The Impact of the International Coffee Agreement on the Price of Coffee *

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1. Introduction

One of the explicit purpose of the International Coffee Agreement (ICA), in effect since 1962, is to establish "equitable" prices for coffee. "Equitable" prices are conceived as prices balancing the objective of increasing the long run "purchasing power of exporting countries", without at the same time creating an undue burden to the consumer in importing countries (7). The low level of coffee prices of 1962 was selected as a floor below which prices would not be allowed to fall, but the aim was to have prices at a somewhat higher level. It has been assumed that the effect of

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1 The first ICA was approved in 1962 for a five year period. In 1968 is was extended for another five years. It includes most of the coffee producing and importing countries.
the ICA was that of bringing the prices of coffee in the international market to higher levels than those to be obtained under a free market or under market intervention by isolated countries.

In some quarters such belief has produced laudatory comments (6, p. 110), while in others it resulted in angry remarks (5). There have been, however, no serious efforts to substantiate this belief in full. Therefore, the main purpose of this article is to perform a somewhat detailed analysis of what in fact has been the impact of the ICA on the price of coffee. Emphasis is given to the 1962-68 period, characterized by overproduction of green coffee, when huge stocks of unsold coffee piled up in the large producing countries (mainly Brazil). In 1969 a strong frost severely damaged Brazil's two next crops, and it became apparent that this country's coffee surplus would soon be exhausted. Moreover, the productive capacity of coffee in Brazil has been somewhat reduced by a program of coffee-tree uprooting. All this has led to a rise in the international price of coffee. Thus, the situation since 1969 is different from that of the period studied. However, since the existence of coffee surpluses has been frequently observed in the past-see, p. eg. (10) — and since they may appear again and again in the future, emphasis in the 1962-68 performance of the ICA seems warranted.

Part 1 of the essay examines briefly some of the reasons for the development of control schemes in the coffee market. Part 2 contains an empirical analysis, which is followed in part 3 with some projections the purpose of which is to help identify the sources of recent changes in the coffee market. Part 4 contains a discussion of the institutional background of those changes, and in part 5 the main conclusions of the study are presented.

2. The supply of coffee and the development of control schemes

Coffee is one of the main commodities in international trade produced by less developed nations. Like most of such commodities, coffee prices have experienced a declining trend after the Korean war. However, in spite of the fact that the demand for coffee has not increased substantially during the last decade, the root of the problems affecting the coffee economy stems mainly from the supply side of this commodity.

Coffee is a perennial, and its first yield is not achieved until four years after planting. Thus, when the price of coffee increases in response to a shift in demand, producers (if convinced that the price rise is not short
lived) respond by planting new coffee trees. However, the output of those starts flowing only with a lag, enabling the price of coffee to remain at a high level. This provides stimulus for further increases in productive capacity. After a few years, however, the newly planted trees start bearing fruits. And the coffee output continues increasing until all of the new capacity is in full production. However, when this occurs, the level of output at capacity is too large relatively to the possibility of absorption by the market, at reasonable prices. Prices are thus driven down to low levels and surplus stocks start mounting (8, p. 20, ff.).

Because of these characteristics of the supply of coffee, there has been since early in the twentieth century a tendency for intervention in the coffee market. This was first attempted by the large coffee producing countries alone, but gradually it became apparent that unilateral solutions would not be enough to curtail price declines. As a result, since the second half of the 1950's efforts have been towards formation of international agreements. Initially such agreements included only producing countries. However, only large producers faced a steeply sloped demand curve and saw the necessity of restricting supply in periods of overproduction, if prices were to be maintained at a level compatible with a desired volume of foreign exchange earnings. Small producing countries faced nearly horizontal demand curves and tried to sell as much coffee as they could. The consequence was evasion that led to the approval of the ICA, of which importing countries are members with the aim of "disciplining" the behavior of the producing members (10).

The ICA has as its main instrument, a complex quota system and the avowed purpose of maintaining the volume of coffee flowing to the market at levels compatible with "equitable" prices. Importing and exporting members determine the magnitude of the quotas, and most of the market of the importing countries is reserved to the exporting members of the agreement. Furthermore, a mechanism aims at preserving approximate price stability between the existing four main types of coffee. There is also provided and automatic system for small adjustments of the quotas, geared to a specific price range.

The ICA has concentrated mainly on short-term measures, attempting to prevent the excess production of coffee of reaching the market, thus trying to arrest or stop declines in price. Long term actions, destined to maintain the productive capacity of coffee at a level compatible with its demand are yet to be implemented.
3. The empirical tests

The empirical tests were performed with the United States coffee market as a basis. The market of this country was chosen because: a) the United States is the largest importing country, absorbing almost half of the world's coffee exports; b) it does not impose tariffs and there are no special internal taxes on coffee; c) all types of coffee are imported freely into this country; d) occurrences in the United States market are decisive for the determination of coffee prices in the world market; and d) because of the availability of data.

The basic idea behind the empirical work is the elementary notion that, the higher the demand for coffee the higher its price, the larger the coffee production and/or the coffee inventories, allowed to flow to the market, the lower its price. Therefore, the initial task was to find the variables that would best represent the supply and demand for coffee.

After experimenting with various alternatives, we decided the following model: 2

1. *Explained variable:* the "import price of coffee", (P), defined as the total value of coffee imports into the United States in a year, divided by its physical weight. The result was deflated by the Consumer Price Index. 2. *Explanatory variables.* i) *Demand variable:* the per capita Disposable Income in the United States deflated by the Consumer Price Index, (Yd), expressing the demand for coffee. ii) *Supply variables:* a) the Total Stocks of Coffee in Producing Countries, (Iw), representing the state of the world's supply of coffee. It was obtained by dividing the stocks of this commodity held by producing countries at the beginning of the market year, by the average world's exports of the last four years. This variable is expressed, not in physical terms but relative to the capacity of absorption by the market, under the assumption that the average exports approximately reflects this. Iw was selected instead of the total supply of coffee in order to establish to what extent the unsold stocks of coffee accumulating since the mid-fifties have affected the price of coffee. However, since it reflects the "excess supply" of coffee in the world market, Iw seems an appropriate supply variable; b) supply of coffee in the United States, (Su). It is equal to the yearly physical supply of coffee in the United States, divided by the population 14 years of age and older. The physical supply of coffee is equal to the stocks at the beginning of the year, added to the volume of coffee imported during the year. This variable was included to express the internal availability of

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For a similar methodology applied in a different context, see (4).
coffee, the idea being that the larger this availability, the smaller is the immediate necessity to import.

The data used: the series for the amount and value of coffee imported by the United States, for the Consumer Price Index, and this country's per capita disposable income were obtained from the Statistical abstract of the United States. The series for the stocks of coffee in producing countries at the beginning of the market year and for the annual total exports of coffee were obtained from the bulletin published several times a year by the United States Foreign Agricultural Service, Foreign Agriculture Circular, series FCOF—Coffee. The series for the United States coffee imports each year and for this country's commercial stocks of coffee at the beginning of the year were obtained from the publication by the United States Department of Agriculture, Bureau of Agricultural Economics, Consumption of food in the United States, 1909-1952, and its various supplements. The data for the population of 14 years and older were obtained from the Series P-25 of the United States Bureau of Census, Current population reports.

One further observation, data used to obtain the variable "import price of coffee," as well as the disposable income in per capita terms, and the world coffee exports correspond to calendar years. However, data for the exportable production, for the stocks retained in producing countries, correspond to the market year (October 1 – September 30). Since information about conditions of the coffee culture as well as crop estimates are available early in the calendar year and are well publicized among traders, this lag does not unduly distort the relationship between the variables.

The tests: regressions were run in two phases: first, with data for the 1947-1967 period. The starting year was 1947, shortly after World War II, since at this time producing countries did not have extraordinarily large inventories. In one equation a dummy variable, (D), was included, with a value of zero from 1947 to 1961, and one from 1962 to 1967 in order to capture any effect of the implementation of the ICA on the price of coffee. The second phase encompasses the 1947-1961 period only. Regressions were run with data for this shorter period in order to analyze the situation prior to the approval of the ICA. Projections were attempted on the basis of these regressions.

Equation 1 of table 1 shows the effect of lw, and of the demand variable, Yd, on the import price of coffee. The dummy variable was also
included. The coefficient of determination is .81, and all variable but D show small standard errors. Moreover, the sign of the coefficient of Yd and of Iw is as expected: positive for the first and negative for the second. And in spite of its fairly large standard error, the coefficient of the dummy variable has a negative sign indicating downward pressures on the price of coffee, determined by factors other than those reflected in the independent variables. As for the simple correlation matrix (not reproduced here), it shows multicollinearity between all the independent variables.

**TABLE 1**

The 1947-67 regressions

<table>
<thead>
<tr>
<th>Equation</th>
<th>log P</th>
<th>log Yd</th>
<th>log Iw</th>
<th>log D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>-4.03</td>
<td>1.97</td>
<td>0.42</td>
<td>-0.11</td>
</tr>
<tr>
<td></td>
<td>(1.41)</td>
<td>(0.45)</td>
<td>(0.05)</td>
<td>(0.05)</td>
</tr>
<tr>
<td></td>
<td>R² = 0.81</td>
<td></td>
<td></td>
<td>D.W. = 1.51</td>
</tr>
<tr>
<td>2.</td>
<td>1.28</td>
<td>0.70</td>
<td>0.37</td>
<td>-0.91</td>
</tr>
<tr>
<td></td>
<td>(2.39)</td>
<td>(0.54)</td>
<td>(0.07)</td>
<td>(0.62)</td>
</tr>
<tr>
<td></td>
<td>R² = 0.81</td>
<td></td>
<td></td>
<td>D.W. = 0.83</td>
</tr>
</tbody>
</table>

Note: The numbers between parenthesis under the coefficients of the equations are the respective standard errors. R² = multiple coefficient of determination. D.W. = Durbin-Watson statistic.

In equation 2, the per capita supply of coffee in the United States, Su, was introduced. The result is poorer since all coefficients, but that for Iw, were non significant. This equation is only included for later comparison.

It was due to the relatively poor results above and to the suspicion that, since the early sixties, structural changes affected the variables that the above equations were again tested for the 1947-61 period.

In comparison to equation 1, table 1, the equation estimated with data for the shorter time period (1947-61) showed improved results (see equation 1, table 2). The coefficient of determination increased to 0.88, and the multicollinearity problem was reduced.

Equation 2, also shows great improvement over its earlier counterpart. Results are now very good. All variables are significant, and the coefficient of determination is 0.96. Moreover, there is no multicollinearity between the independent variables. The coefficient of the Su variable was significant and, as expected, negative.
In equation 3 of table 2, the demand variable was dropped thus leaving only \( Iw \) and \( Su \) as independent variables. The result is a significant coefficient both for \( Iw \) and \( Su \), and the coefficient of determination is 0.84. Again, there are no multicollinearity problems.

In equation 4 of table 2, only the \( Iw \) variable was related to \( P \). The coefficient of this variable is significant and negative, and the coefficient of determination reached 0.50, a relatively high value considering that only one of the independent variables remained in the equation.

In general, the equations obtained from the 1947-61 series presented far better results than those obtained from the 1947-67 series. The multiple coefficient of determination in similar equations increased substantially, the standard error of the coefficient of the variables was reduced, in the same equation when fitted to the 1947-61 series.

**TABLE 2**

The 1947-61 regressions

<table>
<thead>
<tr>
<th>Equation</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>( R^2 )</th>
<th>D.W.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ( \log P = -6.18 + 2.64 \log Yd - 0.44 \log Iw )</td>
<td>-6.18</td>
<td>2.64</td>
<td>0.44</td>
<td>0.88</td>
</tr>
<tr>
<td>2. ( \log P = -1.45 + 1.80 \log Yd - 0.38 \log Iw - 1.46 \log Su )</td>
<td>-1.45</td>
<td>1.80</td>
<td>0.38</td>
<td>0.44</td>
</tr>
<tr>
<td>3. ( \log P = 5.64 - 0.27 \log Iw - 2.49 \log Su )</td>
<td>5.64</td>
<td>-0.27</td>
<td>-0.27</td>
<td>0.84</td>
</tr>
<tr>
<td>4. ( \log P = 2.11 - 0.28 \log Iw )</td>
<td>2.11</td>
<td>-0.28</td>
<td>-0.28</td>
<td>0.50</td>
</tr>
</tbody>
</table>

Note: The numbers between parenthesis under the coefficients of the equations are the respective standard errors. \( R^2 \) = multiple coefficient of determination. D.W. = Durbin-Watson statistic.

4. **Projections based on equations 2, 3 and 4, table 2**

The contrasting results of the two phases of the empirical study suggests that the mechanism of determination of coffee prices underwent changes during the 1960's. To examine further the situation, equations 2, 3 and 4 of table 2 were chosen for projections of the coffee prices for the 1962-68 period.
4.1. Projection using equation 2, table 2

Figure 1a shows the actual price of coffee, plotted together with the price estimated by equation 2, table 2. Since this equation included all the independent variables of the model, the estimated path of coffee price is very close to the actual path throughout the 1947-61 period, in line with the high coefficient of determination of this equation. As for the 1961-68 period, up to 1964 the two price paths do not differ appreciably. From 1958 on, however, one observes a tendency for the projected price to exceed the actual price (with the exception of the year 1960). And from 1964 on, the equation predicts a very sharp rise in the price of coffee, while the actual path was declining, with the exception of the 1964 upward swing.

What seems to have caused this divergence is a change in the structural relationship between the demand for coffee and the $Y_d$ variable. This variable increased uninterruptedly and very sharply from 1962 on, but it did not cause a corresponding rise in the demand for coffee. However, before reaching a more definite conclusion it is necessary to look closely to the separate influence of $S_u$ and $I_w$.

4.2. Projection with equation 3 of table 2

To determine if a change in the relationship between $Y_d$ and $P$ was the main reason for the divergence between the estimated and the actual path of the coffee price, equations 3 of table 2 (in which $Y_d$ was left out and $P$ was related to $I_w$ and $S_u$ only) was used for a projection. As seen in graph 1b, the actual and the estimated price move fairly close together initially. After 1963, however, there appears a sharp divergence between the price paths. The projected price remained at a lower level, showing a decreasing trend.

Comparing graph 1a and 1b, the projection based on the equation containing $Y_d$ produces higher and more sharply rising prices after 1963 than that without the demand variable. This confirmed the suspicion that structural changes in the relationship between $Y_d$ and the demand for coffee took place in the last 10 years. However, if the structural relationship underlying the remaining variables of the model had not changed since 1961, $S_u$ would also have contributed to an increase in coffee prices. Thus, it appears probable that more recently something has caused the coffee stocks within the United States market (reflected in $S_u$), corresponding to each level of the price of coffee, to be lower than in the 1947-64 period.
4.3. Projection with equation 4 of table 2

Graph 1c shows the projection derived from equation 4 of table 2, in which $P$ is related to $Iw$ only. We note that from 1960 on the trend of predicted prices is a fairly stable one, nearing the 1962 low level, but showing a slight upward tendency for the last six years. The path of the actual price was initially lower than that of the projected price, increasing sharply in 1964, only to embark again in a declining trend,
which in the end of the period, shows signs of easing off, but which is below that predicted by the equation.

Therefore, even if we assume that the only element affecting coffee prices in the 1960's was the volume of stocks retained by producing countries, more recently in this decade the level of $Iw$ would not warrant the declining trend of the observed prices. Of course, it is well possible that the structural link between $Iw$ and $P$ also changed since the ICA was approved.
In conclusion, it is not possible to say that the large volume of stocks in relative terms, alone, was responsible either for the low level of coffee prices, or for their declining trend in more recent years. A more complete explanation of the actual behavior of the price of coffee appears to be grounded in a number of changes that affected the structure of the coffee market, stemming both from the supply side of the international coffee market, and from internal conditions in the United States market.
involving, on one hand the demand variable, and on the other the internal supply variable. Next, an analysis of events since 1961 will try to identify some of the reasons for such changes, emphasizing the role of the ICA.

5. Analysis of the events on the coffee market after 1962

Examining events in the coffee market from 1962 to 1968, the main reasons for the peculiar behavior of the coffee prices can be attributed to: 1. The change in the relationship between \( Y_d \) and the demand for coffee. 2. The speculative spurt of 1963-64, followed by a change in inventory policies on the part of coffee importers. 3. Changes in the pattern of retention of coffee stock in producing countries (probably induced by the ICA). 4. Adoption by the ICA of the price selective system of supply adjustment.

A careful examination of events reveals that, except for the change in the role of the demand variable, and the speculative spurt of 1963-64, other factors that caused changes in the behavior of the coffee market either stem directly from the ICA, or are a consequence of the implementation of its policies.

5.1. Change in the relationship between \( Y_d \) and the demand for coffee

Since the second part of the 1950's \( Y_d \) became gradually a less representative demand variable. Behind this changing importance of \( Y_d \) there is, in the first place, the common sense explanation related to the declining income elasticity of demand for foodstuff and beverages, as the disposable income of a country increases. As \( Y_d \) rose following World War II, the income elasticity of demand for coffee being relatively large, the demand for this commodity shifted up markedly. However, subsequently, as the disposable income continued increasing further, the income elasticity of demand for coffee started to decline, probably reaching more recently very low levels (1).

Moreover, the lack of response of \( P \) to changes in \( Y_d \) was reinforced by the fact that we are examining the demand for coffee in raw state, and not as a final product. In the 1950's forms of economizing in the use of the raw material were introduced that made the yield per bag of green coffee in terms of cups of the beverage rise substantially. In fact, if we look at the per capita consumption of coffee in terms of green coffee,

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* This section is based on a detailed examination of various sources such as newspaper articles (published in Brazil and in the United States) and especially of various issues of the *Foreign Agriculture Circular*, FCOF – Coffee, see (9).
the conclusion is that it has decreased since coffee prices peaked in 1954. But looking at the consumption in terms of cups per person, per year, it becomes apparent that per capita consumption increased after the war, up to 1958. After this year, per capita consumption stabilized, fluctuating around 2.9 cups per person per day (3, p. 31). However, changes in the relationship of \( Y_d \) to the demand for coffee had little to do with the ICA. It evolved within the United States market, having affected coffee prices due to its importance in a world-wide context.

5.2. The speculative spurt of 1963-64, followed by a change in inventory policy by coffee importers

A series of events in Brazil during 1963-64, combined with expectations of a dock strike in the United States triggered a speculative spurt, mainly in this country's market, that caused the substantial increase in the import price of coffee in 1964. A result of this upsurge was the accumulation by importers of unusually large stocks of green coffee. Consequently, in the following years a slackening in the world coffee trade occurred, while importers reduced inventories to a normal size. This, in turn, caused the price of coffee to plunge.

Again, these events had little to do with the ICA. They were caused by the expected behavior of commercial enterprises. In fact, such events may be taken as evidence that the agreement was then unable to control the price of coffee. But since 1965, after the gradual enforcement of a system of control which effectively reduced fluctuations in coffee prices, importers and traders started to diminish the level of normal inventories, thus working more on a hand to mouth basis. From 1965 to 1968 the level of inventories were below the average of the previous years. This practice was followed because traders expected producing countries to continue holding large stocks of unsold coffee. More recently, however, the situation changed again. The reduction of Brazil's productive capacity plus the effects of the 1969 frosts (it reduced sharply the country's next two crops) started a rush towards larger inventories, accompanied by a rising trend in prices.

5.3. Change in the pattern of retention of coffee stocks in producing countries

Until very recently the large producing countries (mainly Brazil), were the holders of almost all of the retained coffee. Early in this century they
began to realize that whenever over-production of coffee takes place, prices tend to fall very sharply. As a consequence, an infrastructure was developed to permit them to hold substantial stocks of coffee for a indefinite amount of time.

More recently the situation changed, as production continued to increase everywhere, especially after World War II. When the ICA was approved, it divided the market in importing countries among the producing members of the agreement. As a result, many smaller producing members, bound by the quotas that were established, became unable to sell all of their yearly production, and gradually the responsibility of holding stocks was extended to them also.

The ICA's system of supply control has had loopholes which, to a certain extent, permitted the small producing countries to avoid their obligations under the agreement. An assortment of subterfuges caused the effective supply of coffee reaching the world market to be larger than the appropriate for maintaining coffee prices at the desired level. Recently new clauses were introduced to strengthen the agreement's control apparatus. However, at this writing it is still early to evaluate these efforts to make the agreement more effective.

The above discussion helps to explain the changing role of the $I_w$ variable since the ICA was approved. The relatively smaller stocks retained by producing countries during the last few years depressed the price of coffee more than the larger stocks of former years. Now a greater proportion of a given stock is held by the small producers which are less willing to carry the burden of the defense of coffee prices.

5.4. Effects of the ICA's control scheme

An examination of the mechanism of control of the agreement up to early 1969 will reveal forces that could have a depressing effect on prices.

The mechanism of control of the supply of coffee by the ICA has not remained static since 1962. It was changed and adapted to circumstances. A complete analysis of its evolutions is beyond the scope of this study. However, initially the total export entitlements of the exporting members of the agreement was fixed for the market year, changeable only by express authorization of the International Coffee Council. This system was too rigid to be effective, as shown by the behavior of prices during this

* For details on the evolution of the mechanism of control of the supply of coffee by the ICA, see (2), p. 6-15.

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phase of the ICA. Consequently an automatic system of adjustments was introduced. It was based on an Indicator Price, an average price, of the four main types of coffee traded, to be calculated daily and compared to a predetermined price range. If the indicator price moved outside this range for more than 15 consecutive days, all quotas would be adjusted, upwards if it exceeded the ceiling of the range, or downwards if it remained below its floor. This mechanism allowed for across the board adjustments up to a maximum of six percent of the export entitlements.

This system was not effective in stabilizing the price of coffee. Moreover, it created distortions on the balance between the various types of coffee traded. Therefore, in 1966 the System of Selective Adjustment of the Supply of Coffee was introduced. This system distinguished between the basic quotas and the other portions of the export entitlements. The first could be altered only by the International Coffee Council. The second, constituting about five percent of the total authorized exports, were affected by the mechanism of the Selective System.

The Selective System is also based on indicator prices. Each of the four main types of coffee traded was to have an indicator price calculated daily from the New York quotations for prompt shipment. There was a floor and a ceiling for each indicator group, fixed by the International Coffee Organization, and when the price indicator of a type of coffee exceeded the ceiling, the “other portions of the export entitlements” of the members of the ICA exporting this type of coffee was adjusted upwards. Vice-versa if the indicator price fell below the floor. These adjustments were limited to 2.5 percent of the total authorized export each time the indicator price exceeded the respective range for more than 15 consecutive days, with no upward limit. However, there was a limit downwards. When the total of the “other portions of the export authorizations” was exhausted, no further cuts in entitlements could be made. Then only the International Coffee Council was allowed to change quotas.

The Selective System, coupled with the tendency of the overall quotas at the beginning of the market year of being set at too high a level, imparted a downward bias to the price of coffee. If the available supply of coffee at the beginning of the market year is large, and if the mechanism of adjustment of such a supply to changes in prices faces a downward limit, its efficacy in preventing coffee prices from declining is impaired.

* Colombian Mild Arabicas, Other Mild Arabicas, Unwashed Arabicas, and Robustas. Brazil produces mainly Unwashed Arabicas, while the African countries chiefly produce the Robusta variety of coffee.
The tendency, frequently observed during the period, of setting initial quotas at an excessive level occurred because no producing country wanted to lose its relative share of the market, while several members of the agreement, plagued with excess production and in dire need of foreign exchange, desired a larger share of the entitlements, hoping to improve their position. The inflation of quotas was further advanced by the lobby of coffee importers, which obviously desired a plentiful supply of coffee, at the minimum possible price. The situation was changed in 1969 by the mentioned reduction of Brazil's prospective coffee supply.

Examination of the evolution of the monthly average of the prices of several types of coffee from 1959 to early in 1969, shows that the Selective System was more effective than the previous instruments of control in reducing fluctuations in the price of coffee. On the other hand, the slightly declining trend of coffee prices is also apparent after the adoption of the Selective System. Between 1966 and 1969 there was only a short-lived upward swing in prices in 1968, caused by an inventory build-up triggered by fears of another dock strike in the United States.

6. Conclusions

The results of the empirical study warrant a few observations. First, there is the loss of predictability of the demand variable \( \bar{Y}d \). This took place within the United States market but the American experience indicates that in other developed countries the demand for coffee is not likely to increase proportionally to their per capita incomes. Coupling this with the prospects of very slow growth of the per capita income in most less developed countries it seems safe to say that, at least in the near future, a marked expansion of the demand for coffee will not take place.

As for the internal supply of coffee in the United States, \( s_u \), the remarkable feature of this variable is its sensitivity to various factors such as prospects of dock strikes and events in producing countries. These changes in the expectations of importers lead to fluctuations in the level of normal commercial stocks of coffee. The price of this commodity varies when traders act to correct the discrepancy between the actual and the normal level of such stocks. In the context of the ICA this means \( s_u \) will continue to be an element of instability in the important United States market. To avoid this the ICA could perhaps institute a scheme to reduce this instability, such as the maintenance of buffer stocks in the United States and in major consuming countries where the problem is similar. These would reduce uncertainties and the consequent variations
inventory levels. An obstacle would probably be the high cost of such a scheme.

Regarding the unsold stocks maintained by producing countries, the remarkable feature of this variable has been the persistence of its effects on the price of coffee. Even in equations where the results were poor, the \( I_w \) variable showed up with a small standard error. Furthermore, the effect of its fluctuations on the price of coffee was fairly large. Moreover, the existence of too large or too small levels of stocks may threaten the very existence of the agreement. Recently, when those stocks were too large relative to demand, chiseling and the use of loopholes almost disrupted the ICA. Now, the upward pressure on the price of coffee caused by expectations of very low levels of \( I_w \), by angering the consuming countries may create problems to the agreement. Of course, the factor behind these problems is the slow response of the supply of coffee to changes in price. Therefore, efforts should be directed towards some sort of long term policy by which both very large and insufficient stocks of coffee would be avoided. If feasible this would both reduce the threats to the agreement and substantially avoid the long range fluctuations in coffee prices. Unfortunately, the prospects of such a long term arrangement ever becoming a reality are slim indeed.

Although still too early to speculate on the effects of the eventual decline in \( I_w \), if the high price of coffee actually observed is maintained for some time, it is likely that a planting spurt throughout the world will increase the level of \( I_w \) a few years from now, which would again send the price of coffee down to low levels.

In general, the observation that, as the result of the functioning of the International Coffee Agreement, the 1962-68 coffee prices showed a tendency of fluctuating around a declining trend is, at the first sight, somewhat surprising. The nature of the agreement, originally sponsored by the United Nations, would lead one to expect that its adoption would result in price stabilization at a level satisfying the aspirations of its less developed members, the producing countries. Furthermore, the implicit rationale of the ICA is to substitute trade for aid. However, if one examines events more closely, the actual results are not surprising. It is clear that the agreement has substituted, to a large extent, forces which earlier interacted in the coffee market to determine its price. The ICA as it operated up to mid-1969, was a two way bargain between the coffee producing countries on the one hand, with an overexpanded productive capacity, large surpluses, and in need of foreign exchange of which coffee is one of the main
providers, and the high income, industrialized countries, on the other hand, whose demand for coffee has been increasing at a slow pace. Since it is the relative strength of the two sides of the agreement that determines the level of coffee prices in a bilateral monopoly type of organization, it would not be realistic to expect anything but the observed low level of coffee prices. This is particularly true if we consider that in the main importing member of the ICA — the United States — the political pressure against the participation in the agreement has been strong.

References


O Instituto de Organização Racional do Trabalho da Guanabara — abreviada mente IDORT-GB — como seus congêneres de outros Estados, propõe-se a realizar e proporcionar a seus associados e demais interessados:

Intercâmbio internacional Revista
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