AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D. C. 20523

BIBLIOGRAPHIC INPUT SHEET

FOR AID USE ONLY

1. SUBJECT CLASSIFICATION

A. PRIMARY: Economics

B. SECONDARY: General Economics

2. TITLE AND SUBTITLE

Import controls and production in Tunisia during the 1960's

3. AUTHOR(S)

Blake,Robt.

4. DOCUMENT DATE	5. NUMBER OF PAGES	6. ARC NUMBER
1974	45p.	ARC TS-382.3-B636

7. REFERENCE ORGANIZATION NAME AND ADDRESS

University of Michigan
Center for Research on Economic Development
Ann Arbor, Michigan 48108

8. SUPPLEMENTARY NOTES (*Sponsoring Organization, Publishers, Availability*)

Available from above address for $1 plus postage and handling

9. ABSTRACT

This paper examines the effects of the import control system in Tunisia during the 1960's. It discusses (i) Tunisia's import-substitution strategy and the factors which motivated it, (ii) the effects of this system on the terms of trade between industry and agriculture, and (iii) the structure of effective protection accorded to Tunisia's industries. The results indicate a bias in favor of production processes oriented toward the Tunisian rather than foreign markets. The manufacturing industries were promoted relative to primary production. There are also wide divergences among rates of effective protection at the product level, and some of the high rates of effective protection represented subsidization of inefficient producers.

10. CONTROL NUMBER	11. PRICE OF DOCUMENT
PN-AAB-120	
12. DESCRIPTORS	**13. PROJECT NUMBER**
Import Control System, Industry, Import-Substitution, Agriculture, Trade, Production, Foreign Markets	931-11-995-118
	14. CONTRACT NUMBER CSD-2547 211(d)
	15. TYPE OF DOCUMENT Discussion Paper

AID 590-1 (4-74)

Import Controls and Production in Tunisia During the 1960's

by

Robert Blake

IMPORT CONTROLS AND PRODUCTION IN TUNISIA DURING THE 1960'S

by

Robert Blake*

ABSTRACT

This paper examines the effects of the import control system in Tunisia during the 1960's. It discusses (i) Tunisia's import-substitution strategy and the factors which motivated it, (ii) the effects of this system on the terms of trade between industry and agriculture, and (iii) the structure of effective protection accorded to Tunisia's industries. The results indicate a bias in favor of production processes oriented toward the Tunisian rather than foreign markets. The manufacturing industries were promoted relative to primary production. There are also wide divergences among rates of effective protection at the product level, and some of the high rates of effective protection represented subsidization of inefficient producers.

* International Economist, U.S. Treasury Department. The opinions expressed in this paper do not represent the official policy of the U.S. Treasury Department.

Table of Contents

List of Tables

Import Controls and Production in Tunisia During the 1960's

I. Introduction

We attempt in this paper to determine the effects of the import control system in Tunisia during the 1960's. This period began with the introduction of comprehensive economic planning in 1961 and ended with the change of government in late 1969. The period does not include the more recent attempts to liberalize the economy as these postdate 1970.

Many of the effects which we will describe in this paper are attributable in part to characteristics of the Tunisian economy other than import controls. We have focused on import controls, however, because these have been crucial for the existence of other government policies. The import policy provides us then with a framework to discuss numerous other government policies.

The next section discusses the Tunisian import substitution strategy and the considerations which led to the choice of this strategy. The third section describes the operation of the system of protection. The following section discusses the effects of this system on the terms of trade between industry and agriculture while the fifth section outlines briefly the theory of effective protection. This is followed by our calculations of effective protection rates. In the last section we present our conclusions.

II. Background

Tunisia achieved independence from France in 1956. The first five years after independence saw relatively little government intervention in the economy, the government's attention being occupied by a variety of political problems.[1] With the advent of the 'sixties, however, the Tunisian government began systematic economic planning, stressing industrialization in the context of import substitution. In this choice

of policy, Tunisia differed little from a number of other newly independent countries.[2] Unlike several other less developed countries, however, the Tunisian government's choice was made quite consciously and was not the unintended result of import restriction due to balance of payment difficulties.[3] Indeed, it can be argued that the particular pattern of industrialization chosen by the Tunisian planners aggravated the balance of payments problems.[4] Given the deliberate decision to adopt an import substitution strategy, it is instructive to examine the considerations which underlay this decision.

The policy of import substitution grew out of the situation confronting the Tunisian planners immediately after independence. At that time Tunisian production was dominated by the primary and service sectors. This can be seen in the following table which gives the sectoral breakdown of gross domestic product (GDP) for 1960 as well as the structure of employment in 1956.

Table 1

The Structure of Production (1960) and Employment (1956) (in per cent)

Sector	Per cent of GDP	Per cent of Employment
Agriculture	24.9	72.1
Mines	2.2	1.2
Petroleum products	n.a.	n.a.
Electricity	0.9	0.3
Other energy	1.1	
Food products	7.8	1.3
Construction materials	1.2	0.6
Mechanical and electrical industries	0.4	1.0
Chemical industries	0.3	0.8
Textile and leather industries	2.2	2.8
Wood products	0.7	0.5
Paper and printing	0.9	0.1
Other industries	n.a.	0.1
Construction	7.5	1.9
Transportation	6.7	1.9
Rents	4.3	n.a.
Commerce	16.4	6.3
Domestic services	0.7	n.a.
Administration	13.7	3.9
Other services	7.9	2.9
Unidentified	n.a.	4.6

Sources: Les Comptes de la Nation, Vol. II, p. 19. Le Plan Triennal, 1962-64, p. 329.

This table demonstrates the relatively insignificant contribution of industry to GDP; with construction eliminated, industry accounted for only 15.5 per cent of total GDP in 1960. Of this contribution, approximately half was owed to a single sector, the food processing industries. The relatively small contribution to total output provided by industry can be contrasted with that of the service sector which provided 49.7 per cent of total GDP.

We can compare this structure of production with the structure of employment as it existed in 1956. We can see in table 1 that the agricultural sector provided the great bulk of employment. Agriculture and mining together accounted for slightly less than three-quarters of all employment. The bulk of the residual employment was provided by the service sector, which provided 14.0 per cent of all employment. This left a total of 8.8 per cent of total employment occurring in the industrial sector, the remaining 4.6 per cent being unidentified.

The relatively unimportant role of the industrial sector in the economy is also evident in the foreign trade statistics. The existence of a customs union between Tunisia and France during the period of the protectorate had led to a pattern of specialization wherein Tunisia exported a limited number of unprocessed or semi-processed commodities to France, while importing manufactured goods. Table 2 displays this pattern.

The importance of final products in total imports varied from 40 per cent to 58 per cent during the period 1950-60. In 1956, due to the departure of many Europeans, there was a sharp fall in the imports of final products. The high proportion of final products in total imports contrasts with their insignificance in Tunisian exports. Foodstuffs and raw materials accounted for 96 - 98 per cent of the total value of exports during these eleven years.

Tunisian exports were concentrated in a very small group of commodities: cereals, olive oil, wine, phosphate ore, iron ore, and superphosphates. These six commodities accounted for 64 per cent of total export value in 1960 and only one of these commodities, superphosphates, involves anything more than rudimentary processing. The rest were exported for processing abroad, chiefly France. In 1961, for example, 55 per cent of the total value of Tunisian exports were sent to France.

Table 2

The Structure of Trade, 1950-1960
(in 1000 Dinars)*

Year	Foodstuffs	Raw Material	Final Products	Total Imports
1950	8205	13560	29768	51533
1951	13254	17375	33190	63819
1952	11719	19707	33452	64878
1953	10824	16602	32695	60121
1954	10796	16934	31747	59477
1955	13658	18300	31318	63276
1956	21613	18951	27437	68001
1957	16095	18974	28282	63351
1958	12305	21124	31458	64887
1959	12500	20527	31175	64202
1960	15150	25556	39385	80092

Year	Foodstuffs	Raw Material	Final Products	Total Exports
1950	26708	12518	600	39826
1951	14133	22651	751	37536
1952	17651	21243	1168	40060
1953	20436	17857	810	39103
1954	23401	19892	1184	44477
1955	14987	21140	1261	37388
1956	13791	24082	1424	39297
1957	26456	25855	1876	54187
1958	37930	25093	1383	64405
1959	35895	22759	930	59584
1960	28346	20855	1066	50267

Source: Annuaire Statistique de la Tunisie.
Note: *$1 = .420 Tunisian dinars before September 1964.
$1 = .520 Tunisian dinars after September 1964.

The importance of the French market was particularly striking in the case of wine. The cultivation of grapes on a wide scale began under the French protectorate, for the vast majority of Tunisians are Moslem and are therefore forbidden to consume alcohol. The wine which was produced was destined for export, primarily to France where it was mixed with weaker French wines. The production of Tunisian wine was thus closely tied to the French market. This dependence was emphasized when the French government cancelled the Tunisian wine quota in 1965 in retaliation for the Tunisian nationalization of colon lands.[5]

We can measure Tunisia's reliance on foreign trade by the ratio of total imports or exports of goods to GDP. These ratios are given in table 3, columns 1 and 2, respectively.

Table 3

Dependency Ratios: Imports and Exports as a Per Cent of GDP, 1950-1959

Year	Imports as a per cent of GDP	Exports as a per cent of GDP
1950	.29	.23
1951	.37	.22
1952	.33	.20
1953	.30	.19
1954	.29	.22
1955	.33	.20
1956	.32	.18
1957	.31	.27
1958	.28	.28
1959	.29	.27

Sources: Les Perspectives Décennales de Développement.
Annuaire Statistiques de la Tunisie.

This table demonstrates the dependence of the Tunisian economy on foreign trade. The high proportion of imports and exports to total GDP is understandable in light of Tunisia's relatively small domestic market and poor resource base.[6]

In summary, at the beginning of the 1960's the Tunisian economy was dominated by the primary and tertiary sectors, both in terms of production and in terms of employment. The relative predominance of the primary sector was even more strikingly apparent in the structure of Tunisia's foreign trade, with exports of foodstuffs and raw materials accounting for virtually all exports. In contrast, Tunisia's imports were dominated by final products, with these goods accounting for approximately 50 per cent of the total value of imports in the 1950's. As a consequence of this situation, imports accounted for a large proportion of total Tunisian availabilities of manufactured goods. In 1960, for example, a total Tunisian production of manufactured goods of 57,679,000 dinars can be contrasted with imports of 58,982,000 dinars of these same goods.[7]

This pattern of production and trade was considered to be non-optimal by the Tunisian government as it led, in their view, to a too great dependence of the Tunisian economy on foreign markets. Implicit in this view was the belief that the particular pattern of trade resulted

from Tunisia's colonial heritage. This view is most strikingly expressed in the following quotation:

> As is the case for most other African countries, Tunisia did not escape colonialization. The Protectorate imposed a domination on Tunisia, placing Tunisia in the famous "colonial Pact".
>
> As a result of this regime, Tunisia's international commerce with countries in the franc zone and more particularly France, and numerous French economic elements were invested in the different financial, industrial and agricultural sectors of the Tunisian economy.[8]

Following this view, an industrialization strategy was to develop Tunisia in the manner it would have followed in the absence of its domination by France.[9] An industrialization strategy was also dictated by other considerations. We have seen in table 1 the large share of the service sector in total GDP. The planners felt this share to be too large because it reflected an economy in which there was a multitude of small-scale retailers.[10] This view was confirmed by later policy in this area in which the government attempted to reorganize the distribution network along the lines of cooperatives.

Similar views held for the agricultural sector as well. The vast majority of the farmers managed small holdings and labor absorption on these farms would be extremely limited.[11] A certain amount of labor absorption could be expected on the larger holdings and as a result of increased irrigation, but even here the possibilities were limited as the large farms were already mechanized to some extent. Agriculture could not be expected to absorb all of the increase in the labor force. Indeed, many of the agricultural reforms proposed in the Perspectives, such as the consolidation of small holdings into cooperatives, and increased mechanization, would probably have led to decreased labor requirements.

Given the undesirability of increasing employment in the service sector and the inability to provide all of the increased employment in agriculture, a development of industry was necessary. Of course, increased industrialization does not necessarily have to take place through import substitution, but given the planners' concern with minimizing Tunisia's dependence on the exterior, the two strategies were one and the same.[12]

A distinctive feature of the Tunisian industrialization was that many of the investments were in public enterprises. This point is brought out in table 4.

Table 4

Manufacturing Investment in Public and Private Enterprises, 1960-70
(in current prices) (1000 dinars)

Sector	Public	Private
Food and beverage	20504	4638
Mechanical and electrical industries	35788	4265
Chemical industries	7673	4786
Textile industries	24120	7305
Wood products	659	1646
Paper and printing	14390	1053

Source: Ministère du Plan, Rétrospectives de Développement.

It is not surprising that the government played a central role in the allocation of investable funds given the high proportion of foreign aid in the total supply of such funds. For the period 1962-70, foreign financing accounted for 47 per cent of total fixed investment. At the same time, it might be expected that the government was somewhat less motivated than private firms by considerations of profit in its investment decisions, and in its operation of enterprises.[13] We discuss this point further in section VII.

III. The System of Protection in Tunisia

Protection to domestic producers can be provided in a number of ways: tariffs, import licensing, multiple exchange rates, prior deposits for imports, and government preference for domestic over foreign suppliers in its purchases. Tunisia used a number of these techniques to limit imports, but the most significant were the first two.

A. Tariffs

The Tunisian tariff dates from 1959 and the abrogation of the customs union between Tunisia and France. Before that time Tunisia and France had a common tariff. The 1959 tariff was rather hastily drawn up and subsequent changes had modified it considerably by 1972, when a new tariff was established.

The Tunisian tariff has two components: the droits de douane (DD) and the taxe de formalités douanières (TFD). The taxe de formalités

douanières represents the charge to importers and exporters for the cost of handling their merchandise in customs. The rate established in 1959 for this tax was 1.5 per cent, the rate later increasing to 2.5 per cent in 1971.

The droits de douane, unlike the taxe de formalités douanières, vary from commodity to commodity. In the 1959 tariff code these rates varied from 80 per cent for wool rugs and fezzes, to 0 per cent. The number of high tariff rates in the code was relatively small. In addition to the two rates given above, there was a 60 per cent rate on salt and other rugs, as well as a rate of 50 per cent on seven items. The vast majority of tariff rates were then between 0 - 50 per cent. The high tariff rates quoted above were all on products which Tunisia already produced in 1959, and were largely redundant.

To provide a general indication of the overall level of tariffs in Tunisia, we have calculated average tariffs for a number of years. These calculations are given in the following table.

Table 5

Average Tariff Rates, 1966-1969

Year	Imports in 1000 D (1)	DD (2)	TFD (3)	(2+3)/1 (4)
1966	131224	9678	2208	.09
1967	137087	8577	2276	.08
1968	114498	6732	1900	.08
1969	139777	8346	2489	.08

Source: Annuaire Statistique de la Tunisie.

It appears from this table that the tariff rates in Tunisia are moderate, particularly when compared with the rates in other developing countries.[15] Of equal interest with the level of tariffs is their structure, their variation through the different stages of processing. An examination of the 1959 code shows that the tariff rates generally increase as the degree of processing increases. Some typical examples are provided in table 6.

B. Import Licensing

In addition to the tariff system, protection was also provided

Table 6

Tariff Rates at Different Stages of Processing 1959

	DD (%)
Cotton textiles	
cotton in bales	0
cotton, carded or combed	5
cotton thread, non-conditioned	15
cotton cloth	30
Tires	
rubber in natural state	0
rubber in sheets or bands	5
inner tubes weighing 2 kg. or less	20
inner tubes weighing more than 2 kg.	10
tires weighing less than 15 kg.	20
tires weighing more than 15 kg.	10
Shoes	
animal skins	0
bovine leather, tanned only	15
bovine leather, worked after tanning	20
shoes	30

Source: Tariff des Droit de Douane à l'Importation ou à l'Exportation.

to domestic producers by an import licensing regime. This system was administered by the Direction du Commerce of the Ministère de l'Economie Nationale and the Central Bank. The licensing system was rather complex and only a brief outline will be provided here.

Both the Direction du Commerce and the Central Bank had to approve each request for an import license, the Direction examining import requests from the point of view of their technical necessity. Approval was granted by the Direction on the basis of projected supplies and domestic availabilities of the product, the import price, and the industrial branch of the demander. The Central Bank decision was guided by foreign exchange availabilities. This occasionally led to difficulties when foreign exchange became tight and import license requests accumulated at the Central Bank.

The cumbersomeness of this system was mitigated to some extent by the relatively small size of the Tunisian economy. Difficulties resulting from import restrictions could be brought to the notice of the authorities fairly quickly, and, if the sector was important, requests could

be expedited. It remained true, however, that it was not uncommon for the system to cause less than capacity production due to the unavailability of imported raw materials or spare parts.[16]

The establishment of annual import quotas for the imports of certain goods facilitated the operation of the import licensing system. These quotas were typically established for widely used consumption goods such as sugar, coffee, and tea. For these goods an annual announcement was made to importers that licenses would be offered for imports of these commodities. The government then issued licenses until the quota was exhausted.

The operation of the import licensing system had the effect of keeping actual imports close to the import projections contained in the annual plans. The following table gives a comparison of the predicted with the actual imports:

Table 7

Comparison of Import Predictions with Actual Imports
1966-1970

Year	Import Predictions	Actual Imports
1966	129.0	131.2
1967	134.8	137.1
1968	135.0	115.0
1969	137.6	139.8
1970	152.5	160.4

Sources: Budgets Economiques.
Statistiques du Commerce Extérieur de la Tunisie.

We see in table 7 that with the exception of 1968 the actual imports were within 5 per cent of the planned imports. The divergence in 1968 is attributable in part to favorable harvests, which enabled imports of foodstuffs to be reduced below planned levels, and in part to a decision to tighten up the import control system. It is noteworthy that the Direction du Commerce had approved 18 million dinars worth of import licenses in 1968 which were not utilized, presumably because authorization was not given by the Central Bank.[17]

The import licensing system provided protection to domestic producers in that one of the criteria used in determining the fate of import requests was the domestic availability of the good. Imports of goods

produced domestically were in principle prohibited. These goods fell under the regime of "prohibitions relatives" for which occasional imports might be made, usually in cases where domestic supply fell unexpectedly. The growth in Tunisian industrial production led then to the successive elimination of competing imports, which were primarily consumer goods as is shown in table 8.

Table 8

Imports of Manufactured Consumer Goods as a Percentage of Total Imports, 1957-1969

Year	Consumer Goods (in 1000 D)	Total Imports (in 1000 D)	Percentage
1957	21571	63352	34.0
1958	21950	64881	33.8
1959	21888	64202	34.1
1960	23849	80092	29.8
1961	21659	88447	24.5
1962	22971	90890	25.3
1963	21491	93662	23.0
1964	22488	110845	20.3
1965	22030	129062	17.1
1966	20851	131224	15.9
1967	21639	137087	15.8
1968	17627	114498	15.4
1969	21163	139777	15.1

Source: Statistiques du Commerce Extérieur de la Tunisie.

C. Other Protective Measures

Still another form of protection was provided by the combined workings of certain import monopolies and domestic price controls. Specific government bodies were the sole authorities permitted to import certain commodities. This procedure facilitated administrative control over these imports. Many of these imports were also subject to price control on the domestic market and the net effect was often to create a differential between the Tunisian and the world market price.

The two most striking examples of the operation of this system were grains and sugar. The import of cereals was confined to the Office de Céréales. These grains were then marketed at the fixed price. As the world market price was below the domestic price, this provided the Tunisian farmer a measure of protection.

A similar situation existed for sugar where the Office du Commerce de Tunisie (OCT), an independent government body, was the sole importer of sugar. The sugar was then sold at the controlled market price, a price which was generally above the imported price. As there were two domestic producers of sugar, this operation provided them a certain measure of protection.

The operation described above was not necessarily designed to provide protection to domestic producers in each case, although it had that effect. Indeed, the operation occasionally gave rise to negative protection when the controlled price fell below the import price. This occurred in 1972 for sugar as a result of the rapid rise in the world market price of this commodity. This led to a situation where the OCT imported sugar at the world market price and sold it for a lower domestic price.

In conclusion, we can note that both the tariff code and the import licensing system worked so as to protect domestic industry from foreign competition. The tariff system was cascaded, providing more protection the higher the degree of processing. The import licensing system was similarly structured so as to protect domestic producers. Imports of competitive goods were relatively restricted while imports of raw materials and spare parts were relatively liberal. The effect of this system on Tunisian prices is the subject of the next section.

IV. Effects of Import Controls: Terms of Trade Between Agriculture and Industry

In the absence of quantitative restrictions on imports, the maximum difference between Tunisian and world market prices would be given by the Tunisian tariff. However, quantitative restrictions can provide protection to domestic producers over and above that given by tariffs. Therefore to determine the difference between Tunisian and world market prices we must calculate the difference product by product on the basis of volume and other data.

Such calculations are also made necessary by the pervasive price controls existing in Tunisia during this period. These price controls consisted in part of fixing the prices of certain basic consumption goods

such as cereals, sugar, and olive oil. Regulation of the profit margins of producers fixed the prices of most other products and the effect of this system was probably to keep domestic prices closer to their costs of production than would otherwise have been the case given the import controls and the paucity of domestic competition.

It is of some interest to examine how the import controls affected the domestic terms of trade between agricultural and industrial commodities. The reason for this interest lies in the importance of the agricultural sector in most less developed countries as this sector generates a large proportion of total output and savings. A policy of industrialization is likely to require then the transfer of resources from the agricultural to the industrial sector.

In several less developed countries this transfer has been affected through the government's import and export policy.[18] Import tariffs and quantitative restrictions on imports have the effect of raising the domestic price of commodities above their world market price (c.i.f.), while export taxes or quantitative restrictions on exports have the effect of lowering domestic prices of exportables relative to their world market prices (f.o.b.). If the import-competing commodities are produced by the industrial sector and the export commodities are produced by the agricultural sector, this system will cause the terms of trade between agriculture and industry in domestic prices to differ from those on the world market. This difference can lead to a transfer of resources from the agricultural to the industrial sector when the agricultural sector is forced to purchase relatively high-priced domestic industrial goods while selling its output in the domestic market at prices below those of the world market.

We have attempted to determine the extent to which the import control system led to a divergence of the internal Tunisian terms of trade between industry and agriculture from those on the world market. For three years, 1962, 1966, and 1969, we collected data on Tunisian and world market prices for a number of agricultural and industrial commodities. The agricultural commodities were the following: hard wheat, bread wheat, barley, cattle, sheep, citrus fruits, and olive oil. This group represented about 65 per cent of total agricultural production in these three years. Similar prices were calculated for a wide range of industrial goods. The industrial sample covered the following percentages of total

production in the following industrial sectors in 1969:

Table 9

Coverage of Total Production for Industrial Sample of Prices by Sector, 1969

Sector	Percentage
Mining (salt only)	6
Petroleum products	99
Food processing industries	37
Construction materials	59
Mechanical and electrical industries	71
Chemical industries	66
Textile industries	42
Paper and printing	52

In these calculations world market prices for export goods were measured by the export price (f.o.b.), and for imports of competitive goods by the import price (c.i.f.). The Tunisian prices were calculated on the basis of production data by commodity supplied by the Ministère du Plan and the Ministère de l'Agriculture, the prices so calculated being the rough equivalent of wholesale prices.

Thus, the Tunisian price for bread wheat is the domestic support price fixed by the government (Dinars 43/ton in 1969) while the world market price is the import price (Dinars 35/ton). By way of contrast, for a product which is exported such as olive oil, we compare the domestic Tunisian price (Dinars 289/ton in 1969) with the export price (Dinars 355/ton). Similar calculations were made for other agricultural and industrial products.

For some products, such as cement, the good is exported at a price below the domestic price while imports would occur at a price above the domestic price. This is due to the high transportation costs associated with these commodities. In these cases, we have taken the domestic price as the world market price. While in such cases the export price approximates the marginal costs of production, the difference between the domestic price and the export price is not attributable to the system of protection. To make this point differently, some price distortion apparently exists in these cases, but when the domestic price is less than the import price, we cannot eliminate the distortion through changes in

trade policy.

Having calculated the world market and domestic prices for a particular commodity, we multiplied this price by the amount of the total Tunisian production which was consumed in Tunisia. This amount is the difference between total Tunisian production and Tunisian exports.[19] These values were then aggregated across commodities. A division of the value of industrial or agricultural production in Tunisian prices by its value of production in world market prices provides us with a measure of the average degree of overvaluation of domestic prices relative to world market prices for agriculture and industry. These results are given in table 10.

Table 10

Value of Tunisian Agricultural and Industrial Production in Tunisian Prices as a Percentage of Value of Industrial Production in World Market Prices, and Internal Terms of Trade 1962, 1966, 1969

Year	Industry (1)	Agriculture (2)	Internal Terms of Trade (1)/(2) (3)
1962	1.33	1.02	1.30
1966	1.22	.89	1.37
1969	1.29	1.01	1.29

These figures must be interpreted with a certain degree of caution. In particular, the overvaluation of Tunisian prices relative to world market prices is probably overestimated for the industrial commodities in 1962. This overestimation results from the relatively limited coverage of the industrial production in 1962, particularly in the sector of mechanical and electrical industries. This limited coverage resulted in the relatively heavy weighting in the total sample of a few products, notably tobacco, which have a large divergence between Tunisian and world market prices.[20]

It appears also probable that we have underestimated Tunisian prices relative to world market prices for the agricultural products in 1962. Because of the lack of quantity data for citrus fruits in 1962 we were not able to include them in our sample. As the Tunisian prices of

citrus products differed little from their world market prices, this omission biases our estimate of the Tunisian price of agricultural goods down relative to the world market price. As a result of these considerations, it seems probable that the actual terms of trade in 1962 for agriculture were not as unfavorable as they might appear from our calculations.

Our figures indicate that the Tunisian trade controls did have the effect of distorting domestic relative prices, penalizing the agricultural sector relative to the industrial sector. This distortion arose because the import controls provided a substantial measure of protection to the industrial goods. In 1969, for example, the Tunisian prices for these industrial goods exceeded their world market prices by 29 per cent on the average.

The degree of protection given the industrial sector can be compared with the pricing policy followed in the agricultural sector. For a portion of the production, primarily cereals, the Tunisian domestic price exceeded the world market price.[21] This policy was followed so as to encourage domestic farmers to grow more grain, Tunisia being forced to import large quantities of wheat. In contrast, the domestic price of olive oil was below its world market price, this divergence resulting from a variety of taxes and charges on olive oil exports.[22] The other agricultural products in our sample had domestic prices which diverged only slightly from their world market prices. When we combine these different pricing policies we have a Tunisian agricultural price which, on the average, differs little from the world market price.

The behavior of the terms of trade through time also merits some comment. Table 10 indicates that the Tunisian terms of trade differed much more from the world terms of trade in 1966 than they did in 1962. The calculations also indicate that the divergence in the two terms decreased between 1966 and 1969. In an attempt to determine more precisely the source of these changes, we have recalculated the value of production figures for both industry and agriculture using 1966 quantity weights. These results are presented in table 11 as percentages of the 1966 values.

This table demonstrates that the convergence between 1962 and 1966 of the Tunisian prices of industrial goods to the world market prices is a result of the relatively larger increase in the world market prices of these goods on the average. This result appears attributable to the

Table 11

Index of Value of Output in Tunisian and World Market Prices 1962, 1966, 1969

	1962	1966	1969
Value of industrial production in Tunisian prices	89	100	111
Value of industrial production in world prices	82	100	102
Value of agricultural production in Tunisian prices	87	100	111
Value of agricultural production in world prices	76	100	99

devaluation of the dinar in September 1964 which raised the world market price of exports and imports by 24 per cent. This rate is roughly consistent with the 22 per cent rate of increase in the world market prices of industrial goods which we calculate from our sample. Between 1966 and 1969, the average world market price of these commodities remained stable, while the average Tunisian prices rose 11 per cent.

These results are paralleled in the agricultural sector. The average world market price for the agricultural commodities rose 32 per cent between 1962 and 1966. At the same time, however, the average Tunisian price for these commodities rose 15 per cent. The result was that the difference between the average Tunisian and world prices of agricultural goods increased between 1962 and 1966, with the Tunisian prices falling relative to the world market prices. This reduction had the effect of turning the terms of trade even more against the agricultural sector (see table 10).

Between 1966 and 1969 the average Tunisian price for agricultural products rose relative to the average world market prices as is shown in table 10. This rise is attributable to two factors. The first of these was the reduction in the difference between the Tunisian and the world market price for olive oil. This reduction was due to new marketing arrangements instituted by the government.[23] The second factor was an increase in the government purchase prices for cereals, an increase which was motivated by a desire to increase their production.

These policies had the effect of altering the terms of trade in agriculture's favor as is demonstrated in table 10. The reason for this is evident in table 11: the average Tunisian price of agricultural products increased 11 per cent while the average world market price fell

slightly. As a result, the Tunisian terms of trade appear to have improved somewhat for the agricultural sector between 1966 and 1969.

Our calculations indicate that the import controls shifted the Tunisian terms of trade between agriculture and industry in favor of industry. The extent of this shift was increased between 1962 and 1966, apparently because of the devaluation in 1964. The shift decreased, however, between 1966 and 1969 in favor of the agricultural sector, this shift being owed to new pricing policies in the agricultural sector.

The terms of trade provide us with the exchange rate between agricultural and industrial output. We have argued that the import controls have shifted the Tunisian market terms of trade in favor of industry. To determine the actual degree of favor afforded industry we need also to examine the prices of inputs into each sector. The unfavorable terms of trade for agriculture can be mitigated if agricultural inputs are available at subsidized prices. This point is developed more explicitly in the following section.

V. The Theory of Effective Protection[24]

A. A Brief Resumé

Classical trade theory tells us that domestic production of a good will be encouraged if a tariff is placed on competitive imports, ceteris paribus. Classical theory also tells us that a tariff on an input into the production of a good will discourage domestic production of that good by raising its costs, ceteris paribus. In most cases, however, a particular production process will be provided with a measure of positive protection through tariffs or quantitative restrictions on competitive imports, as well as a measure of negative protection through tariffs on its inputs. The theory of effective protection was developed to determine the net encouragement offered domestic production in such cases.

In the previous part of this paper, where we discussed the terms of trade on agriculture and industry, our calculations compared actual and revalued production. Here we make a comparison between actual and revalued value added, that is, output minus inputs.[25]

In making these calculations we can consider that Tunisian outputs and inputs are divided into two groups: goods which are internationally traded and those which are not, like electricity or transportation. The first category consists of three types of goods: goods which

are currently exported by Tunisia, goods that are currently imported, and goods which would be imported under free trade. In the case of outputs and inputs of the first type, we used the export price (f.o.b.) to revalue outputs and inputs in world market prices. For outputs and inputs of the second type, we used the import price (c.i.f.) as the world market price in our revaluations. With outputs and inputs of the third type, we used the price of similar goods in a nearby market and then added to this price the transportation costs to Tunisia in order to arrive at the world market price.

As for non-traded inputs, such as water and commercial services, we did not evaluate them at their nominal value in our calculations. The actual Tunisian prices of these goods are too high because non-traded goods are produced using inputs which are themselves priced too high due to tariffs and other restrictive measures. We therefore calculated the increase in the price of non-traded inputs caused by the higher prices of their inputs and used this calculated increase to revalue the prices of non-traded inputs.[26]

The sum of the revalued inputs in a production process was subtracted from the revalued output in order to arrive at value added at world market prices. When output at world market prices is lower than at Tunisian prices, value added in world market prices will become lower than actual value added, everything else being held constant. On the other hand, when the value of inputs in world market prices is higher than in actual Tunisian prices, value added in world market prices will be higher than actual value added, everything else being held constant.

Having calculated value added in world market prices, we can compare the value added so calculated with the actual value added which exists in each production process. An industry will be favored insofar as its actual value added is greater than its value added in world market prices.[27] To better compare the degree of favor accorded different industries, we can express the difference between actual value added and value added in world market prices as a percentage of value added in world market prices. These percentages are called rates of effective protection, to distinguish them from nominal protection which measures the price differential on output alone. The difference between the two rates of protection, nominal and effective, is described further below.

Suppose a price distortion exists only on output and not on inputs. The difference between production in Tunisian prices and world market prices will be the same in absolute terms (i.e., in value) as between value added in Tunisian and world market prices. However, value added will only be a fraction of the value of output. Therefore when we take this difference and divide it by value added in world market prices we get much higher values than dividing this difference by value of production.

Having calculated effective rates of protection on a sector-by-sector basis, we can then compare the rates for each sector. The argument made here initially is that sectors with high rates will be favored relative to those with low rates.[28] Thus if we rank industries A, B, and C by their effective rates of protection, g_a, g_b, g_c, primary factors will flow from industry C to industries B and A and from industry B to industry A. Such an import control system will then favor industry A at the expense of industry C, the net effect on industry B being unclear a priori. More recent theoretical work, however, has cast doubt on this procedure.[29] This work suggests that the direction of resource flows can only be determined in the context of a general equilibrium model. Nonetheless, it seems likely that the ranking technique does provide some preliminary indication of the degree of favor.

So far we have assumed that resources are sufficiently mobile and prices sufficiently flexible so that an elimination of trade restrictions will not require any exchange rate adjustment. More typically, however, such an elimination would require a devaluation so as to maintain the original balance of payments position. Such exchange rate adjustments will generally alter the magnitude of the effective protection rates, but not change their rankings.

B. Some Problems of Interpretation in Tunisia

There are two points which need to be raised here as regards the interpretation of our results. The first has to do with the existence of imperfect competition. In a competitive economy resource flows are motivated by the relative return to factors in different industries. In such an economy, ignoring general equilibrium considerations, the rates of effective protection provide some indication as to resource

flows. This follows from the fact that the returns to primary factors are highest in those industries with the highest rates of effective protection.

In an economy characterized by administrative controls on resource mobility, such resource flows might not occur. In Tunisia, for example, all new investments require prior government approval. It is possible then for high rates of effective protection in certain industries to lead to little or no investment in these sectors. Sectors so affected will still be relatively favored by the import controls, but their high effective protection will be "consumed" by higher than normal wage payments or profits. As a corollary of this, the removal of import controls might not necessarily lead to a reduction in production in these industries, but, rather, to a reduction in profits or wage payments.

An example of such an industry in Tunisia is tobacco. The production of cigarettes and other tobacco products is a government monopoly, and virtually all the monopoly's profits are transferred to the government. Competitive imports are restricted and, as a result, the domestic price exceeded the import price by 37 per cent in 1969. But all of this difference is accounted for by profits, 82 per cent of the total value of sales being government receipts.[30]

A second point which needs to be made is that we have assumed that producers seek to minimize their costs no matter what their competitive situation. In a competitive economy such an assumption is probably valid. In an economy where competitive forces are relatively weak such behavior is less likely. Producers will consume a portion of their potential profits in "x-inefficiency," having less incentive to combine factors appropriately, expending less effort on quality control, etc.[31]

Such situations are all the more likely to occur when prices are administered, as they were in Tunisia. The determination of producers' prices on a cost plus basis throughout most of the 1960's gave the producers little incentive to reduce costs. Similarly, there was little domestic competition to compel cost minimization, as the size of the economy dictated that potential competition could only come from abroad.

This point is important to bear in mind when examining our results. A high rate of effective protection which is owed primarily to "x-inefficiency" need not imply that domestic producers are unable to

compete with imports. The industry might well be viable under conditions of free trade. Such appears to be the case for the clothing industry in Tunisia, its positive rate of effective protection rate notwithstanding. The success of some textile firms in exporting is evidence of this. Unfortunately, total production is oriented toward the domestic market where the limited domestic competition and imports provide little reason to be efficient.

VI. Rates of Effective Protection

Using input-output tables for 1957 and 1968 we have calculated rates of effective protection by sector for 1962, 1966, and 1969. These results are presented in table 12. We should note that the results in table 12 are not strictly comparable to the terms of trade calculations as the input-output tables include olive oil in the food products sector. This explains in part the negative rates of effective protection calculated for the food products sector in 1962 and 1969.

Table 12

Rates of Effective Protection by Sector
1962, 1966, 1969

Sector	1962	1966	1969
Agriculture	10.09	0.09	6.43
Extractive industries	0.36	-12.80	5.71
Petroleum products	n.a.	12.20	3.54
Food products	- 9.92		
Beverages	59.19	12.05	-4.73
Tobacco	0.0		
Textiles	19.74		
Clothing	39.95	12.71	37.83
Leather products	182.76		
Paper	0.12		
Printing	0.0	0.54	-2.06
Wood products	0.0	0.0	5.33
Chemical products	72.71	-2.61	26.55
Mechanical and electrical industries	23.18	28.70	57.44
Primary industries	9.08	-1.41	6.37
Manufacturing industries	6.21	9.88	11.85

We have grouped all the sectors, with the exception of petroleum

products, into either primary industries or manufacturing industries. Petroleum products were excluded from these two groups as this sector contains both crude oil and refined products. The primary group therefore contains agriculture and mining, while the manufacturing group contains all the rest. The average effective protection rates calculated for the two groups are weighted averages of the individual sector's rates, where the weights are value added in world market prices.

These groupings indicate that for 1966 and 1969 the import controls favored manufacturing production over primary production. In 1962 the heavy weight of the food products sector combined with its negative rate of effective protection led to a lower rate of effective protection for the manufacturing group.

The difference between the rates of effective protection for primary sectors as a group and manufacturing industries as a group is particularly striking in 1966. This result is explained in part by the export tax placed on phosphates in 1964 when the dinar was devalued.

The rise in the rate of effective protection from 1966 to 1969 for both primary and manufacturing production is consistent with our terms of trade calculations. These latter calculations indicated that both Tunisian agricultural and industrial prices tended to rise relative to world market prices during this period. A similar phenomenon also occurred in the extractive industries during this period. The increasing difficulties which the Tunisian phosphates experienced on the world market led to successive reductions in the export tax, causing the divergence between producer prices and world market prices to become smaller and smaller.

Looking at the rates by industry, we see that within the manufacturing group the most favored sectors have been the textile and the mechanical and electrical industries. These two industries contained many of the largest investments of the 1960's. While these two industries accounted for only 15 per cent of total manufacturing value added in 1961 in constant prices, they received 47 per cent of all manufacturing investment between 1960-1970. The relatively high rates of effective protection observed for these industries leads one to question the real return to these investments [see also Stolper (1973, par. 74), sec. IV, C.3].

Using industrial census data, we have calculated rates of effective protection on a product basis. Some of these results are presented in table 13. The calculations are for 1969 unless otherwise noted.

Table 13 illustrates the wide variation in rates of effective protection even within sectors. This variation is most strikingly evident in the mechanical and electrical industries, where steel bars were effectively protected at 424.87 per cent while lead smelting received a negative effective protection rate of 20.5 per cent. These two widely divergent rates of effective protection can be partly explained by divergent pricing policies followed on their inputs. One of the two chief inputs in the production of steel bars, iron ore, was priced below its export price to the firm. In contrast, the lead smelter was forced to purchase its main input, iron ore, at a price 51 per cent above the export price in 1968.

Differences between domestic and world market prices on inputs also played a significant role in subsidizing the production of leather and paper pulp. In both these cases, the primary input, hides for leather, and esparto grass for paper pulp, was also exported. Export controls created a divergence between the domestic price and the export price (f.o.b.), thereby favoring domestic processing of the product. These controls consisted of quantitative restrictions on the exports of hides and an export duty on esparto grass.

These wide variations in rates of effective protection imply that certain production processes were favored relative to others and it is constructive to categorize those goods so favored or disfavored. As a general rule, the products destined primarily for export were penalized relative to those outputs oriented towards the Tunisian market.

This penalization resulted from the lack of any systematic policy of export subsidization. Although there were some ad hoc attempts to favor exports, such as the export subsidy provided to steel bars and the pricing policy favoring paper pulp, most exports received little or no subsidization and sold their output at world market prices. For some products, notably phosphate ore and olive oil, export production was discouraged by the existence of export taxes. As a result, the effective protection rates were generally quite low for those industries oriented toward foreign markets.

Table 13

Rates of Effective Protection for Selected Products, 1969

Product	Percent	
Extractive industries		
Phosphates	-19.47	
Iron ore	- 8.44	
Other minerals	11.63	
Salt	39.71	
Petroleum products		
Crude oil	- 0.89	(1968)
Petroleum refining	33.57	(1968)
Food products		
Sugar	471.43	
Olive oil	-14.79	(1968)
Canned fish, fruits and vegetables	37.19	
Tobacco	194.43	
Construction materials		
Cement	- 6.15	
Glass	17.42	
Asbestos cement	29.27	
Bricks	- 3.31	
Chemical products		
Superphosphates	- 5.39	
Tires	137.91	
Soaps	24.49	(1968)
Detergents	76.15	
Explosives	43.71	
Glue	21.90	
Mechanical and electrical industries		
Batteries and electrodes	354.53	
Assembly of radios and televisions	81.44	
Automobile assembly	43.62	
Steel bars	424.87	(1968)
Lead smelting	-20.50	(1968)
Foundry products	33.09	
Steel structures	35.19	
Hardware	212.82	
Cans	124.99	
Textiles		
Cloth	35.65	(1970)
Clothing	58.69	(1970)
Leather	-252.84*	
Shoes	84.80	
Paper and printing		
Paper pulp	38.10	

Note: *Negative value added in world market prices.

We can consider the eight products which were primarily exported, phosphate and iron ores, other minerals, salt, crude oil, olive oil, superphosphates and paper pulp. For these eight products, the highest rate of effective protection was 39.71 per cent for salt and this high rate was owed to the large divergence between Tunisian and world market prices on the proportion of total output which was marketed locally. While these products were exported at world market prices, their production required the purchases of some domestic inputs. As the domestic prices of these inputs were often above their world market prices, these industries were thereby penalized.[32] Such penalization accounted for the negative rate of effective protection accorded crude oil production.

In contrast, the import control system favored those industries substituting for imports by providing them with a protected market for their output. It is noteworthy that some of the highest rates of effective protection were provided to those industries which processed or assembled imported inputs. Examples of such cases are sugar, tires, batteries and electrodes, and cans. The tariff structure explains this in large part as it taxes imported intermediate inputs at low rates. These industries were therefore relatively little penalized by large price divergences on their inputs. This is in contrast to such goods as foundry products and steel structures which were penalized through their purchases of high-priced domestic pig iron and steel.

The bias toward import substitution as opposed to export production existed even when export subsidies were provided. Following Balassa, et al., we calculated the percentage difference between the value added obtainable as a result of domestic sales and the value added obtainable from exports for the production of steel bars which received an export subsidy of 20 dinars per ton.[33] The value added per unit of domestic sales was 156 per cent of the value added obtainable from exports. This result reflects the fact that the export subsidy was not designed to encourage exports, but rather to permit the marketing abroad of production in excess of domestic consumption.

As noted in the previous section, the inflation of value added brought about by import controls can be the consequence of several different circumstances. One possibility is that the import control system permitted the local production of a good that could not be produced

efficiently, in the sense that the social costs of production exceeded the real returns. This possibility implies a loss in welfare for the society as a whole. A second possibility is that market imperfections cause domestic prices to differ from their social opportunity costs so that value added measured in domestic prices exceeds its real cost to society.

We have attempted to take account of this latter possibility by reestimating value added in domestic prices to account for social opportunity costs for those products which had the highest rates of effective protection. Our production data permitted us to break down value added into returns to labor and returns to "other" factors. We arbitrarily assumed that the real costs of labor were 50 per cent of actual labor costs and that the real cost of "other" factors was 75 per cent of actual costs.

These percentages, while arbitrary, have some basis in fact. There is widespread unemployment/underemployment in Tunisia, a situation which leads some economists to conclude that the market price of labor exceeds its real costs.[34] A second consideration is that capital, the costs of which figure prominently in the returns to "other" factors, was relatively abundant during the period 1960-70.[35] We have also assumed an overvaluation of the dinar of 50 per cent on the basis of a rough comparison of the cost of living. These assumptions provide a plausible lower bound to our reestimated Tunisian value added. We present the results in table 14 in the form of "real" rates of effective protection.

Table 14

"Real" Rates of Effective Protection, 1969

Product	Percentage
Sugar	166.84
Tires	16.82
Batteries and electrodes	98.30
Steel bars	28.76
Shoes	-24.29

The results displayed in table 14 indicate that the high rates of effective protection can not be entirely explained by an overvaluation of labor and other inputs, in conjunction with a disequilibrium exchange

rate. There remains for four of these products a substantial amount of "real" effective protection.

The products contained in table 14 all benefitted from investments during the period 1960-70. Of these products, only batteries and electrodes and shoes were produced at all in 1960, and they were produced in very limited amounts. We can therefore interpret the numbers in table 14 in the following manner. If our assumptions as to shadow prices are correct and if the production parameters and world market prices have been correctly estimated, the real rate of effective protection can be interpreted as an investment criterion.[36] Following such a criterion, projects would be selected if the real rate of effective protection was less than or equal to zero, for it is only when this is the case that the real value of the production is equal to the real cost of producing the good. Using this criterion, and presuming that the necessary assumptions hold, investments in the production of at least four of these five goods appear to have been misdirected from the point of view of maximizing real income.

VIII. Conclusions

Import controls have been justified on many different theoretical grounds. Among the arguments advanced to justify them have been the existence of factor and commodity market distortions, externalities, and the infant industry argument.[37] We made a crude attempt to take account of factor market distortions in our calculation of real rates of effective protection. We made no attempt to deal with either commodity market distortions or externalities, as this would have required much more detailed knowledge than we possessed.

The infant industry argument revolves around the accuracy of our estimates of the parameters of production. This argument takes into account that a new industry is likely to experience certain "breaking-in" difficulties and in the absence of protection even a potentially viable industry would have difficulty surviving this initial period. If we had taken our production parameters from this initial period, we would be misled as to the industries' real efficiency in world market terms.

This argument is valid as far as it goes but it is predicated on the existence of sufficiently vigorous domestic competition to drive domestic prices down in the absence of imports after the initial learning

period is over. This domestic competition was notably lacking in Tunisia, as it is imports which provide the chief and, in some cases, the only competition for domestic producers. By eliminating imports, one is eliminating effective competition for most domestic producers. Furthermore, as most of the production processes for which we have calculated rates of effective protection have had at least five years to "mature," one can question the continued necessity of import controls to protect them.

There is also a variety of non-economic arguments for import controls and domestic industrialization, one example of such arguments being the national defense justification for protection. Such arguments are based on political and social considerations which, it is argued, make such controls necessary. In response to these arguments economists can only point out the costs in terms of real income losses resulting from the adoption of these policies.

While these arguments provide non-economic rationales for a policy of protection, they also make all the more necessary calculations of the effect of such policies. These non-economic arguments imply that one is willing to pay a price in terms of lower real income to satisfy other, non-economic objectives. It then becomes all the more necessary to know how high a price is implied by such policies.

Our results indicate that the import control system favored those production processes oriented toward the Tunisian market relative to those oriented toward foreign markets. This resulted from the implicit subsidy provided to sales on the domestic market by the import controls, while producers sold output at world market prices in foreign markets. Similarly, our results indicate that the import controls favored the manufacturing industries over primary production.

These results would suggest that the least-favored production processes would be those involving primary products which were largely exported. There is some evidence to support this hypothesis. Such primary products as phosphate and iron ore, esparto grass, and animal hides had world market prices above their domestic prices in at least one of the three years for which we made calculations.

Our more detailed calculations indicated wide divergences among rates of effective protection at the product level. These calculations

indicated that even within a given sector there were production processes which were favored along with processes which were penalized by the import controls.

We made a crude attempt to determine to what extent some of the high rates of effective protection might be explained by distortions in factor prices and an overvalued exchange rate. Our calculations indicate that even if we assume large distortions in these prices there still remains a significant subsidization of value added in some production processes. We concluded then that a substantial amount of investment appeared to be misallocated on strictly economic criteria. The total investment in the steel mill alone during the 1960's amounted to 30.3 million dinars, a not inconsiderable sum.

Given the import substitution strategy, this misallocation was perhaps inevitable. The Tunisian market was so small that enterprises were established which seem not to have taken full advantage of economies of scale. The optimal size for a given production unit is notoriously difficult to determine, and we have no such detailed information.[38] We do, however, have comparisons which were made by Mme. Brugnes-Romieu of the capacity of some Tunisian investments with similar plants in Europe. She reports, for example, that the projected laminated capacity of the Tunisian steel mill represented only 3.5 per cent of the capacity of the newer steel mills in Europe.[39]

Similarly, the conjunction of an import substitution strategy with a small market size led to a single firm producing a wide variety of products. The production of the hardware firm, for example, consists of approximately 50 different sizes and varieties of metal products. Another example is the production of glue where a single firm produced 56 different varieties of glue.[40]

It seems reasonable to assume that some of the difference between Tunisian prices and world market prices was attributable to higher costs of production attendant upon less than optimally sized plants or production runs. The subsidization of value added brought about by the import control system represented in part a payment for these higher costs of production.

In addition to permitting the establishment of less than optimally scaled plants, the import control system also permitted the firms

to organize their production uneconomically. With the import controls eliminating the chief source of competitive pressures, Tunisian firms had relatively little incentive to choose minimum cost combinations of inputs, implement strict quality controls, supervise workers' productivity, or perform all those other tasks which economists include under x-efficiency.[41] Some of the subsidization of value added probably represented payment for these costs.

The subsidization of value added might also have accrued as monopoly rents. Lewis observed this to be true for some of the industries in Pakistan.[42] This appears, however, not to have been the case in Tunisia.[43] With the exception of a few products, notably sugar and tires, profits do not appear to have been very high in many of the import substituting industries. Indeed, one of the basic problems with the public enterprises, which include most of the import substituting investments during this period, has been their failure to generate <u>any</u> profits.

It appears likely then that at least some of the high rates of effective protection represented subsidization of inefficient producers. These producers were inefficient either in terms of their basic production parameters or in their failure to apply proper management techniques. In either case, this inefficiency represented a wasting of resources and a loss of real income.

Footnotes

[1]The period 1956-60 was largely spent in instituting reforms which were primarily political in nature. It was at this time that laws were passed guaranteeing individual freedoms, abolishing polygamy, eliminating the Moslem courts of law, and redistributing tribal lands. As a result, relatively little time was spent on economic planning proper. See Meyer (1966), p. 246.

[2]See Industry and Trade in Some Developing Countries, ed. Little, Scitovsky and Scott, for further examples.

[3]The process whereby balance of payments difficulties led to import controls and their subsequent effects on the economy is well described by Kindleberger (1968) as the "disequilibrium system."

[4]This aggravation resulted primarily from the speed of industrialization, as well as from the fact that many investments did not lead to commensurate output. The heavy investments of the first planning years were financed primarily by foreign exchange reserves and short-term supplier credits. This process led to a severe foreign exchange shortage, resulting in the devaluation of 1964. Our effective protection calculations also indicate that several of these early investments provided relatively little in the way of net foreign exchange earnings.

[5]As a result of this action by the French government, virtually all of the 1965 Tunisian wine production was put into stock. Tunisia attempted with limited success after 1965 to find other markets for her wine exports.

[6]According to the 1956 census, Tunisia had a population of 3,943,265. The gross domestic product in 1957 was estimated at 238,500,000 dinars in 1957 prices.

[7]These data are from the Comptes Economiques where the Tunisian production is measured ex factory and the imports c.i.f.

[8]Secretariat d'Etat au Plan et à l'Economie Nationale, Perspectives Décennales de Développement, p. 37. Translation supplied.

[9]This view appears never to have been challenged. Yet when account is taken of Tunisia's size, Tunisia had a relatively large industrial sector. The Chenery and Taylor (1968) results show that for the small, resource poor group, Tunisia was quite highly developed industrially for its size.

[10]Perspectives, p. 32.

[11]The following breakdown of farm holdings is given for 1960-61:

	Number	Size
Foreign-owned farms	4700	6 000 000 hectares
Modern Tunisian farms	5000	400 000 hectares
Small holdings	450000	3 500 000 hectares

where 1 hectare = 2.47 acres.

[12]This difference is recognized in the most recent Tunisian plan, where a strategy of industrialization through exports is proposed.

[13]The role of the government in the allocation of investment is discussed in a paper by Kleve (1973, rev. 1974). Stolper (1973, rev. 1974) has a detailed discussion of the consequences of public ownership on operating efficiency.

It should be noted that when shadow prices differ from market prices, and/or there exist externalities, a case can be made that the government should not be motivated by profits as conventionally measured. This said, however, there is no necessary presumption that the government's calculation of shadow prices and the effects of externalities give results which are better than the market's.

[14]Average tariff figures are notoriously suspect. To begin with, there is an index number problem resulting from the interrelations of price and quantity demanded. This interrelation implies that any average tariff is necessarily misrepresentative. This theoretical problem is compounded in Tunisia by the existence of a comprehensive import licensing system. This system permitted relatively liberal imports of those goods which were lightly tariffed, chiefly capital equipment and raw materials, while restricting severely imports of highly tariffed consumer goods.

[15]Little, Scitovsky and Scott (1970) give the following tariff rates on manufacturing productions:

Argentina	141 (1958)
Brazil	99 (1966)
Mexico	22 (1960)
Pakistan	93 (1963/64)
Philippines	46 (1961)
Taiwan	30 (1966)

These tariff rates and the ones we present in table 6 are not strictly comparable given the differences in weighting schemes and coverages. The rates we have calculated in table 6 are for all imports whereas the rates given by Little, et al., are for manufactured goods only. But as we have noted, in Tunisia the rates on many manufactured goods are fairly low.

[16]The December 6, 1969 issue of Les Marchés Tropicaux et Mediterranéen reported that the paint industry had been forced in 1967 to abandon certain paint manufactures due to an inability to import the necessary raw materials.

[17]Secretariat d'Etat au Plan et à l'Economic Nationale, Budget Devises, 1969, p. 10.

[18]See Little, Scitvosky and Scott (1970) for examples.

[19]We defined Tunisian consumption as the difference between Tunisian production of the good and Tunisian exports. This definition assumes either that changes in stocks of the good are zero, or that these changes are valued at domestic prices.

[20]However, the limited coverage is itself at least in part due to the fact that the industrial structure in 1962 was much less sophisticated than in 1969. See Stolper (1973, rev. 1974).

[21]See Dahl (1971).

[22]See Al-Zand (1970).

[23]Ibid., pp. 9-10.

[24]The reader familiar with the theoretical literature on effective protection is invited to skip section V(A).

[25]Corden (1966), p. 222.

[26]This is the treatment followed by Balassa and associates (1971).

[27]Corden (1966), p. 224.

[28]Ibid., p. 224.

[29]See Jones (1971) and Tan (1970) for examples.

[30]For the effects of this fact on the flow of funds, see Kleve (1973, rev. 1974).

[31]See Stolper (1973, rev. 1974) on the substantial degree of "x-inefficiency" in many industrial branches.

[32]In some countries import duties paid on imports are rebated where the final product is exported . This does not seem to have been the case in Tunisia.

[33]Balassa, et al. (1971) measure the import bias (z_j) using the following expression:

$$z_j = \frac{w_j - y_j}{y_j} \qquad \text{(I)}$$

where y_j = value-added obtainable from exporting, per unit
w_j = value added obtainable from producing for domestic markets.

z_j measures therefore the difference between the value added obtainable from domestic production and the value added obtainable from exports as a percentage of value added obtainable from exports.

Under certain conditions, we can rewrite expression (I) as follows:

$$z_j = \frac{((1 + t_j) - \sum_i A_{ij}(1 + t_i)) - ((1 + s_j) - \sum_i A_{ij}(1 + t_i))}{(1 + s_j) - \sum_i A_{ij}(1 + t_i)}$$

where s_j = subsidy on export of good j
t_i = tariff on input i
t_j = tariff on output j
A_{ij} = proportion of input i in the total cost of j.

[34]It is possible that labor's shadow price is above the market price. In many less developed countries, highly skilled people are paid less than their real worth, causing them to seek employment abroad. We have not taken account of the difference between skilled and unskilled labor in our calculations.

[35]This is discussed in the paper by Kleve (1973).

[36]See Hutchison (1973), pp. 47-55, for a demonstration of this.

[37]Attempts to deal with such distortions through trade policies represent second-best solutions. The first-best solution is to deal with such distortions directly. See Johnson (1965) for a discussion of this point.

[38]See Scherer (1970), pp. 72-103, for a discussion of some of these problems.

[39]Brugnes-Romieu (1966), p. 26.

[40]Les Marchés Tropicaux et Méditerranéen, "Le Marché Tunisien," December 6, 1969, p. 3236.

[41]A study of the Centre National d'Etudes Industrielles (1970) of the foundry products' sector reported that the quality and timeliness of domestic production were serious problems. Quality is also cited as a problem in a study of the textile sector (Etude Sectorielle de l'Industrie Textile Tunisienne, 1972).

[42]Lewis (1971), p. 83.

[43]See the paper by Stolper (1973, rev. 1974) on this point.

Appendix

Data:

Our calculations of Tunisian and world market prices relied heavily on data obtained from two sources: the statistical annex to Les Rétrospectives de Développement and Les Statistiques du Commerce Extérieur. The first source contains Tunisian production data in quantity and value terms on a commodity basis. The values are given ex-factory, and correspond to the producers' output valued at producers' prices. A division of the value by the quantity figures provides us then with price figures. These were the figures used for Tunisian prices.

The Statistiques du Commerce Extérieur provide quantity and value data on Tunisian exports and imports with exports valued f.o.b. and imports c.i.f. A division of the value by the quantity figures gives us unit-price figures. These prices served as the basis for our calculations of world market prices.

This somewhat roundabout way to arrive at domestic and international prices was made necessary by the lack of any comprehensive data on prices in Tunisia. The consumer price index contains price data for only a limited range of commodities, and was thus inadequate for many of our calculations. We did, however, make use of this source for Tunisian prices when possible. Another source which we also employed on occasion was the Recensement des Activités Industrielles. This survey provides sales data on a commodity basis. By netting out sales taxes from the domestic sales we were able to arrive at a rough approximation of Tunisian prices, ex-factory. An additional source of price data for some commodities was provided by the industrial studies of the Centre National d'Etudes Industrielles. In some cases, these studies even made explicit comparisons of Tunisian and international prices.

The procedure used to calculate Tunisian prices raises certain questions as to the comparability of the two sets of calculations. There is no guarantee of course that the import categories correspond to the commodity breakdown of Tunisian production. In fact, it is clear in some

cases that they do not. Use of the Tunisian export figures as the basis for our world market price calculations alleviates this problem to some extent. There is presumably a greater correspondence between the goods exported by Tunisia in a certain trade category and the domestic production of these goods. Even here, however, problems can arise. For example, in the clothing sector, Tunisian exports tend to be of higher average quality than the clothing sold on the domestic market.

In practice the problem of comparability is not as difficult as it might at first appear. Tunisian trade categories are generally defined along the same lines as Tunisian production. In some cases, Tunisian trade statistics are considerably more detailed than Tunisian production data. For the years after 1967, a Tunisian export unit-price can also be calculated from the export sales data contained in the industrial census.

A slightly different problem of comparability arises as a result of the different locations where the goods are valued. The imports and exports are valued at their point of entry or exit. The Tunisian production, however, is valued at the factory. Ideally we would wish to value both at the same place. In point of fact, however, such differences are likely to be trivial, as most Tunisian production occurs in close proximity to the main ports, which are the chief entry and exit points for internationally traded goods.

A question of interpretation arises with respect to goods which are currently non-traded but which would be traded under free trade. The system of import controls eliminates some potentially competitive imports, thereby making non-traded, goods which are potentially tradeable. For example, the tire company enjoyed a monopoly on the sizes it produced, even though its prices were above those of potentially competitive imports.

This problem was of particular relevance in our calculations of effective protection rates. In such cases we used trade data for neighboring countries such as Libya and Morocco to calculate import unit-prices which we took as equal to Tunisian import prices. In addition, we used French export unit-prices for some of the 1966 estimates. To the French export prices we added estimates of the per unit transportation costs to Tunisia in order to arrive at estimates of the Tunisian

import unit-price of these goods. This procedure was admittedly rather crude, but, given the data limitations, was the only feasible way of dealing with such cases.

A somewhat similar problem arose for a small group of Tunisian exports such as steel bars and cement. These products were exported at prices below their domestic prices. In an economic sense, however, such goods were really import-competing, the exports arising from excess capacity. The exhaustion of this excess capacity would reduce exports to zero. This is in fact what occurred with cement in the early 1970's. During this period Tunisia shifted from exporting cement to importing it.

In these cases, for the calculations of the effective rates of protection, we measured the world market price as the Tunisian import price. This price was estimated by using the Tunisian export price for these products and adding to it twice the transportation cost to their main markets. Such a procedure implies that Tunisian exports are just competitive in these foreign markets. In the case of cement, this led to a calculated import price higher than the domestic price. We assumed then that cement was in effect a non-traded good, in spite of the existence of cement exports. In this particular instance, we took the Tunisian price as equal to the world market price.

Bibliography

Al-Zand, Osama. Olive Oil Price Policy in Tunisia. Staff Paper Series, Department of Agricultural and Applied Economics, University of Minnesota, P70-11. St. Paul: June, 1970.

Balassa and Associates. The Structure of Protection in Developing Countries. Baltimore: Johns Hopkins University Press, 1971.

Balassa, Bola and Schydlowski, Daniel M. "Effective Tariffs, Domestic Cost of Foreign Exchange, and the Equilibrium Exchange Rate." Journal of Political Economy, LXXVI (May/June, 1968), 348-60.

Brugnes-Romieu, M. P. Investissements Industriels et Développement en Tunisie. Cahiers du C.E.R.E.S., Serie Economique, no. 1. Tunis: Décembre, 1966.

Bruno, Michael. "The Optimal Selection of Export-Promoting and Import-Substituting Projects." Planning the External Sector: Techniques, Problems, and Policies. New York: United Nations, 1967.

Chenery, Hollis B. and Taylor, Lance. "Development Patterns Among Countries Over Time." Quarterly Journal of Economics, L (November, 1968), 391-416.

Corden, W. M. "The Structure of a Tariff System and the Effective Protective Rate." Journal of Political Economy, LLXIV (June, 1966), 222-3.

Dahl, Reynold P. International Trade and Price Prospects for Cereals and Their Implications to Tunisia. Staff Paper Series, Department of Agricultural and Applied Economixs, University of Minnesota, PL71-24. St. Paul: November, 1971.

Hutcheson, Thomas L. "Incentives for Industrialization in Colombia." Unpublished doctoral dissertation, The University of Michigan, 1973.

Johnson, Harry G. "Optimal Trade Intervention in the Presence of Domestic Distortions." International Trade. Edited by Jagdish Bhagwati. Great Britain: Penguin Books, 1969.

Jones, Ronald W. "Effective Protection and Substitution." Journal of International Economics, I (February, 1971), 58-87.

Kindleberger, C. P. "Disequilibrium System of Foreign Trade and the Developing Countries." Economics of Trade and Development. Edited by James D. Theberge. New York: John Wiley and Sons, 1968.

Kleve, J. G. "The Financing of Investments in Tunisia, 1961-1971." Unpublished paper, Ann Arbor, Michigan, September, 1973, rev. 1975.

Krueger, Anne O. "Some Economic Costs of Exchange Control: the Turkish Case." Journal of Political Economy, LXXIV (October, 1966), 466-80.

Lewis, Jr., Stephen R. Pakistan, Industrialization and Trade Policies. London: Oxford University Press, 1970.

Little, Ian; Scitovsky, Tibor; and Scott, Maurice. Industry and Trade in Some Developing Countries. London: Oxford University Press, 1970.

Marchés Tropicaux et Méditerranéens. Le Marché Tunisien, December 6, 1969.

Meyer, A. J. "Economic Planning in North Africa." State and Society in Independent North Africa. Edited by Leon Carl Brown. Washington, D.C.: Middle East Institute, 1966.

Scherer, Frederic M. Industrial Market Structure and Economic Performance. Chicago: Rand-McNally, 1970.

Stolper, Wolfgang F. "Investments, Employment and Output Per Man in the Tunisian Economy, 1961-1971." Unpublished paper, Ann Arbor, Michigan, September, 1973, rev. September, 1974.

Tan, Augustin H. H. "Differential Tariffs, Negative Value Added and the Theory of Effective Protection." American Economic Review, LX (March, 1970), 107-16.

Tunisia. Centre National d'Etudes Industrielles. Développement des Industries Mécaniques et les Problèmes des Fonderies en Tunisie. Tunis: July, 1970.

_____. Centre National d'Etudes Industrielles. Etude Sectorielle de l'Industrie Textile Tunisienne. Tunis: 1972.

_____. Institut National de la Statistique. Recensement des Activités Industrielles, 1968-70. Tunis.

_____. Institut National de la Statistique. Statistiques du Commerce Extérieur de la Tunisie, 1969-70. Tunis.

_____. Ministère du Plan. Rétrospectives Décennales, 1962-71. Tunis: January, 1972.

_____. Présidence du Conseil. Annuaire Statistique de la Tunisie, 1954. Tunis: Imprimerie SEFAN, 1955.

_____. Secretariat d'Etat au Plan et à l'Economie Nationale. Annuaire Statistique de la Tunisie, 1957-67, Vol. VI-XVII. Tunis: Imprimerie Officielle.

_____. Secretariat d'Etat au Plan et à l'Economie Nationale. Budget Devises, 1968-69. Tunis.

_____. Secretariat d'Etat au Plan et à l'Economie Nationale. Les Comptes de la Nation, Vol. I-III. Tunis: Imprimerie STAG.

_____. Secretariat d'Etat au Plan et à l'Economie Nationale. Rapport sur le Budget Economique, 1966-70. Tunis.

_____. Secretariat d'Etat au Plan et à l'Economie Nationale. Recensement des Activités Industrielles, 1966-67. Tunis.

_____. Secretariat d'Etat au Plan et à l'Economie Nationale. Statistiques du Commerce Extérieur de la Tunisie, 1960-68. Tunis.

_____. Secretariat d'Etat au Plan et aux Finances. Perspectives Décennales de Développement, 1962-71. Tunis: 1962.

_____. Secretariat d'Etat au Plan et aux Finances. Plan Triennal, 1962-64. Tunis: 1962.

_____. Secretariat d'Etat à la Présidence. Annuaire Statistique de la Tunisie, 1957-58. Tunis.

_____. Tarif des Droits de Douane à l'Importation et à l'Exportation. Journal Officielle de la République Tunisienne, 18 and 21 August, 1959.