


FIGURE 10 *Simulated values for the relative price of nonagriculture (Argentina, 1913–84)*

SIMULATING THE EFFECT OF POLICY CHANGES ON SECTORAL GROWTH

The model can be used to simulate the effects of a programme of trade liberalization and macropolicy management. All that is required is a simulation of the economy with the new relative prices that result from the alternative commercial and macroeconomic policies and a comparison of the results with those obtained for the base run of the model.

Before presenting the simulation results, it is necessary to be more specific about the set of commercial and macroeconomic 'policies' that are assumed for the trade liberalization and macropolicy management exercise. The policy changes are:

a) *Macroeconomic policies.* Public expenditures as a proportion of income are assumed to be at their actual levels except in two periods during which drastic increases took place. Thus, during 1946–53 public expenditures are assumed to grow smoothly, and during 1974–84 it is assumed that they remained at the level of 1973.

The imposed values for fiscal deficits financed by borrowing (as a proportion of income) result from subtracting from their actual levels the amount in which public expenditures are reduced.

In the case of the rate of monetary expansion over and above nominal devaluation, foreign inflation, and real growth, it is imposed that this control variable is stabilized during the period 1930–84, taking its average value of -0.008 in those years.

b) *Trade policies.* Modifications in commercial policy are introduced in the year 1930. They consisted in completely eliminating taxes on exports and setting a uniform tariff on imports of 10 per cent.

Finally, it is assumed that during the period 1930–84 there were no restrictions on international financial transactions, that is, no premium in the black market for foreign exchange.

Figures 7 to 10 compare the base run values and simulated values of degree of commercial openness, the real rate of exchange, relative price of agriculture, and the relative price of nonagriculture (excluding government). As can be seen by inspecting these plots, relative prices respond strongly to the policy changes. This response is quantified in Table 10 where the percentage increases in the simulated values relative to the actual values are shown.

These results imply that if the Argentine economy had been more integrated with the world economy after 1929, the volume of trade would have been almost 70 per cent higher than its actual level. Moreover, Argentina would have had an economy where relative prices would have been more in line with international prices. This would have implied much greater price incentives for both agriculture and nonagriculture relative to the expansion of government services. Therefore, for the period 1930–84, the price of agriculture would have been, on average, 40 per cent higher and the price of nonagriculture (excluding government) would have been almost 20 per cent higher. In the two cases the sectoral prices are relative to the price of government services. Of course, a greater supply of agricultural and nonagricultural goods (excluding government) could cause the changes in relative prices to be of a lesser magnitude.

TABLE 11 *Effects of alternative trade and macroeconomic policies (percentage changes from base run)*

Endogenous variables	Base run values (1)	'Free trade' values (2)	Percentage increase (3)
<i>Agriculture</i>			
Output	242.7	664.8	174
Employment	1.4	2.4	71
Physical capital	594.5	1661.1	86
Land	713.0	870.8	22
Wages (a)	74.4	79.3	7
Rate of return (a)	8.9	16.8	89
<i>Nonagriculture excluding government</i>			
Output	1695.4	1848.4	9
Employment	8.2	7.8	-5
Capital	4040.8	4474.3	11
Wages (a)	111.3	115.0	3
Rate of return (a)	17.0	20.4	20
<i>Aggregate economy</i>			
Output	1983.3	2894.6	46
Employment	11.2	11.8	5
Capital	6392.9	7970.2	24
Private Consumption	1519.0	1979.8	30
Investment	248.0	387.8	56
Exports	366.0	669.5	83
Imports	121.5	285.4	134
Wages (a)	100.5	101.1	1
Rate of return (a)	17.4	23.3	34

Note: The percentage changes result from comparison of the 'free trade' simulated and the base run values in the last of the simulation except in the cases labeled (a) in which the percentage changes result from the average of the last three years.

Table 11 summarizes the results of the simulation. Column (3) on the right compares the base run and 'free trade' simulated values in the last year for a subset of the endogenous variables.

The figures speak for themselves. The overall picture is clear: a freer trade regime combined with monetary and fiscal discipline would have produced substantially better economic performance. This is especially true for agriculture. According to these results, if the Argentine economy had operated under a more open trade regime after the Great Depression, agriculture would be generating an output 174 per cent higher than the actual level. This increase in production results from both the accumulation of capital and the increase in employment. Moreover, nonagriculture would have also performed better than it did under a more closed trade regime. In the case of this sector, the increased output is explained mainly by capital accumulation, but there is also a positive effect of the higher degree of commercial openness on factor productivity in nonagriculture.

NOTES

¹See Mundlak (1985).

²The basic determinant of the process is the income elasticity. This is an empirical quantity. Many of the studies report income elasticities of food. As income increases, food is purchased with an increasing component of nonagricultural inputs and, therefore, the income elasticity for the agricultural product is smaller than that reported for food. For details see Mundlak (1985).

³See Binswanger *et al.* (1985).

⁴Cavallo and Mundlak (1982).

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DISCUSSION OPENING – JUAN CARLOS DE PABLO

This paper by Cavallo is relevant *ex ante*, and very timely *ex post*. It is relevant because it focuses on the very important issue of Argentina, and it is very timely because from 3 August 1988, the Argentine government decided to reduce its fiscal deficit by taxing agricultural exports through differential exchange rates.

In 1970 the late Carlos Diaz Alejandro wrote the following: '... greater attention to exportables during 1943–55 would have resulted in more, rather than less, industrialization, as the examples of Canada and Australia suggest. Modestly expanding exports, by making feasible a higher overall growth rate, could have resulted in manufacturing expansion greater than the observed'. From this point of view, Cavallo's paper is a very attractive ratification and quantification of Carlos Diaz conjecture¹.

Table 11 summarizes the results of one of the runs of the model (elaborated previously in collaboration with Mundlak). According to these, had Argentina

pursued the 'correct' policy, instead of the one actually implemented, agricultural output in 1984 would have been 174 per cent higher than that actually observed, nonagricultural output would have been 9 per cent higher and output for the overall economy would have been 46 per cent higher.

The above mentioned results suggest the 'correct' policy, instead of the one actually implemented, even according to very strong Pareto optimality criteria. However, from the 'political' point of view, namely, the point of view of 'selling' the recommended policy to the other sectors of the economy, in the exercise presented in Table 11, the gains of the agricultural sector seems 'disproportionate' to the ones of the rest of the economy.

My basic proposal to Cavallo's paper is to replicate the runs with other values of the parameters, to discover the *locus* of the gains of each sector, searching for more sectoral gain combinations which are politically more attractive. Carlos Diaz remarks, on the one hand, and Cavallo's numerical example, on the other, look too sectoral, from the point of view of constructing a more balanced economic policy².

Argentina's disappointing performance in the twentieth century needs a very serious explanation. The policies towards the agricultural sector are one of the main ingredients of an explanation. Cavallo's paper, qualifying this important point, helps us to construct this explanation. The correct explanation of what happens and why is not sufficient to change the mess into success, but it is a necessary precursor. I hope a revised version of this paper will be read by future policy makers.

NOTES

¹Was the issue of the behaviour of the agricultural sector and the overall performance of the economy in Argentina during the twentieth century, ever analysed by anyone except Cavallo and/or Mundlak?. No, according to the bibliography of this paper.

²This last remark assumes that the locus of a recommend graph does show a positive slope and then a negative one (and that the example included in Cavallo's paper is indeed located in the negative portion). My feeling is that this is so, but I would like to see the evidence.

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