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6 Trade Strategies and Employment in the Ivory Coast

Terry Monson

6.1 Introduction

The Ivory Coast is a small, prosperous West African coastal nation that shares borders with Ghana, Guinea, Liberia, Mali, and Upper Volta. Its prosperity is due in large part to the trade, development, and employment policies it has followed since it gained independence from France in 1960. These policies can be characterized as "open" or "liberal" in the sense that traditional natural resource based (NRB) exports have been emphasized, markets are relatively free from government intervention, protection is moderate, and foreign capital and labor inflows are encouraged. These policies have resulted in sustained economic growth, a heavy dependence upon international trade, relatively few factor market distortions, production patterns similar to those expected under free trade, and an unusual modern sector labor force in which half of the workers are either European expatriates or migrant Africans from neighboring countries.

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In some respects these policies are similar to those currently practiced by some of the other countries studied in this volume. They differ, however, in having been consistently applied and in their emphasis upon encouraging inflows of both capital and labor. The latter point is especially important. The Ivory Coast is not as labor-abundant as some LDCs. Historically it has been an importer of labor, both skilled expatriates and unskilled African migrants. The reasons for this migration have been a relatively low population density and an inadequate educational structure.[1]

Ivorian policies and their ensuing trade and development patterns are instructive in their own right. More important, the employment implications of these policies have never been fully analyzed. Thus I propose to examine the Ivorian pattern of trade and its effects upon employment. The focal years for the analysis are 1972–73. These years were chosen because of the availability of data and of complementary research on the trade regime.[2]

Fact Sheet: Ivory Coast
Population (1975 Census): 6,670,912
Area: 127,500 square miles
Population density: 52 persons per square mile
Capital: Abidjan
President: Felix Houphouet-Boigny
Date of independence (from France): 7 August 1960
Gross Domestic Product per capita (1976): FCFA 159,980, U.S. $680 (converted at the exchange rate current in early 1978)
Currency: Franc de la communauté financière africaine (FCFA)
Par value: FCFA 50 = French franc 1
Exchange rate on the U.S. dollar, early 1978: FCFA 235 = U.S. $1

Abbreviations Used in This Study
ACP: African, Caribbean, and Pacific (EEC associates signatory to the Lomé Treaty)
BCEAO: Banque Centrale des Etats de l'Afrique de l'Ouest
CEAO: Communauté Economique de l'Afrique de l'Ouest
EEC: European Economic Community
OCAM: Organisation Commune Africaine et Malagache
UDEAO: Union Douanière des Etats de l'Afrique de l'Ouest
UMOA: Union Monétaire Ouest Africaine

6.2 An Overview of the Ivory Coast Economy

6.2.1 Salient Features of Ivorian Growth

When the Ivory Coast became independent from France in 1960, the economy was primarily rural.[3] About 80 percent of the population re-

sided in rural areas; natural resource based (NRB) products accounted for 43 percent of GDP, and the three major NRB exports (coffee, cocoa, and logs) generated 87 percent of export revenue. By contrast, the manufacturing sector was small and accounted for only 8 percent of GDP (see table 6.1).

Since then Ivorian growth has been phenomenal. During 1960 to 1976, real GDP quadrupled and real GDP per capita almost doubled.[4] This represented a 7.5 percent annual growth rate in real GDP and 3.5 percent in GDP per capita.[5]

Ivorian growth has been based largely upon export promotion. There was heavy emphasis upon the expansion of the three traditional NRB exports, coupled with diversification into new NRB activities (e.g.,

Table 6.1 Selected Aggregate Data on the Ivory Coast Economy

	1960	1972	1976
GDP (billion FCFA)			
Current prices	143	473	1,117
1970 prices[a]	203	470	687
GDP per capita (thousand FCFA)			
Current prices	38	79	160
1970 prices[a]	54	78	98
Breakdown of GDP (percentage at producers' prices)			
NRB production	43	32	32
HOS production	8	17	15
Services and others[b]	49	50	53
Exports f.o.b. (billion FCFA)	45	140	393
Percentage of GDP	32	32	35
Percentage of tradable production	70	77	80
Per capita (thousand FCFA)	12	26	56
Manufacturing output per capita (FCFA)			
Current prices	2,950	12,060	19,300
1970 prices[a]	4,195	12,000	11,910
Consumer price index (1970 = 100)			
European families	70	101	163
African families	74	109	175
Exchange rate (FCFA/U.S. $1)[c]	247	252	239
Export prices and terms of trade			
Index of prices of three major exports (1970 = 100)	90	81	215
Index of average export-import price ratio (1970 = 100)[d]	46	96	115

Source: Most data based upon information in BCEAO, "Indicateurs economiques," (various years).

[a]For lack of more appropriate price indexes, the consumer price index for African families was used to deflate GDP and manufacturing output to 1970 prices.

[b]"Others" includes construction, water, energy, mining, and transportation.

[c]The exchange rate is the trade conversion factor given in IMF, *International Financial Statistics* (various years).

[d]Index of the ratio of average export prices f.o.b. to average import prices c.i.f. with no adjustment made for changes in the composition of trade.

cotton, fruit, palm products). From 1960 to 1976, real production of NRB commodities rose by 150 percent, and the export volumes of cocoa, coffee, and logs rose by 120 percent, 110 percent, and 215 percent, respectively. Industrialization came later in the 1960s with an initial emphasis upon transforming NRB products for export (e.g., processed cocoa products, lumber, and instant coffee). Finally, in the late 1960s and early 1970s, new export and import substitution industrial activities were established. Beginning from a small base ($45 million in 1960), the real value of manufacturing output quintupled from 1960 to 1976 while its share of GDP rose from 8 to 15 percent (an average annual real growth rate of manufacturing output of 11 percent). Manufacturing sector employment quadrupled in the same period, implying an employment-output elasticity with respect to labor of 0.8.

As a consequence of these policies, the Ivorian economy has retained its rural character, as well as its dependence upon NRB exports as a basis for growth. Sixty percent of the population still resides in rural areas. Coffee, cocoa, and logs remain the major exports, together generating two-thirds of export revenues, and NRB production accounts for one-third of GDP. However, the manufacturing sector has grown and now generates more than one-fourth of exports.

6.2.2 The Structure of Ivorian Production

Production in the Ivory Coast is concentrated in informal or artisanal activities.[6] In our year of reference (1972), artisanal activity employed 88 percent of the labor force and generated one-third of GDP. It is found in nearly all lines of production but is most predominant in natural-resource-based activities. For example, all coffee and cocoa exports are grown on small peasant farms classed as artisanal activity. Artisanal activity is also found in some HOS and home goods production, although in most cases it is relatively unimportant.

Modern-sector manufacturing is relatively small, despite impressive gains in its relative size in the postindependence period. In 1972 it generated 17 percent of GDP (versus about 8 percent in 1960) and employed about 6 percent of the labor. For reasons to be enumerated later (see section 6.3), it will be the focus of most of the analysis in this study.

6.2.3 International Trade and the Ivorian Economy

Introduction

The Ivory Coast is heavily dependent upon international trade for its well-being. Since independence, exports have accounted for slightly more than one-third of GDP. The geographic pattern of trade has not changed substantially. Approximately 85 percent of its trade is with industrial-

ized nations, the strongest ties being with France and the EEC. However, policies encouraging manufactured exports have had some effect. HOS exports rose from 5 percent of total exports at independence to 28 percent in 1976.

Ivorian trade policy has a two-pronged strategy. To encourage manufactured exports (mainly processed NRB products), there are high exit taxes on NRB exports[7] and lower exit taxes (or none at all) on manufactured exports. To encourage import substitution activities (especially in consumer goods industries), there is tariff cascading and a moderate but growing use of quotas and other nontariff barriers (see discussion in section 6.3).[8] Relative to most LDCs, however, the Ivorian trade strategy is outer-oriented, and the level of protection for import substitution industries has been fairly moderate.

Institutional Characteristics

The Ivory Coast, like most other former members of the French West African colonial federation (*Afrique Occidentale Française*), has maintained close monetary and trade relationships with France and other French West African countries. It is a member of the West African Monetary Union (UMOA).[9] France guarantees the convertibility of the UMOA currency (FCFA or *Franc de la Communauté Financière Africaine*) into French francs at a rate of FCFA 50 to the franc, while the UMOA keeps external reserves in an operations account at the French Treasury. The Ivory Coast belongs to several West African organizations aimed at promoting trade and development[10] and maintains special bilateral agreements with its major Francophone trading partners. However, these agreements have had only a marginal effect upon the direction and content of Ivorian trade.

The Composition of Trade

Table 6.2 breaks down Ivorian foreign trade by major export products and by major categories of imports in 1960, 1972, and 1976 and gives their growth rates (in nominal terms) for the postindependence period. Since the exchange rate hardly altered over the period, while the Ivorian price level was fairly stable, the real volume of trade is fairly well represented by these figures.

As mentioned above, NRB products still generate most export revenue, although their relative importance has fallen over time. Cocoa, coffee, and logs accounted for two-thirds of exports in 1976 (U.S. $1.1 billion) versus 87 percent in 1960. Tropical fruit (pineapples and bananas), cola nuts, rubber, palm kernels, and a variety of other agricultural products accounted for the remaining NRB exports.

Manufactured goods generated 28 percent of export receipts in 1976 compared with 5 percent in 1960. Their growth rate has been twice as

high as that for NRB exports and reflects the emphasis upon encouraging processed NRB exports. In 1976 they were valued at about $450 million, versus about $9 million in 1960. Processed NRB exports grew from 2 to 14 percent of total exports, while the share of exports produced by activities in our importable categories (see section 6.3) rose from 3 to 14 percent in the postindependence period. In recent years,

Table 6.2 **The Composition and Growth of Ivory Coast Exports and Imports**

	Values, 1976 (Billion FCFA)	Compounded Annual Nominal Growth Rate, 1960–76[a]	Breakdown by Percentage of Total Trade		
			1960	1972	1976
Exports					
NRB	283.4	12.8	95.0	73.5	72.1
Cocoa	71.4	13.2	22.5	16.2	18.2
Coffee	132.8	12.4	46.6	26.4	33.8
Logs	62.4	14.0	17.6	23.3	15.9
Other NRB	16.8	9.9	8.3	7.6	4.2
HOS	109.6	27.7	5.0	26.5	27.9
Processed cocoa	19.9	*	—	3.4	5.1
Canned coffee	2.4	*	—	0.9	0.6
Canned fruit	8.1	18.6	1.2	2.5	2.1
Palm oil	7.8	*	—	1.6	2.0
Lumber, plywood	12.1	21.1	1.3	3.4	3.1
Canned fish	3.1	*	—	0.5	0.8
Refined petroleum	15.2	*	—	2.1	3.9
Other HOS	40.5	25.3	2.5	12.1	10.3
Total exports	392.5	14.7	100.0	100.0	100.0
Imports[b]					
Foodstuffs	37.4	11.1	17.7	16.2	12.0
Chemicals, plastics, rubber	29.6	14.4	9.1	8.8	9.5
Textiles	19.0	6.0	19.8	10.0	6.1
Machinery	66.1	18.8	11.1	19.6	21.2
Vehicles	45.5	10.6	18.2	12.6	14.6
Metals, metalwork	34.6	14.2	11.1	8.7	11.1
Construction material	7.5	19.0	2.1	2.6	2.4
Other[c]	72.3	60.0	10.9	21.6	23.2
Total imports	311.6	14.1	100.0	100.0	100.0

Source: Calculated from data in RCI, Ministère de l'Economie, *Statistiques du commerce exterieur* (1960, 1972), and BCEAO (1976).

[a]Asterisks (*) in the growth rate column indicate that there was no product in 1960.

[b]Imports exclude crude oil, which represented 5.3 percent of 1960 imports, 5.6 percent of 1972 imports, and 11.1 percent of 1976 imports.

[c]See note 11 for reservations regarding the size and growth rate of "other" imports.

revenue from processed NRB exports has increased more rapidly than that from other HOS and unprocessed NRB exports.

Although import growth rates have paralleled those for exports, there have been changes in their composition. For the entire postindependence period (1960–76), the most noticeable changes were decreases in the shares of foodstuffs, vehicles, and textiles, all of which are important import substitution activities, and an increase in the share of machinery imports.[11]

Direction of Trade

Approximately 85 percent of the Ivory Coast–international trade is with developed countries, mainly the EEC. However, the LDC share has increased in recent years. On the import side, the increase represents higher prices for crude oil;[12] on the export side, the increase represents larger sales of manufactures, particularly canned coffee, textiles, lumber, and petroleum.

Typically, the Ivory Coast runs a large trade deficit with France and (because of crude oil imports) with LDCs other than those in West Africa. This deficit is compensated for by surpluses with other DCs and West African LDCs. In 1976 the deficit with France was 20 billion FCFA (about U.S. $90 million), while surpluses with other DCs and West Africa were 42 billion FCFA and 15 billion FCFA (U.S. $185 million and U.S. $68 million), respectively. It is likely that this pattern of trade will continue in the near future.

Balance of Payments

Table 6.3 gives balance of payments accounts for 1963, 1972, and 1975. The principal features seen from these data are large surpluses in the Ivory Coast's merchandise trade, still larger deficits in services and unrequited transfers, and substantial capital inflows. In the post-independence period, the merchandise balance has never been negative, and other current account elements have never been positive. One of the largest elements of the service account is the transfer abroad of earnings on foreign direct investment in the Ivory Coast. Such transfers averaged FCFA 17.1 billion (U.S. $70 million) annually from 1970 to 1975. Private unrequited transfer deficits are large because they represent repatriated earnings of the foreign workers in the Ivory Coast. The deficits in the service and unrequited transfer accounts usually outweigh the trade account surplus, thus putting the current account in deficit.

The current account deficit has been offset in most years by capital inflows. In the 1960s private direct investment inflows were most significant. However, long-term borrowing, both private and governmental, has increased dramatically in recent years (IBRD 1977).

Table 6.3 **Ivory Coast's Balance of Payments, 1963, 1972, and 1975 (Values in Billion FCFA)**

	1963	1972	1975
Current account	−0.5	−29.7	− 82.3
Goods and services	0.5	−17.2	− 51.9
Merchandise	9.0	34.3	48.7
Services	−8.5	−51.5	−100.6
Direct investment revenue	−5.1	−14.4	− 29.3
Other services	−3.4	−37.1	− 71.3
Unrequited transfers	−1.0	−12.5	− 30.4
Private	−5.4	−20.8	− 38.1
Government	4.4	8.3	7.7
Nonmonetary capital	5.9	9.2	44.1
Direct investment	2.6	4.7	17.4
Other private long-term capital	2.1	7.2	20.2
Central government	1.2	1.2	11.3
Other	—	− 3.9	− 4.8
Errors and omissions	−1.0	0.1	2.8
Total (current account, nonmonetary capital, errors and omissions)	4.4	−20.6	− 35.4

Source: IMF (1970), BCEAO (1977). Data for years before 1963 and after 1975 are not available.

Exchange System

The Ivory Coast shares a common currency with other UMOA members. Its parity of FCFA 50 to the French franc has been unchanged since independence. The FCFA-dollar rate has ranged from about FCFA 200 to FCFA 280 per dollar and is currently about FCFA 235. Effective exchange rates (EER) vary from product to product, since most NRB exports are subject to sizable exit duties, and imports are subject to varying degrees of protection (see discussion below in section 6.3). In 1972 EERs ranged from FCFA 159 per dollar (exports of cocoa) to FCFA 386 per dollar (imports of shoes).

Price level deflated effective exchange rates (PLD-EER) were relatively constant in the 1960s, since domestic inflation was moderate (about 3 percent per year) and neither nominal nor effective exchange rates fluctuated widely. PLD-EERs have decreased in recent years because of an acceleration of inflation (about 10 percent per year since 1970) and a mild appreciation of the French franc vis-à-vis the dollar.

Trade Regime

There have been three phases in Ivorian commercial policy: (*a*) the period from 1960 to 1972, during which incentives for processing of

NRB products were not extreme and most import substitution activities were accorded relatively equal and moderate protection; (*b*) the period from 1973 to mid-1975, which followed a tariff reform designed to encourage greater processing to NRB exports and production of import-competing finished consumer goods; and (*c*) 1975 to the present, in which protection has been generally increased.

Before the 1973 tariff reform, export duties averaged about 15 percent of the f.o.b. value of exports, and import duties were about 34 percent of the c.i.f. value of imports.[13] Export duties were relatively uncascaded. For example, exit duties on logs and lumber ranged from 1 to 11 percent before the reform; after the reform, logs became subject to duties ranging from 27 to 50 percent, while plywood and lumber were subject to duties of 2 and 2–15 percent, respectively. For most other exports, the exit duty on the unprocessed products remained constant, and duties on processed NRB products fell precipitously. Consequently, export duties as a percentage of f.o.b. export values fell slightly in the postreform period (from 1973 to 1976, this ratio averaged 11 percent).

In the postreform period import duties were more cascaded; this reflected an effort to promote domestic import-competing production of finished goods. For example, textiles and clothing both were subject to tariffs of approximately 20 percent until 1972; after 1972, textiles were subject to rates ranging from 20 to 30 percent and clothing to rates ranging from 30 to 45 percent.

Import restrictions increased after mid-1975. Before that time, imports from the EEC enjoyed preferential treatment by being subject to only one of the two entry duties.[14] In 1975 the Lomé Treaty renegotiated trade arrangements between the expanded EEC and its African, Caribbean, and Pacific (ACP) associates. Essentially, this treaty offered duty-free entrance of most ACP exports to the EEC and eliminated requirements for reciprocal treatment of EEC exports to ACP associates. In mid-1975 the Ivory Coast began applying both entry duties to EEC imports, thus effectively raising duties on most imports. In 1976 import duties were 38 percent of the c.i.f. import value compared with 30 percent in 1973–74. This change is one manifestation of a policy shift favoring greater protection of domestic industry. There is also a new requirement that import orders above FCFA 500,000 (about U.S. $2,000) are now subject to inspection and price comparison with similar products on the world market.[15] Another reflection is an apparent increase in the use of quantitative restrictions, particularly for textile imports.

6.2.4 The Ivory Coast Labor Market

Unlike many other LDCs, the Ivory Coast has suffered from a deficiency of labor. To meet this deficiency, it has had to rely upon migrant

labor—unskilled labor from neighboring African countries (mainly Mali and Upper Volta) and skilled expatriate labor. However, labor market conditions are changing owing to a high population growth rate (4 percent per annum) and a high rural-urban migration rate.

As table 6.4 shows, population increased by 80 percent between 1960 and 1975. In the same period, urban population nearly quintupled while that of Abidjan (the capital) quintupled. The high urban population growth rate has generated a high urban unemployment rate. An approximate estimate would place such unemployment at about 25 percent today.[16]

The high population growth rate is due to a combination of high reproduction rates and migration from neighboring countries. Historically, the Ivory Coast has imported labor for employment in rural areas. The migration was due in part to a relatively low population density (about 52 per square mile versus more than 100 in neighboring Ghana, with which it has been frequently compared—e.g., Berg 1971). The current African migrant population is estimated at two million (den Tuinder 1978, pp. 6–7). Most migrants work in the agricultural sector or as unskilled labor in modern sector activities.

In addition to migrant Africans, there is a sizable expatriate population in the Ivory Coast (estimated at 50,000 by den Tuinder 1978).[17] Expatriates are usually employed in the most skilled occupations. Originally they were imported to fill manpower gaps at independence. Since

Table 6.4 Labor Market Conditions in the Ivory Coast

	1960	1965	1970	1975
Population (thousands)[a]	3,500	4,303	5,125	6,700
Number urban	502	946	1,435	2,300
Percentage urban	14	22	28	34
Located in Abidjan	200	340	590	1,000
Manufacturing employment[b]	10,000	20,770[d]	33,352	43,243[e]
Real wage index (1970 = 100)[c]				
Minimum industrial wage	83.7	93.0	100.0	108.7
Average manufacturing wage	n.a.	93.1[d]	100.0	106.3[e]

[a]Population data from den Tuinder (1978, p. 125) and Ministère du Plan (1967).

[b]Employment data for 1965, 1970 and 1975 are taken from Chambre d'Industrie (1975). The 1960 employment value is the author's estimate based upon IMF data (1970, p. 260). Urban employment refers to settlements over 4,000.

[c]The minimum real wage is the nominal minimum wage in manufacturing, deflated by the African consumer price index in BCEAO. It does not include other charges for family allowances, social security, etc. (*charges sociales*). The index of average manufacturing wages is based upon actual wages paid by Chamber of Industry members deflated by the African consumer price index.

[d]1966.

[e]1974.

then, their presence has been required to meet continued manpower needs created by the country's pace of development.

Tables 6.5 and 6.6 give my estimates of the structure of employment in the Ivory Coast in 1972. Only 12 percent of the labor force was involved in modern sector activity. The remaining 88 percent was concentrated in "artisanal" or "informal" sector activity, particularly in NRB activities. Of the modern sector labor force, only one-half was Ivorian. Migrant Africans (MA) formed 45 percent of the modern sector labor force, and non-African (NA) expatriates composed the remaining 5 percent.

Each nationality group predominated a particular occupational or skill category (table 6.6). Non-Africans occupied about three-quarters of the management positions; migrant Africans filled slightly more than half the unskilled positions; and Ivorians constituted two-thirds of the skilled occupations.[18]

There are legislated minimum wages for nearly all levels of employment in the Ivory Coast. The two most important are the minimum wages in industry and plantation agriculture. The real minimum industrial wage was relatively constant in the 1960s, hovering around 85 percent of its 1970 value as adjustments to the nominal minimum wage were made periodically to account for inflation. However, the nominal minimum agricultural wage was adjusted less frequently and by relatively smaller amounts. Thus, the ratio of real minimum wages in industry and agriculture widened gradually over the 1960s and probably contributed to the increasing flow of population to urban areas. More recently, the real minimum wage in industry has increased dramatically. From 1969 to 1976, it rose by about 40 percent. It is now about three times the minimum agricultural wage and more than double the minimum industrial wage in the neighboring countries that supply unskilled labor.[19] As a consequence, rural-urban migration has intensified and urban unemployment has become a more significant problem.

Other wages are primarily market-determined in the Ivory Coast. In my discussion of factor market distortions below (section 6.6), I will observe that modern sector wages are usually above the minimum in skill categories other than unskilled labor. In the urban informal sector, wages have historically been approximately 20 percent below the minimum industrial wage (as best one can determine). Thus the only significant distortion in the labor market appears to be the artificially high minimum wage for unskilled industrial labor.[20]

6.2.5 Capital Market Policies

Since independence, the Ivory Coast has applied an investment code to attract foreign direct investment. This code allows capital goods to be underpriced, since it contains provisions for tax holidays, duty-free

Table 6.5 **Estimated Employment by Nationality and by Production Category, 1972**

Production Category	Modern Sector Activities[a]				Artisanal Activities	Grand Total and Percentage of Total Employment
	IVOR	MA	NA	Total		
NRB						
Number	18,339	445	1,350	55,134	1,347,333	1,401,416
Percentage of total in category	1.3	2.5	0.1	3.9	96.1	81.8
HOS						
Number	23,026	14,228	1,486	38,740	63,427	102,167
Percentage of total in category	22.5	13.9	1.5	37.9	62.1	6.0
Home goods						
Number	59,471	41,614	7,489	108,574	100,427	209,001
Percentage of total in category	28.5	19.9	3.6	51.9	48.1	12.2
Total						
Number	100,896	91,247	10,325	202,468	1,511,187	1,713,655
Percentage of total	5.9	5.3	0.6	11.8	88.2	100.0

Source: Monson 1978.

[a]IVOR = Ivorian; MA = migrant African; NA = non-African.

Table 6.6 Estimated Employment in Modern Sector by Skill Level, 1972

Skill Level[a]	Modern Sector Activities[b]			
	IVOR	MA	NA	Total
Management				
Number	1,666	525	6,178	8,369
Percentage distribution	20.0	6.3	73.8	4.2[c]
Skilled				
Number	28,786	10,093	4,081	42,960
Percentage distribution	67.0	23.5	9.5	21.2[c]
Unskilled				
Number	70,444	80,629	66	151,139
Percentage distribution	46.7	53.3	—	74.6[c]
Total				
Number	100,896	91,247	10,325	202,468
Percentage distribution	49.8	45.1	5.1	100.0

Source: Monson 1978.

[a]Management refers to management and technicians; skilled refers to supervisors and skilled blue- and white-collar labor; and unskilled includes semi-skilled white- and blue-collar labor, unskilled workers, and apprentices.

[b]IVOR = Ivorian; MA = migrant African; NA = non-African.

[c]Percentage of total employment in modern sector.

import of equipment and inputs, and tax rate guarantees (for details see section 6.3). The code has been used by most investors in modern sector manufacturing. In 1972 production of firms most favored under the investment code was 65 percent of total modern HOS production. About 80 percent (in 1972) of modern HOS activity was owned by foreign interests. The net effect of the investment code is an indirect subsidy to capital and therefore the encouragement of higher capital intensities.

Fragmentary evidence from member firms of the Ivory Coast Chamber of Industry (Chambre d'Industrie 1975) appears to justify the claim that factor market distortions have favored capital utilization. Using employment, capital stock, and production data for these firms, and making crude adjustments for inflation,[21] I calculated incremental capital/labor ratios and employment elasticities for 1968–74. Table 6.7 gives my estimates. Note that in 1968–71 the employment elasticities roughly correspond to those mentioned earlier (0.8). After 1971 the estimates fall dramatically. My calculations further indicate that the ratio of the real undepreciated capital stock to employment rose some 60 to 70 percent over the period to about FCFA 4 million per worker by the end of 1974 ($16,000, converted at the exchange rate of FCFA 250 per U.S. dollar). It seems probable that these changes can be attributed, in large part, to more capital-intensive technologies, influenced by provisions of the investment code as well as to an increasing real minimum industrial wage.

Table 6.7 Incremental Capital/Labor Ratios, Employment Elasticities, 1968–74

Year	Incremental Capital/Labor Ratio (Billions FCFA/Man-Year)	Employment Elasticity with Respect to Output
1968	2.220	.77
1969	2.513	.68
1970	4.183	1.08
1971	4.337	.74
1972	3.723	.42
1973	4.562	.42
1974	12.525	.16

Source: Calculated from data in Chambre d'Industrie (1975). Annual investment deflated by the building materials index to obtain real investment; output deflated by the value of the consumer price index. Data cover all firms registered with the Chamber of Industry except public utilities.

6.2.6 Other Considerations

Inflation

Inflation has not been an important consideration in the Ivory Coast. During the 1960s and early 1970s, prices rose, on average, at about 3 percent per year. More recently, price increases have been about 10 percent per annum.

Income Distribution

Income distribution also has not been a problem in the Ivory Coast. In general, incomes are relatively evenly distributed in comparison with other African countries. World Bank estimates (den Tuinder 1978, p. 135) place the percentage of income received by the lowest 40 percent of income earners at 20 percent and that earned by the top 20 percent of income earners at 51 percent. The comparative evenness occurs because, through NRB exports are subject to exit taxes, the taxes are less than those of many other countries. Thus, peasant farmers of cocoa and coffee, who form the bulk of the labor force, are better treated than farmers elsewhere. Additionally, the Ivory Coast has had an effective extension service aimed at improving agricultural productivity so that output has increased remarkably since independence.

6.2.7 Summary

The Ivory Coast has enjoyed an enviable record of economic growth since independence. This growth is due to its emphasis upon traditional exports to developed countries, coupled with a dependence upon

foreign labor and capital. Employment generation, though not a problem in the past, has become one today as a result of a high population growth rate, a continued migration of labor from neighboring countries, and a high rural-urban migration.

6.3 The Structure of Production

In this section I classify Ivorian production following the methodology described in chapter 1. Activities are first separated into NRB, HOS, or home goods according to the nature of their production, then the statistic T_i is used to classify NRB and HOS production as exportables, importables, or noncompeting production.[22] In general, exportables are those activities with a negative T_i; importables have T_i statistics between zero and 0.75; and noncompeting production has T_i statistics greater than 0.75 (with certain exceptions described below). I further separated HOS importables into those that would exist "naturally," those whose primary competition is from developed countries (DCs), and those whose primary competition is from less developed countries (LCDs). The DC-LDC separation was not made for HOS exportables or NRBs because of the limited number of activities in each category (five HOS exportables and seven NRB activities). Tables 6.8 and 6.9 summarize my categorizations.

Table 6.8 Characteristics of Ivorian Exportable Production, 1972

Activity	Major Ivorian Products	Modern Sector Value Added as a Percentage of the Activity's Total Value Added	T_i	Exports (Millions FCFA) DCs	Exports (Millions FCFA) LDCs
NRB production					
Coffee	Green coffee beans	0.0%	— 5.212	41,710	2,149
Cocoa	Green cocoa beans	0.0	—14.913	23,739	192
Other exports	Agriculture, rubber, fruit	5.8	— 5.578	8,270	1,867
Logs		87.0	— .517	30,831	1,725
HOS production					
Canned fruit	Pineapple	100.0	— 7.244	4,450	72
Canned coffee	Instant coffee	100.0	— 2.285	514	774
Processed cocoa	Cocoa butter, powder	100.0	— 8.503	5,591	17
Edible oils	Palm oil	94.0	— .355	2,842	355
Lumber	Sawn lumber, plywood	100.0	— 1.313	4,086	732

Source: Monson 1978, tables I–1, I–5, III A–B.

Table 6.9 Characteristics of Ivorian Importable Production

Activity	Major Products	Modern Sector Value Added as a Percentage of the Activity's Total Value Added	T_i	Imports (Millions FCFA) DCs	LDCs
NRB production					
Traditional	Agriculture, livestock, grains	1.0%	.149	2,552	6,509
Fishing	Fish	65.0	.227	1,037	238
HOS production					
Competitive importables					
Bakeries	Bread, biscuits	79.0	.023	195	3
Other milled products	Milled rice	6.0	.343	1,268	1,274
Beverages	Beer, soda	100.0	.354	1,441	1,324
Other processed food	Processed meat, candy	27.0	.045	1,773	523
Wood products	Furniture	43.0	.134	828	13
Paper	Boxes, toilet paper	100.0	.621	3,283	187
DC competing importables					
Paint	Paint	100.0	.135	289	30
Soap	Soap	100.0	.257	1,158	5
Plastic products	Dishes, packaging	100.0	.180	638	13
Other chemicals	Matches, glue	100.0	.810	4,579	52
Rubber	Tires, mattresses, latex	100.0	.526	2,760	33
Cement	Cement	100.0	.472	4,959	65
Autos (assembly)	Autos, trucks	100.0	.735	14,533	15
Other vehicles	Boats, bicycles, motorcycles	100.0	.531	2,382	0
Metalwork	Fabricated metal products	67.0	.469	7,575	117
Printing, diverse	Printing, miscellaneous	37.0	.413	2,488	279
LDC competing importables					
Flour	Flour	100.0	−.073	33	23
Tobacco	Cigarettes, cigars	100.0	.571	6,417	1,525
Textiles	Textiles	100.0	.122	5,607	2,202
Clothing	Clothing	32.0	.535	3,921	596
Shoes	Plastic shoes	70.0	.329	1,164	380
Petroleum refining	Petroleum products	100.0	−.058	911	817
Fertilizer	Fertilizer	100.0	.105	611	237
Noncompetitive importables					
Minerals	Diamonds	100.0	.703	464	6,788
Machinery	Machinery	100.0	.893	21,468	197
Basic chemicals	Essential oils	100.0	.881	3,636	63

Source: See table 6.8.

6.3.1 NRB Activities

The seven NRB activities given in tables 6.8 and 6.9 generated about one-third of GDP and employed about 80 percent of the Ivorian labor force. Artisanal activity (defined above in section 6.2) dominates NRB production, employing 96 percent of the NRB labor force and producing 75 percent of NRB output. As implied by the column "Modern Sector Value Added as a Percentage of the Activity's Total Value Added," artisanal activity is confined mainly to cocoa and coffee production for export and production of traditional foodstuffs (yams, manioc, rice, etc.) for domestic consumption. Modern sector activities are found in logging, other export (larger plantation) agriculture, fishing, and minerals.

NRB export activities include traditional coffee, cocoa, and log exports and newly developed agricultural exports (palm products, fruit). NRB importable activities include traditional agriculture and fishing. The sole NRB noncompeting importable is minerals. In 1972 there was some diamond mining in the Ivory Coast that has since ceased. Imports in the minerals category include mainly crude oil for local refining.

6.3.2 HOS Activities

The thirty-two HOS industries in tables 6.8 and 6.9 generated 17 percent of GDP and employed 6 percent of the labor force in 1972. Five HOS industries had T_i statistics considerably less than zero and were characterized as exportables,[23] twenty-three were categorized as importables, and two were classed as noncompeting importables.

All five HOS exportables used domestically produced NRB inputs, thus raising the question whether they should be categorized as NRB or HOS activities. However, in all cases the unprocessed input could be exported for processing elsewhere, thus necessitating the HOS classification.[24] In 1972 these activities accounted for 17 percent of HOS production and 14 percent of exports. They employed 35 percent of the modern HOS labor force, and 65 percent of their production was exported (primarily to developed countries with the exception of canned coffee, for which West African LDCs constituted 60 percent of the export market).

In the HOS importable category, six activities receive "natural" protection and are called "competitive" importables; seven compete against LDC source imports; and the remaining ten compete against DC source imports.[25] The "naturally" protected industries require little, if any, protection, since they process raw materials found in the Ivory Coast (rice milling, processed food, furniture) or are borderline nontradables (bakeries and biscuits, beverages, paper). In 1972 they accounted for 21 percent of HOS production. The LDC-competing importables made up 39 percent of HOS production and employed 27 percent of the

modern HOS labor force while the DC-competing importables made up 21 percent of HOS production and employed 18 percent of the modern HOS labor force in the same year.

Only two HOS activities were categorized as noncompeting importables (machinery and basic chemicals). Their production accounted for less than 2 percent of HOS production. Note that the activity "other chemicals" was categorized as a competing importable despite a fairly high T_i (0.81). This was due to the level of aggregation and the fact that there was significant Ivorian production in the category.

Artisanal activity was also significant in the HOS sector. The artisanal sector employed 62 percent of the total HOS labor force but accounted for only 15 percent of the value of total HOS production. Actually, most artisanal production classified in an HOS activity in the Ivorian national income accounting nomenclature was nontradable (e.g., shoe repair in the shoe manufacturing industry, cabinetmaking in the wood products industry, etc.). Whenever artisanal activity is nontradable in nature, I will treat it as a home good in my factor requirements estimates (section 6.5).

6.3.3 Home Goods

The remaining share (50 percent) of GDP originated in the tertiary sector. Services and commercial activities accounted for 58 percent of tertiary production, while construction, transportation, electricity and water composed the rest.

6.4 The Trade Regime

As discussed above (section 6.2), the Ivory Coast's trade regime is relatively uncomplicated and probably somewhat less restrictive than that of most LDCs. The trade regime in the period under study (1972–73) was characterized by tariff cascading, exit taxes on NRB exports, and concessions under the investment code.[26] Each is discussed in turn below.

6.4.1 Policies Affecting Importable Activities

The two major forms of incentives offered for domestic production of importables were tariffs and quantitative restrictions. Additionally, two firms (one in fertilizers, the other in chemicals) received direct subsidies, and some firms obtained preferential credit terms. However, these latter preferences were relatively minor.

The Ivory Coast's tariff code is fairly simple. Most duties are ad valorem and escalate according to the degree of processing.[27] In 1973 there were two entry duties. EEC source imports were subject to one of these duties, and imports from most other sources were subject to both

duties. The major exception to this pattern was imports from member countries of the former West African customs union (UDEAO), which were subject to one-half the duty of those levied on EEC goods.[28]

Prior authorization of imports, quotas, and import prohibitions were used in 1973. However, they were not very significant. Imports were categorized into three groups: prohibited, restricted, and liberated.[29] All restricted imports were subject to country quotas. Imports from the EEC and other countries with which the Ivory Coast had commercial agreements were granted priority. Licenses for liberated imports were readily obtained.

6.4.2 Policies Affecting Exports

Exit taxes were the most significant policy instrument influencing exports. NRB export activities were also affected by specialized government organizations that provided extension services, offered subsidized inputs, and acted as marketing agents for the products concerned (Elliott 1974). HOS export activities tended to be concentrated in firms that have received concessions under the investment code.

Exit taxes applied to all NRB exports and some processed NRB exports. Rates on NRB exports were higher on traditional products (such as coffee, cocoa, and logs) than on newly developed products (such as palm oil and latex). The rates were ad valorem and were applied to officially fixed prices (*valeurs mercuriales*). Since neither the tax rate nor the official price changed frequently, the tax became specific in nature. In 1973 the taxes ranged from approximately 2 percent (palm oil), to 16 percent (coffee), and 30 percent (cocoa) of the average 1973 f.o.b. price of the export.[30]

Aside from the export tax, there was a marketing board (*Caisse de Stabilisation et de Soutien des Prix des Production Agricoles*) for coffee, cocoa, and cotton, whose stated purpose was to stabilize prices paid to producers. In practice it had accumulated fairly large surpluses (e.g., $60.4 million in 1973/74)[31] that were reallocated to agricultural activities into which the Ivory Coast wished to diversify. Since the Caisse had control over these exports, its surpluses acted as an additional tax on producers. In 1973 the producer price for coffee and cocoa was about 60 percent of the f.o.b. price less fees paid the exporting agent; in 1975 these ratios were about 65 percent for cocoa and 55 percent for coffee.

The only significant taxes on major HOS exports were applied to processed cocoa (about 15 percent), lumber (5–15 percent), and plywood (2 percent). Since they were considerably less than those on the unprocessed product, they amounted to an indirect incentive to process cocoa and logs domestically.

Firms exporting manufactures could, in principle, import inputs duty-free. In practice, regulations on separate storage plus the administrative

lag in obtaining permission for importing restricted this benefit to a few large exporting firms.

With the exception of lumber, HOS production was concentrated in the hands of firms receiving concessions under the investment code (discussed below). These concessions, combined with indirectly subsidized local inputs, tended to provide fairly high levels of protection.

6.4.3 The Investment Code

The Ivorian investment code offered a generous set of tax incentives to attract direct foreign investment. There were two categories of private firms established under the code: priority firms (*entreprises prioritaires*) and common-law firms (*entreprises de droit commun*). Common-law firms were exempted from profit taxes (currently 40 percent) for five years and received several other minor tax concessions. Priority firms received a ten-year profit tax exemption, duty-free import of equipment (to establish the plant) and of inputs (for ten years), and a guarantee that tax rates applicable at the time the priority agreement was made would apply for up to twenty-five years. (This was especially important because the profit tax rate increased from 33 to 40 percent between 1971 and 1976.) In return, their activities were subject to yearly analysis by the Planning Ministry, and price increases had to be approved by the Ministry of Finance.

As of January 1975, eighty-two firms had been granted priority status. While most major exporting firms had this status, the bulk of priority firms (80 percent) were engaged in importable activities. Industries in which priority firm production was important included textiles, petroleum refining, fertilizers, metalworking, and automobile assembly.

6.4.4 Levels of Protection

Table 6.10 gives estimates of protection for the various commodity categories described above. The estimates are based upon direct price comparisons and include effects of QRs whenever appropriate.[32]

In general, protection was moderate, although neither low[33] nor uniform across commodity categories. NRB activities were less protected than HOS activities, and exportables were less protected than importable activities, regardless of whether they were NRB or HOS importables.

All NRB activities had ERPs equal to or less than zero with the exception of fishing (46 percent). Exit taxes on NRB exports, especially traditional exports, caused the low ERP estimate for NRB exports. The ERPs for coffee, cocoa, and logs were —45, —44, and —36 percent, while the ERP for other export agriculture was —16 percent.

On average, HOS exportables received slightly greater protection than HOS importable activities. However, when competitive HOS importable activities are excluded, exportables receive significantly less protection

Table 6.10 Weighted Average Protection by Commodity Category, 1973

	Nominal Protection		
	Output	Tradable Inputs	Effective Protection
Exports	−26%	8%	−36%
NRB	−28	9	−40
HOS	2	−7	35
Importables	4	7	13
NRB	3	5	3
HOS	6	10	29
Competitive	− 6	15	−21
Requiring protection	20	6	84
From DC imports	18	5	45
From LDC imports	24	7	139
Noncompeting imports	24	7	101
Total	2	8	−28

Source: The averages are computed from data found in the statistical appendix to this study (Monson 1978). The weights are the IVA of domestic production of each activity within a commodity category. The ERP estimates include premiums on import licenses. See also note 32.

than HOS importables requiring protection (ERPs of 35 and 84 percent, respectively). Within the latter category, those activities requiring protection from DCs were less protected than those requiring protection from LDCs (ERPs of 45 and 139 percent, respectively).

The ERPs on HOS exports were positive because, though exports received little protection on output, their major domestically produced inputs were available at less than world market prices. For example, sawmills obtained logs at the world market price minus the exit tax normally paid on log exports. The one activity (canned coffee) that had an extreme ERP (6,111 percent) had a very low international value added owing to this subsidy.[34]

All "competitive" importables had negative ERPs except the wood products industry (ERP of 115 percent), which enjoyed fairly high nominal protection on output (28 percent) and whose inputs were only moderately taxed (3 percent). All other activities in this category paid substantial taxes on tradable inputs and received little, if any, protection on their output, a result caused, in part, by the small representation of priority firms (13 percent) in the category's production.[35]

The averages given in the table conceal wide variations and several extreme estimates. The extremes were canned coffee (noted above) and flour (an ERP of 1,124 percent). In the category of DC importables,

paint, other chemicals, and metalwork had ERPs greater than or close to 100 percent, while rubber, cement, autos, and other vehicles had low or, in the case of cement, even negative ERPs. Those with ERPs near the average for this category were soap, plastics, and printing and diverse industries. In the LDC-importable category, tobacco had a negative ERP (—3 percent), petroleum refining received below-average protection (91 percent) and clothing about average (137 percent), while textiles (194 percent), shoes (239 percent), fertilizer (278 percent), and flour received above-average protection.

To summarize, in 1973 the Ivorian trade regime was probably somewhat less restrictive than that of most LDCs. It had a cascaded tariff structure that protected LDC importables more than DC importables. NRB exports were taxed mainly to raise fiscal revenues, and HOS exports received moderate effective protection because of implicit subsidies on inputs.

6.5 Factor Requirements and the Ivory Coast's Net Factor Content of Trade

The foregoing discussion suggests features of the Ivorian economy that may be useful in theorizing about Ivorian patterns of trade and specialization and their employment implications.

Relatively speaking, the Ivory Coast is a "Third," not a "Fourth," World country. Its per capita income (U.S. $700 in 1976) is high in relation to many (especially African) LDCs. Its population density is relatively low, and agricultural expansion has occurred more through increases in land under cultivation than through the use of intensive production techniques. Finally, foreign capital and labor have played integral parts in its development efforts.

These considerations imply that the Ivory Coast fits the category "underdeveloped" better than "poor" in the context of Krueger's three-factor model (1977). Its development pattern has followed that outlined in her analysis. Since independence, its high land-labor ratio has caused agricultural wages to be high in comparison with those in many LDCs. Development began with expansion of agricultural activities then later moved toward manufacturing as the liberal investment code encouraged foreign capital inflows. However, manufacturing wages also had to be high in order to induce rural-urban migration, although not so high as set by the minimum wage for unskilled labor. Manufacturing activities, then, ought to be somewhat more heavily weighted toward more capital-intensive production than in many LDCs. A reasonable assumption is that the Ivory Coast manufacturing capital-labor ratio falls between those of more developed countries and "poorer" LDCs (i.e., those with low land-labor ratios).

If this contention is true, then theory predicts that the capital intensity of manufactured (HOS) exports to more capital-abundant (DCs) nations will be lower than the capital intensity of manufactured exports to LDCs. Similarly, the capital intensity of production of commodities competing with imports from DCs will be higher than that of commodities competing with imports from LDCs. Extending this analysis to employment levels, theory then predicts that export trade with DCs will utilize relatively more labor than trade with LDCs. Since most trade is with developed nations, Ivorian exports should be generally more labor-intensive than the country's imports.

In this section, I will examine the factor content of trade to determine if these expectations are generally confirmed.

6.5.1 Procedures

At the time this study was undertaken data for 1973, the year of my protection estimates, were not available to estimate labor coefficients and the net factor content of trade. However, 1972 data were available, which allowed me to disaggregate the twenty-seven-activity input-output table into forty-nine activities. Likewise, good employment data could be found for most activities for 1972. In cases where 1972 employment data were inadequate, data from other years in the period 1971 to 1974 were adjusted to 1972 levels.[36] I believe this 1972 data set provides a good description of the Ivorian economy in the early 1970s and that it can be used to generalize about economic conditions in 1973, the year of my protection estimates.

I proceeded to use this data to estimate labor coefficients for each occupational category mentioned earlier (management, skilled and unskilled labor) for modern sector activities. No corresponding breakdown was possible for artisanal activities. The units used in the estimates were man-hours per million FCFA of domestic value added (in 1972, one million FCFA was approximately equal to U.S. $4,000). Detailed estimates by activity are given in table 6.A.1. I then aggregated these estimates by major trade categories in table 6.11 (using value added in domestic production as weights) and used these, in turn, to compute the net factor content of trade in table 6.12. Two separate estimates were made—one for all tradables and a second that focused more narrowly upon modern HOS tradables only.

The reason for the two estimates was the large artisanal component of Ivorian production. Recall that artisanal activity produced three-fourths of NRB output and one-third of GDP and employed close to 90 percent of the labor force in 1972. Artisanal production posed three problems for the analysis—its inadequate data base, its probable dependence upon resources specific to the country, and an uncertainty about the extent to which it can continue to foster economic growth.

Operationally, the first problem was most severe, since artisanal employment data were sketchy at best and fraught with problems of seasonality, the treatment of family labor, multiple products, and so on.[37] The second problem raised some theoretical issues, since artisanal production consists mainly of NRB goods, all of which can be produced economically only in tropical areas. To a certain degree, their production probably was dependent upon resources specific to the country. The third problem was potentially most important. While artisanal activity has accounted for past growth, it is likely that future growth will depend much more upon expansion of modern plantation agriculture and manufacturing activities as good arable land becomes scarcer. Stryker (1974, p. 65) suggests that "today, much of that land has a relatively high opportunity cost in terms of cocoa or coffee which may be grown." Expansion of NRB production will have to come increasingly from higher yields and diversification into new crops.[38]

For these reasons, I present the two estimates. The "all tradables" estimate (including artisanal and modern HOS and NRB tradables) should be interpreted (cautiously, given the data problems) as explaining what did happen to employment in the first fifteen years after independence; the modern HOS estimate should be interpreted as explaining what might happen if growth centers upon manufacturing activities. Given the qualifications concerning inadequate data and specific resources, I feel more comfortable emphasizing the HOS estimates.

6.5.2 Factor Requirement Estimates by Trade Category

Table 6.11 gives, by major trade categories, estimates of total labor requirements (direct plus indirect in home goods) per unit of DVA and IVA using value added in production as weights. The first four columns break down the DVA estimates for the modern sector by skill level, and the next two columns add artisanal employment. Values in the column entitled "grand total" are the relevant ones to compare labor requirements per unit of DVA in the various commodity categories. The column to the far right converts the estimates to show total requirements per unit of IVA.

Labor requirements per unit of value added for the "all tradables" categories, both exports and imports, are dominated by the artisanal labor component and are very large in comparison with those for the modern HOS categories, attesting to the high labor intensity of artisanal production. For example, the unit labor requirements for tradable NRBs (largely artisanally produced) are far larger than those for HOS tradables. These differences were symptomatic that Ivorian comparative advantage in 1972 lay in labor-intensive NRB production. In comparing the DVA and IVA estimates for all export tradables, one sees that labor requirements are much lower for the IVA than for the DVA calculations.

Table 6.11 Total Labor Requirements by Major Trade Category, 1972

Trade Category	Man-Hours per Million FCFA of DVA[a]						Total Man-Hours per Million FCFA of IVA
	Modern Sector[b]				Arti-	Grand	
	Man	Sk	Unsk	Total[c]	sans	Total	
Exportable production							
All tradables	28	167	1,151	1,346	16,496	18,993	11,533
NRB exports	25	143	1,158	1,326	18,607	19,933	12,219
Modern sector HOS exports	53	383	2,026	2,463	25	2,488	3,647
Importable production							
All tradables	22	124	467	612	9,693	10,305	10,272
NRB importables	7	25	186	219	12,468	12,687	13,107
Modern sector HOS importables	64	406	1,352	1,823	16	1,839	2,577
Competitive	75	449	1,953	2,477	24	2,501	1,707
All requiring protection	61	394	1,183	1,638	14	1,652	3,290
From DC imports	60	387	1,053	1,500	20	1,520	2,334
From LDC imports	61	399	1,273	1,733	10	1,743	4,372

Source: Derived from appendix table 6.A.1.

[a]Direct plus indirect labor in home goods. Weights are value added of domestic production.

[b]Man = management; Sk = skilled; Unsk = unskilled.

[c]Components may not sum to total because of rounding errors.

The negative ERPs of exports were the primary cause here. For importable activities the difference was negligible, since NRB importables dominated production (generating about 70 percent of the DVA of tradable ICAs), and international and domestic value added were similar because of low protection (see table 6.11). It would be consistent with my hypothesis that the Ivory Coast's manufacturing capital/labor ratio fell between those of DCs and other LDCs if labor requirements for exports were greater than those for importables and if, within the importable category, goods competing with imports from DCs had lower labor requirements than goods competing with imports from LDCs. The results presented in table 6.11 generally follow this pattern. Reading down the "grand total" column, we observe that the labor requirement per million FCFA of DVA in export production (2,488 man-hours) was 50 percent greater than for all importables requiring protection (1,652), and LDC-competing importables used 15 percent more labor than DC-competing importables (1,743 and 1,520 man-hours, respectively).[39]

I separated competitive HOS importables from HOS importables requiring protection because I had no a priori notion of where they would fall in a ranking of commodity categories by labor coefficients. They

might be competitive because of the availability of NRB inputs at low (export) prices in the Ivory Coast or because of high transport costs for the commodity. Either way, there was no presumption about labor requirements. Alternatively, they might require little protection since they were labor-intensive goods and embodied Ivorian comparative advantage.

The labor coefficients for competitive HOS importables in table 6.11 suggest that there might be some validity in the latter speculation, since they used about the same labor per unit of DVA as HOS exports (2,501 versus 2,488 man-hours). Moreover, a trade-weighted estimate was 23 percent below that using production weights (1,930 versus 2,501 man-hours), suggesting that imports in this group were more heavily weighted with capital-intensive goods than domestic production within the same category.

Turning now to the labor coefficients by skill categories, in table 6.11 we first observe that the absolute values of the management and skilled labor requirements, per unit of DVA, did not vary much between exports and importables requiring protection. Differences in total labor requirements were found mainly in the unskilled labor coefficients. All differences in the unskilled category were expected. Those for exports were larger than importables requiring protection and, among the latter, those for LDC-competing importables were larger than DC-competing importables but smaller than exportables.

The proportion of skilled workers and managers was higher in all categories of importable activities than in exportable production. Management constituted 2.1 percent and skilled labor 15.4 percent of workers per unit of DVA in exportables. For importable production, the figures were 3.0 and 17.9 percent for competitive protection and 3.7 and 23.8 percent for all requiring protection.

For HOS trade categories other than competitive importables, labor coefficients increased as I changed from DVA to IVA measures. This change was most noticeable in protected importables competing with LDCs. Even with these changes, it was still true that exportables used more labor (per unit of IVA) than all importable categories (except LDC importables), indicating that the moderate levels of protection in the Ivory Coast limited, at least to some extent, the degree of inefficiency of these industries. Comparison of the increases in each case indicates the degree of relative inefficiency. For HOS exportables, labor coefficients rose by 47 percent; for all importables requiring protection, they rose by 99 percent; for DC importables, by 53 percent, and for LDC importables, by 151 percent.[40]

6.5.3 Net Factor Content of Trade

For the net factor content of trade estimates, I computed the change in inputs that would result from equal increases of one million FCFA of

IVA in the domestic production of exportable and importable activities.[41] Data given in table 6.11 were used for the estimates. The results using both trade and production weights are given in table 6.12.[42]

The Ivory Coast was a net exporter of unskilled labor and a net importer of management and skilled labor in 1972. In fact, when all activities (including NRB production) are considered, it was a net importer of all modern sector labor under the trade weights, meaning that it was artisanal labor that accounted for net exports. This conclusion is not surprising, given the predominance of artisanal production in NRB exportables. For the modern sector, however, the Ivory Coast was a net exporter of unskilled labor and a net importer of skilled labor. The Ivory Coast's comparative advantage in modern manufacturing is most clearly pinpointed in the calculations for HOS exportables and HOS importables requiring protection. There the net factor coefficient was negative for management and skilled labor and positive for unskilled labor.

6.6 Employment Effects of Ivorian Commercial and Factor Market Policies

A variety of questions come to mind when we consider the ramifications of Ivorian policies upon the labor coefficient estimates of the last section. Earlier, I described Ivorian commercial policy as being moderately less restrictive than those of many LDCs; import-competing production received more preferential treatment than exportables and,

Table 6.12 The Net Labor Content of Trade

	Modern Sector[a]					
	Man	Sk	Unsk	Total	Artisanal	Grand Total
All Activities						
Production weights	− 8	− 40	201	152	1,108	1,261
Trade weights	−37	−241	−509	−787	4,673	3,886
Modern HOS[b]						
Production weights	−12	− 8	1,075	1,055	15	1,070
Trade weights	−13	− 34	1,002	955	5	960
Modern HOS exports and importables requiring protection[c]						
Production weights	−43	−223	615	348	9	357
Trade weights	−32	−173	707	503	10	513

Note: Net labor content of trade = net man-hours employed per million FCFA of IVA of balanced trade expansion. Computed from table 6.11.

[a]Man = management; Sk = skilled; Unsk = unskilled.

[b]Including naturally protected importables.

[c]Excluding naturally protected importables.

within the category of exportables, HOS production was treated more preferentially than NRB production. In factor markets, the only significant distortions were the investment code and minimum wage legislation. These policies contributed to an increase in the share of HOS commodities in exports and the displacement of some finished consumer goods imports by domestic production.

This section examines issues related to the employment effects of these policies. Among other things, we will seek to determine (1) if employment has been discouraged by the greater protection on importables than on exportables and the consequent shift in production patterns; (2) if, and how, incentives to capital under the investment code have affected capital and labor utilization; and (3) if the minimum wage system has discouraged labor utilization.

6.6.1 Effects of the Trade Regime upon Factor Utilization

Theory predicts that, within commodity categories, less protected activities should more closely embody Ivorian comparative advantage relative to the destination of exports or source of import competition. That is, for exportables and DC importables, less protected activities ought to be more labor-intensive than more protected activities. The reverse should be true for LDC importables if the Ivorian capital labor endowment is greater than those of other LDCs.

I focused only upon modern sector HOS activities[43] to analyze these issues (largely because of data problems). My approach was twofold. First, I estimated Pearson correlation coefficients between my measures of protection (nominal and effective) and estimates of the capital/labor ratio for activities within a commodity category to determine if significant relationships existed. In general this procedure did not provide meaningful results (see below).[44] For the second procedure, I classified activities within a commodity category as receiving above or below average protection within the category. Then I calculated average ERPs and labor requirements for each subgroup. This procedure provided somewhat more meaningful results that tended to support the contentions mentioned above and that suggested an overall capital-using bias in the Ivorian trade regime.[45]

The Pearson correlation analysis was performed separately for DC and LDC importables only, since exportables included only five activities. The results for these two categories were not robust. The only statistically significant correlation coefficient in one-tailed tests at a 95 percent confidence level was that between the capital/labor ratio and nominal protection on output (—.526) for the LDC importable category. Nonetheless, the estimated coefficients offer partial corroboration of biases caused by protection on importables, since the signs were invariably correct and some coefficients were fairly large (e.g., —.366 and

.216 between the capital/labor ratios and ERPs of LDC and DC importables, respectively).

Table 6.13 gives the results of my estimates of ERPs and labor requirements for more and less protected activities within a commodity category. The strongest results are found in the exportable and DC importable categories. In both cases, less protected activities used more labor (about 25 percent) than protected activities, as expected. A second result is the almost uniform relative shares of unskilled labor used by more and less protected activities *within* a commodity category (there are differences among commodity categories, as was observed in section 6.5). For example, unskilled labor constitutes 80 to 85 percent of the exportable labor requirement whether or not the activity is highly protected. This uniformity suggests either that commercial policy exerted an influence through changing the composition of output or that factor market policies were uniformly applied across commodity categories. That is, policies distorting factor prices for one or more activities in a category should produce different estimates for unskilled labor components for more and less protected activities in that category.

Refer now to the results for LDC importables. These are ambiguous, and their interpretation depends upon whether petroleum refining is treated as an HOS good in the analysis.[46] Two sets of calculations are given, one including and the other excluding refining. When refining is included, less protected LDC importables have lower average labor requirements than more protected activities, as expected. When refining is excluded, the opposite result is obtained.

While the results of these two exercises are far from conclusive, they generally support the contention that Ivorian commercial policy was biased toward capital-using industries at least in exportables and DC importables. In both cases, more protected activities tended to use less labor than less protected activities. For LDC importables the evidence is less clear. As expected, LDC importables were more labor-intensive than DC importables, but the ambiguity provided by petroleum refining makes it unclear if protection encouraged the production of more or less labor-intensive commodities.

6.6.2 Changes in the Composition of Production

My objective here is to present some fragmentary evidence suggesting the direction by which changes in output composition affected factor utilization. If protection is not "made to measure,"[47] more protected industries should be better able to compete with imports than less protected industries. If so, the production of more protected industries will be encouraged, and evidence of this encouragement should be found in comparisons of the relative role of domestic production in total supply (imports plus production) of more and less protected activities within

Table 6.13 **Total Labor Requirements for Activities Receiving Below-Average and Above-Average Protection in a Commodity Category**

	Number of Activities	Average ERP (Percentage)	Labor Requirements[a] (Man-Hours per Million FCFA of DVA)				Percentage Unskilled[b]
			Man	Sk	Unsk Plus Artisans	Total	
Exportables							
Below average	3	1	43	455	2,197	2,695	81.5
Above average	2	140	67	270	1,823	2,160	84.4
Average[c]	5	35	53	383	2,051	2,488	82.5
Importables requiring protection							
Below average	8	21	63	356	1,115	1,534	73.7
Above average	9	154	60	412	1,237	1,709	72.4
Average	17	84	61	394	1,197	1,652	72.4
DC importables							
Below average	5	17	65	436	1,206	1,707	70.7
Above average	5	85	56	348	966	1,370	70.5
Average[c]	10	45	60	387	1,073	1,520	70.6
LDC importables							
Below average	3	48	68	337	1,198	1,603	74.8
(Excluding petroleum)	(2)	(12)	(83)	(386)	(1,912)	(2,382)	(80.3)
Above average	4	208	57	433	1,329	1,819	73.9
Average[c]	7	139	61	399	1,283	1,743	73.6
(Excluding petroleum)	(6)	(152)	(63)	(421)	(1,468)	(1,951)	(75.3)

Note: Weighted averages using DVA of domestic production as weights except for the ERP column, which uses IVA weights.

[a]Man = management; Sk = skilled; Unsk = unskilled.

[b]Includes artisanal labor.

[c]Averages taken or calculated from tables 6.10 and appendix table 6.A.1.

a commodity category. Alternatively, the statistic T_i should vary inversely with the level of protection. As T_i increases, domestic production falls relative to domestic consumption, and imports supply proportionately more of consumption.

We calculated average T_i statistics for below and above average protected activities in each category, using DVA as weights. These calculations are particularly revealing. For DC importables, the average is 0.448: below and above average protected activities have averages of 0.529 and 0.383, respectively. For LDC importables, the average is 0.178; below and above average protected activities have averages of 0.289 and 0.118, respectively. In each category, more protected importables were more likely to be produced domestically than less protected importables. These results, coupled with the analysis above, lead to the conclusion that Ivorian trade policy exerted a sizable influence upon labor utilization through changing the composition of output.

6.6.3 Priority Firm Status and Capital Market Distortions

Recall that there are two classes of privately owned firms in the Ivory Coast (priority and common-law firms). While both receive concessions under the investment code, those granted to priority firms are larger than those given to common-law firms. Additionally, the negotiations for priority status usually include both tax and tariff (or nontariff) concessions. My purpose here is to examine differences in protection for these two categories of firms to determine if priority firms received greater protection than common-law firms. A second objective is to estimate returns to capital to see if differences exist across commodity categories and between priority and nonpriority firms.

Protection of Priority Firms

In table 6.14 I have assembled a series of data on protection, factor intensities, capacity utilization, and the relative importance of priority-firm production for our three commodity categories.[48] Observe first that priority status was applied equally between exportables and importables (see last line of item 6). However, within the importable category, LDC importables were much more likely to receive priority status than DC importables, reflecting the emphasis of Ivorian import substitution efforts upon finished consumer goods.

Priority firms received greater protection and had higher capital/labor ratios (items 1 to 4) than common-law firms in exportable and LDC importable production.[49] The difference between protection and capital/labor ratios of the two classes of firms was most pronounced within the LDC importable category. In that category there were two competing influences upon labor utilization. Protection encouraged the production of relatively labor-intensive goods (see earlier discussion),

Table 6.14 **Comparison of Priority and Nonpriority Firms by Commodity Category, 1972**

	Exportables	Importables Requiring Protection		
		DC	LDC	All
1. Effective protection (percentage)				
Priority firms	58	40	142	105
Common-law firms	9	51	78	62
2. Nominal protection on output (percentage)				
Priority firms	85	15	22	20
Common-law firms	− 3	21	35	24
3. Nominal protection on traded inputs (percentage)				
Priority firms	− 6	7	6	7
Common-law firms	−11	4	18	10
4. Capital/labor ratios (FCFA/man-hour)				
Priority firms	1,846	1,522	3,824	3,050
Common-law firms	868	1,900	442	1,447
5. Capacity utilization (percentage)				
Priority firms	72	68	85	79
Common-law firms	78	73	82	76
6. Ratio: DVA of priority firm production to DVA of total production (percentage)				
Less protected activities	65	66	76	71
More protected activities	100[a]	64	96	84
All activities	78	65	89	79

Source: Calculated from data in Monson (1978, tables II–D, IV–D, VI–E, VI–F).

Note: Weights for the protection estimates are IVA of domestic production; weights for the capital/labor ratios and capacity utilization estimates are DVA of domestic production.

[a]Rounded to 100 percent; the actual value is 99.7 percent.

while the concessions to capital under the investment code encouraged the utilization of capital-intensive production techniques. The net result appears to be absolute inefficiency, with LDC importables requiring more of both capital and labor than DC importables.

For the DC importable category, common-law firms had higher capital/labor ratios and received greater protection than priority firms. I suspect a certain degree of "made to measure" protection here. Some DC importable activities received forms of natural protection because of transport costs (e.g., cement) or because there were domestic sources of inputs (e.g., rubber). Thus domestic production did not require high levels of protection to compete effectively with imports. When these

two industries (cement and rubber) are eliminated from the estimates, priority firms are more protected and have higher capital/labor ratios than common-law firms.

Returns to Capital

Unfortunately, I did not have adequate data for 1972 to determine if returns to capital differed between priority and common-law firms and to determine if returns to capital differed across activities. Data to investigate these problems were available for 1974 only (RCI Ministère de l'Economie 1976). As a proxy for returns to capital, I calculated the ratio of interest payments plus depreciation plus net profits to equity plus debt. As indicators of differential treatment of taxes and credit facilities, I calculated ratios of (1) profits taxes plus property taxes to gross profits,[50] and (2) interest charges to total debt. The commodity categorization of this data source was more aggregated than that used in my study. I was able to separate HOS activities only into exportables and importables. However, the data allowed me to calculate these ratios for all modern activities, mixed public-private firms with majority governmental control (*sociétés d'économie mixte*), priority firms, and all HOS firms.

My calculations are summarized in table 6.15. The results contradict notions that incentives to capital were equally distributed and returns to capital were equalized among activities in 1974. (An alternative explanation is that capital was not mobile enough to equalize rates of return.)

Table 6.15 **Returns to Capital, Taxes, and Interest Rates, Various Activity Categorizations, 1974**

	Returns to Capital[a]	(Profits Tax + Property Tax)/Gross Profits	Interest[b]/ Debt
HOS exportables	33.7%	5.9%	4.9%
HOS importables requiring protection	13.2	19.7	6.7
All modern activities (NRB, HOS, home goods)	12.2	30.5	3.8
Sociétés d'état[c]	9.6	56.0	3.8
Sociétés d'économie mixte[d]	20.6	5.3	3.3
Priority firms	13.5	17.9	3.8
All manufacturing firms	15.1	30.7	3.3

Source: Various tables in RCI Ministère de l'Economie (1976).

[a](Interest + depreciation + net profits)/(equity + debt).

[b]Interest charges/short- and long-term debt.

[c]Totally publicly owned corporations.

[d]Mixed-ownership firms with majority government equity.

HOS exportables and priority firms paid significantly lower profits and property taxes than all other categories of firms except mixed public-private firms, and returns to capital were highest in exportable activities. Interestingly, returns to capital in priority firms were lower than the average for all manufacturing firms. In part this result reflects the higher overall capital/labor ratio of priority firms (see discussion above).

6.6.4 Other Influences on Protection

Besides priority-firm status and preferential tax treatment, there were a variety of other influences upon protection and factor utilization in 1972. Most important was the extent of foreign and government ownership. The calculations summarized in table 6.16 indicate that foreign equity either received or moved into lines of production receiving greater protection than government or private Ivorian equity (with the exception of exportables). Thus, in addition to the tax provisions of the investment code, greater protection was given foreign equity in an effort to attract foreign direct investment. No pattern was observable between protection and government equity. In some cases it was high because of the "essential" nature of the industry (e.g., fertilizer); in other cases it was low because inputs were heavily taxed (e.g., tobacco). It was only in exportables that government equity systematically raised protection through the subsidization of inputs.

To isolate other less obvious factors influencing protection, I estimated Pearson correlation coefficients between all variables and my indicators of protection (ERP, nominal protection on output and inputs). There

Table 6.16 **Weighted Average Protection by Source of Equity, 1972**

	Exportables	DC Importables	LDC Importables
Effective protection			
Foreign equity	45%	43%	144%
Government equity	53	22	115
Private Ivorian equity	20	36	133
Nominal protection on output			
Foreign equity	2	16	24
Government equity	2	7	21
Private Ivorian equity	3	16	21
Nominal protection on traded inputs			
Foreign equity	−8	7	5
Government equity	−9	4	11
Private Ivorian equity	−6	3	20

Source: Monson (1978, tables IV–B and VI–D).
Note: Weights are IVA of domestic production multiplied by the relative shares of each equity source in production.

were positive relationships of varying degrees of significance between variables representing the percentage of management personnel in an activity's labor force, the percentage of foreign equity in total equity, the scale index and the concentration ratio, on the one hand, and variables representing protection, on the other.[51] The general conclusion from this analysis is that an industry was more likely to enjoy (or require) higher levels of protection: (1) the greater the extent of foreign ownership; (2) the larger the size of the firm; (3) the more concentrated the activity; and (4) the larger the relative role of management in the labor force.

6.6.5 Labor Market Distortions

The principal labor market distortion was the system of minimum wages established for all categories of labor.[52] In 1972 minimum wage legislation appeared to be effective only at the unskilled level. That is, the minimum wage was set above the shadow wage of unskilled labor. In that year, the industrial minimum wage for unskilled labor was FCFA 58.7 per hour. This wage was less than the average for all non-NRB informal activities (FCFA 66.5).[53] However, informal activities were not subject to labor overhead charges such as social insurance (*charges sociales*), which were estimated to be 40 percent of the base wage.[54] When added to the minimum wage, a differential of about 23 percent was introduced between unskilled wages in the modern and informal urban sectors. Table 6.17 gives the applicable minimum wages in 1971 and median wages received in each skill category from the 1971 labor force survey (RCI Ministère du Plan 1973). For all but unskilled labor, the minimum wage appears to be inoperative, since wages actually received were in the upper extremes of the minimum wage range. Note, however, that the average wage for unskilled labor (*manoeuvres*) in general, and migrant Africans in particular, was below the minimum, suggesting some noncompliance with the statutes for migrant Africans. Another explanation of the low average wage is that the minimum wage in the table refers to the industrial sector, while the median wage information includes workers in both modern NRB and industrial activities throughout the country. The agricultural minimum wage was less than that of industry, and other Africans working in agricultural activities depressed their average.

Thus minimum wage legislation apparently distorted employment patterns of unskilled labor and might have had secondary effects upon other labor categories by encouraging substitution of skilled for unskilled labor or through complementarities between skilled labor and capital as capital utilization was encouraged.

If we assume that the minimum wage was 20 percent above the shadow wage for the lowest category (*manoeuvres*) of unskilled labor in 1972,

Table 6.17 **Wages by Skill Level and Nationality, 1971 (Thousand FCFA per Month)**

Skill Category	Median Wage[a]				Minimum Wage[b]
	Ivor	MA	NA	Average	
Management					
Direction	104.5	61.8	191.2	174.6	n.a.
Cadres	105.3	114.9	185.5	165.3	61.4–144.5
Skilled Labor					
Supervisors	57.5	60.1	143.6	73.0	38.8–64.2
White-collar	34.8	34.8	90.1	38.8	22.8–38.9
Blue-collar	26.6	26.0	71.9	26.5	18.0–39.7
Unskilled Labor[c]					
Semiskilled white-collar	19.2	15.3	—	17.0	10.1–17.5
Semiskilled blue-collar	17.8	15.9	—	17.1	12.6–15.8
Unskilled	12.8	8.7	—	9.7	10.1–11.5

Sources: RCI Ministère du Plan (1973), vol. 2, various tables; RCI Ministère du Plan (1972).

[a]Ivor = Ivorians; MA = migrant Africans; NA = non-Africans.

[b]The range given is for the various skill categories within each occupational level for a person with less than three years experience. For *cadres*, the work week is forty-eight hours. There is no minimum wage for the direction category in the private sector.

[c]Data for apprentices were not available.

that the demand for labor had a unitary price elasticity, and that the supply of labor was perfectly elastic, then removal of the minimum wage requirement would have increased modern unskilled employment in all activities by about twenty thousand, or 20 percent over its 1972 level (10 percent increase in total modern employment).

The presumed effect of minimum wages would be largest in exportable production because of its high unskilled labor component. In other activities, the impact would be less significant but still important, since unskilled labor dominated employment in all commodity categories. If we assume the same elasticities as above, unskilled employment would have risen by 10 percent in exportables and by 5.5 percent in importables after a 20 percent decrease in the minimum wage.

6.6.6 Evidence of the Overall Capital-Using Bias of Ivorian Policies

Overall, we have found that Ivorian policy exerted a capital-using bias in 1972. As a final exercise of this section, I attempt to measure crudely the extent of resource misallocation caused by protection of HOS activities. To do this, I asked the following questions: (1) If all resources employed in producing importables in 1972 were transferred frictionlessly to exportable production and employed at the exportable capital/labor ratio, how much additional employment could be generated while maintaining an unchanged exportable capital/labor ratio? and (2) As a

measure of the absolute inefficiency of LDC importable production, how large would be the increase in IVA if resources employed in LDC importables were transferred frictionlessly to DC importable production and employed at the DC importable capital/labor ratio?

Table 6.18 summarizes the data necessary to respond to these questions. Notice that importables employed about twice as much capital as exportables, used 25 percent more labor, and produced 50 percent more IVA. Also notice that LDC importables were absolutely inefficient; they used 70 percent more capital and 50 percent more labor than DC importables, yet produced about 10 percent less IVA.

The transfer of resources from importables to exportables could have released about twice as much capital as needed to absorb the labor released at the exportable capital/labor ratio. About 32.5 million man-hours could have been transferred. These man-hours would have required about FCFA 36.2 million of capital to be employed at the exportable capital/labor ratio of FCFA 1,115 per man-hour. Capital valued at FCFA 17.8 million would have become unemployed. The IVA in exportable production could have risen by 133 percent (FCFA 8,891 million).[55] Alternatively, 50 percent more labor than that released from importable production would have been required to fully employ the capital released from importable production in exportables. If this labor

Table 6.18 **Capital/Labor Ratios, IVA, and Capital and Labor Employed in Production by Commodity Category, 1972**

		Importables Requiring Protection		
	Exportables	DC	LDC	All
1. Capital/labor ratio[a] (FCFA/man-hour)	1,115	1,665	1,661	1,662
2. IVA of production (millions FCFA)	6,687	5,279	4,665	9,944
3. Employment (man-years)	13,528	6,860	10,259	17,119
4. Replacement value of gross investment (millions FCFA)	27,225	20,098	33,862	53,960
5. Capital/labor ratio[b] (millions FCFA per man-year)	2.01	2.93	3.30	3.15

Source: Monson (1978, tables II–B, V–A, VI–A1).

Note: Figures are for modern sector, including HOS exportables and importables requiring protection; NRBs are excluded.

[a]Man-years from row 5 were converted to man-hours by average hours worked per year in each category.

[b]Row 5 = row 4/row 3.

had been forthcoming, the IVA of exportables would have increased by 200 percent. The latter figure represents a one-third increase over the 1972 IVA in importables.

The effects of transferring resources from LDC to DC importables would have been a large increase in IVA and, depending upon which capital/labor ratio (from table 6.18) was used, slightly more or less capital would have been released to maintain the DC importable capital/labor ratio. Using the capital per man-year estimate, FCFA 30,056 million of the FCFA 33,862 million of LDC capital would have been required to employ the LDC labor force of 10,259 in DC importables at the capital per man-year ratio of 2.93. Using the capital per man-hour estimate, FCFA 33,940 million of capital would have been required to absorb the 20.4 million man-hours (10,259 $\times$ 1,987 man-hours per year) released from LDC importable production. The capital deficiency would have been 0.2 percent in that case, and 10,235 man-hours would have been absorbed along with the FCFA 33,862 million of capital. These resources would have increased the IVA of DC importable production by 168 percent, or FCFA 8,894 million (about 90 percent more than that generated in LDC production [FCFA 4,465 million] in 1972). Clearly, resources were misallocated to LDC importable production.[56]

These calculations provide rough orders of magnitude to illustrate the capital-using bias in the Ivorian trade regime in 1972 and the relative inefficiency of LDC importable production. At the very least, changes in Ivorian commercial policy that provided equal treatment of all importables would have substantially increased economic well-being in the Ivory Coast.[57] But a more ambitious policy that placed greater emphasis upon exportable production would have helped absorb the growing numbers of unemployed at a much lower cost than policies aimed at increasing importable production. Trends since 1972 suggest that Ivorian policy is moving in the opposite direction (at least with respect to importables). Not only has there been an increase in tariff protection (with the elimination of reciprocity on EEC imports), but there has been increase in the utilization of quantitative restrictions, with the possible effect of a slower rate of employment growth.

6.7 Summary and Conclusions

Probably the most significant conclusion about the Ivorian trade pattern is that it can be largely explained in the context of the standard trade model. Ivorian export-oriented policies have generally encouraged employment because Ivorian comparative advantage lies in the export of labor-intensive commodities to DCs.

However, some aspects of policy have fostered a certain degree of economic inefficiency and discouraged labor utilization. First, more

labor-intensive exportables were discriminated against by receiving somewhat lower protection than less labor-intensive importables. Second, within the category of importables, greater protection of LDC importables encouraged economic inefficiency, since they required more of both labor and capital per unit of IVA. Third, incentives to capital under the investment code probably favored the utilization of capital-intensive production techniques. Fourth, minimum wage legislation discouraged utilization of unskilled labor but not necessarily other labor skill categories.

The labor coefficients calculated in section 6.5 indicated that all Ivorian exportables used unskilled and artisanal labor more intensively than importables. For modern sector activities, importables were more capital-intensive and skilled-labor-intensive than exportables. The importable capital/labor ratio was about 50 percent greater than that of exportables.

Ivorian commercial policy provided significant protection for all HOS production, with effective protection rates of 35 and 84 percent, respectively, for exportables and importables requiring protection. LDC importables enjoyed higher effective protection (139 percent) than DC importables (45 percent). This pattern of protection generally encouraged resources to move into more protected and less efficient importable lines of production, for, as we saw, domestic production of more protected activities contributed more to total supply than that of less protected activities in each commodity category, and the highly protected LDC importable category appeared to use more of both capital and labor than other trade categories.

Factor market distortions (the investment code and minimum wage statutes) favored capital utilization. In general, I found that priority firms receiving concessions under the investment code had higher levels of protection and larger capital-labor ratios than common-law firms. Priority status was also related to the extent of foreign equity, the size of the firm, and the concentration of the industry. The heavily protected activities were dominated by a small number of large, foreign-owned priority firms that tended to have higher capital and labor requirements than less protected activities.

The minimum wage statutes distorted prices of unskilled labor and may have levered the entire wage structure upward, thus discouraging utilization of all labor categories. This distortion at the unskilled level was significant, since the lowest category of unskilled labor (*manoeuvres*) constituted close to 50 percent of total modern employment in 1972. Under stipulated assumptions, I estimated a total unskilled employment increase of about twenty thousand, or 10 percent of total modern employment (20 percent of unskilled employment) in 1972 if the minimum wage were lowered by 20 percent.

Although Ivorian policies largely exploited the country's comparative advantage in labor-intensive NRB and HOS exports to DCs until 1972, policies appear to have altered since then. Further research, using current data, is now needed to determine if the basis of Ivorian comparative advantage has changed and to analyze the employment effects of the general tightening of Ivorian policies in the mid-1970s. For, if Ivorian comparative advantage remains in labor-intensive production today, as it was in 1972, then current trade and factor market policies will not enhance economic welfare, nor will they provide maximum employment growth. I hope that this study will provide a stimulus for continued research along these lines.

Appendix

Table 6.A.1 Total Labor Requirements by Activity Within Major Trade Categories (Man Hours per Million FCFA of Value Added)

	Per Unit of DVA						
	Modern Sector[a]						
Trade Category and Sector	Man	Sk	Unsk	All Modern	All Artisanal	Grand Total	Grand Total per Unit of IVA
NRB exportables							
Coffee	9	38	99	147	22,197	22,343	12,195
Cocoa	7	33	86	125	16,243	16,368	9,430
Other export agriculture—artisan	5	26	53	83	92,908	92,991	78,456
Other export agriculture—modern	117	613	7,038	7,768	7	7,775	6,560
Other export agriculture—average	70	366	4,104	4,540	39,025	43,565	36,755
Logs—artisan	1	9	21	31	17,088	17,118	17,118
Logs—modern	49	330	2,066	2,445	36	2,481	1,556
Logs—average	43	287	1,790	2,120	2,338	4,458	2,870
NRB importables							
Traditional agriculture—artisan	2	9	22	33	13,097	13,130	13,313
Traditional agriculture—modern	335	643	8,809	9,788	3	9,791	9,928
Traditional agriculture—average	5	17	128	150	12,940	13,090	13,273
Fishing—artisan	1	9	13	23	12,808	12,831	18,681
Fishing—modern	70	229	1,776	2,075	153	2,228	3,244
Fishing—average	46	152	1,159	1,357	4,582	5,939	8,647
HOS exportables							
Canned fruit	55	238	2,879	3,172	7	3,179	3,098
Canned coffee	52	221	350	623	4	627	23,859

Table 6.A.1—*continued*

Trade Category and Sector	Per Unit of DVA						
	Modern Sector[a]						
	Man	Sk	Unsk	All Modern	All Artisanal	Grand Total	Grand Total per Unit of IVA
Processed cocoa	15	73	277	365	6	371	996
Edible oils—artisan	1	2	5	8	14,667	14,675	23,159
Edible oils—modern	71	281	2,103	2,455	63	2,518	4,008
Edible oils—average	66	264	1,973	2,303	969	3,272	5,205
Lumber	53	730	2,875	3,658	9	3,667	4,052
HOS competitive importables							
Bakeries—artisan	1	4	8	13	7,251	7,264	5,959
Bakeries—modern	92	552	2,098	2,742	22	2,764	2,267
Bakeries—average	73	437	1,662	2,172	1,533	3,705	3,038
Wood products	108	719	3,653	4,480	11	4,491	9,657
Paper	60	212	1,762	2,034	6	2,040	1,517
Milled products—artisan	15	38	77	130	3,958	4,088	3,508
Milled products—modern	17	92	218	326	—	326	279
Milled products—average	15	41	85	141	3,732	3,873	3,321
Processed food—artisan	2	11	28	41	8,011	8,052	6,599
Processed food—modern	54	14	3,245	3,313	93	3,406	2,785
Processed food —average	16	12	906	934	5,850	6,784	5,556
Beverages	58	390	920	1,368	13	1,381	607
HOS importables competing with DC imports							
Paint	61	284	551	896	8	904	2,315
Soap	51	265	668	984	29	1,013	1,871

Table 6.A.1—*continued*

Trade Category and Sector	Per Unit of DVA						Grand Total per Unit of IVA
	Modern Sector[a]						
	Man	Sk	Unsk	All Modern	All Artisanal	Grand Total	
Plastics	90	317	1,659	2,066	9	2,075	3,681
Other chemicals	54	302	994	1,350	13	1,363	2,565
Rubber	59	383	4,181	4,623	8	4,631	4,043
Cement	64	263	1,187	1,514	14	1,528	1,633
Automobiles	39	426	665	1,130	8	1,138	1,425
Other vehicles	42	558	878	1,478	18	1,496	1,784
Metalwork—artisan	7	17	36	60	25,923	25,983	29,758
Metalwork—modern	44	444	838	1,376	6	1,382	3,157
Metalwork—average	31	302	603	936	8,662	9,598	20,708
Printing, miscellaneous—artisan	5	18	39	62	6,040	6,102	8,736
Printing, miscellaneous—modern	109	605	925	1,639	83	1,722	2,467
Printing, miscellaneous—average	43	235	366	644	3,842	4,486	6,423
HOS importables competing with LDC imports							
Flour	29	136	423	588	1	589	28,440
Tobacco	48	186	789	1,023	9	1,032	1,001
Textiles	55	472	1,368	1,896	13	1,908	4,776
Clothing	107	522	2,665	3,294	8	3,302	40,608
Shoes—artisan	9	27	55	91	8,863	8,954	30,392
Shoes—modern	122	459	1,979	2,560	9	2,568	8,675
Shoes—average	88	328	1,395	1,812	2,691	4,503	15,231
Petroleum	47	271	238	556	7	563	1,071
Fertilizer	54	369	1,241	1,664	9	1,673	6,148

Table 6.A.1—*continued*

Trade Category and Sector	Per Unit of DVA						Grand Total per Unit of IVA
	Modern Sector[a]						
	Man	Sk	Unsk	All Modern	All Artisanal	Grand Total	
Noncompeting importables							
Minerals	50	459	1,243	1,753	41	1,794	1,542
Basic chemicals	68	74	1,518	1,660	24	1,684	2,245
Machinery	108	567	891	1,556	10	1,576	5,283
Home goods							
Artisanal wood	—	2	5	7	19,845	19,852	28,984
Artisanal textiles	1	12	26	39	14,952	14,991	14,991
Auto repair	100	558	770	1,428	1,943	3,371	3,085
Water/energy	68	576	294	937	20	957	899
Construction	44	436	1,395	1,875	4,732	6,601	5,941
Transportation	57	463	1,095	1,615	22	1,637	1,573
Postal system	75	512	817	1,404	24	1,429	1,412
Rentals	11	62	122	195	60	256	254
Services	173	424	1,300	1,898	167	2,065	2,011
Traditional commerce	13	83	191	287	3,713	4,000	3,954
Local commerce	202	522	1,061	1,785	30	1,815	1,772
Export commerce	89	327	902	1,318	7	1,325	1,284

Source: Monson (1978, data appendix).
Note: Labor requirements include direct plus indirect labor in home goods.
[a]Man = management; Sk = skilled; Unsk = unskilled.

Notes

1. For a discussion of the flow of African migrants, see Stryker (1974, pp. 16–21). The undeveloped educational structure is illustrated by the following data. In 1961 there were only 11,000 secondary school students and 850 university students (studying abroad) in an age 15–24 cohort of about 700,000. In 1961 only 270 students received the equivalent of the American high school diploma (*baccalaurèat*). Moreover, in the decade before independence, only 965 students graduated from secondary school (République de France 1970).

2. The author contributed to a World Bank research project on incentives in West Africa directed by Bela Balassa. Some of the protection estimates used in this study are borrowed directly or adapted from that project. See Pursell and Monson (n.d.) for details of the project and its estimates.

3. See Bastiaan A. den Tuinder (1978) for a complete review of the Ivorian growth experience.

4. Use of the consumer price index for African families as a deflator (as noted in table 6.1) may overstate the real rise in GDP if prices of services rise more rapidly than other prices, and if services weigh more heavily in consumer expenditures than in GDP.

5. The relatively high population growth rate of 4 percent implied by the difference between GDP and GDP per capita is due to a high reproduction rate coupled with high rates of migration from neighboring countries. See discussion in section 6.2 for details.

6. "In the Ivory Coast, as in all developing countries, many economic activities are carried on outside the scope of laws and regulations governing such matters as the establishment of shops and workshops, labor-management relations, taxation and supervision of technical skills and of product quality. In general, these economic activities are included in what is commonly known as the 'traditional' sector, but which in current ILO practice is called the 'informal' sector" (Joshi, Lubell, and Mouly 1975, p. 49). I follow the Ivorian practice of calling these activities "artisanal."

7. Taxation of NRB exports is mainly for revenue purposes. Taxes on the three major exports (coffee, cocoa, logs) account for about 20 percent of total direct and indirect tax revenue.

8. In 1972, nontariff barriers protected about 20–25 percent of modern manufacturing output. More recently there appears to be greater use of quotas, especially in the textile industry. See section 6.3 for details.

9. Other members are Benin (formerly Dahomey), Niger, Senegal, Togo, and Upper Volta.

10. The two most important are the newly formed (1974) West African Economic Community (CEAO) consisting of the Ivory Coast, Senegal, Mali, Upper Volta, and Niger, and the broader Economic Community of West African States (ECOWAS), which encompasses all West African countries.

11. As examples of these changes in the composition of imports, note that in the period 1972 to 1976 import volumes of rice, fruit, vegetables, clothing, and sugar fell, while volumes of canned food, tobacco, textiles, fertilizer, and beverages rose by less than 50 percent, much less than 160 percent growth in total import volume for the same period. It should also be noted that the large increase and high growth rate in the "other imports" category in table 6.2 is a statistical discrepancy caused by difficulty in comparing the 1960 data with those of other years. Growth rates of imports in categories besides "other" are probably under-

stated, since some imports categorized as "other" in 1972 and 1976 were categorized incorrectly in other categories of table 6.2 in 1960.

12. Crude oil imports (not included in table 6.2) rose from 5.6 to 11.5 percent of import expenditures from 1972 to 1976. The volume of crude oil imports rose by 37 percent, while price rose by 310 percent.

13. Imports and import duties as given in the text include crude oil and clinker, both of which are subject to special taxation. The percentages mentioned refer to averages for the period 1968–71.

14. The two duties are the *droit fiscal d'entrée* and the *droit de douane*. EEC source imports were subject to only the *droit de douane* before June 1975, effectively lowering their entry duty to one-half or less of that borne by imports from other sources.

15. When first implemented, this regulation caused some bottlenecks in the provision of imported inputs needed for domestic production. It has since been relaxed and now applies generally only to noncompeting imports.

16. Author's estimate, based upon data in A. Achio (1970) and Bangoura Moktar (1973).

17. A national census was conducted in 1975. Unfortunately, a detailed nationality breakdown was not available at the time this chapter was written.

18. The management category is the sum of the Ivorian classifications *direction* (management) and *cadres-techniciens* (occupations requiring postsecondary specialized training, for example, computer programmers, accountants, engineers). The skilled category consists of shop supervisors (*maîtrises*), skilled blue- and white-collar workers (*ouvriers qualifiés* and *employés qualifiés*). The unskilled category includes all other workers—semiskilled white- and blue-collar labor (*employés non-qualifiés* and *ouvriers specialisés*), unskilled labor (*manoeuvres*), and apprentices (*apprentis*).

19. For example, in 1976 the nominal unskilled industrial wage (SMIG, or *salaire minimum industriel garanti*) was FCFA 115 in the Ivory Coast, FCFA 47 in Upper Volta, FCFA 48 in Niger, and FCFA 70 in Mali.

20. There are wide differences in wages received by the different nationality groups in the Ivory Coast. However, skill differences are the principal causes of these differentials. For 1972 I estimated average yearly earnings per worker in the modern sector to be FCFA 3.1 million for expatriates, FCFA 294 thousand for Ivorians, and FCFA 232 thousand for migrant Africans. Given each group's predominance in a particular skill category, it is probable that the differences in average wages primarily reflect skill differences.

21. Namely, deflating annual gross investment by the building materials price index and annual increases in production by the consumer price index.

22. Detailed data and a description of the categorization are included in the data appendix to this chapter (Monson 1978), available for the cost of reproduction from the National Bureau of Economic Research.

23. Two HOS activities (petroleum refining and flour milling) had negative T_is but were classified as importables. Both had high levels of protection (see discussion, section 6.4, for details) and probably would not be exported given less protection.

24. This point is arguable for canned fruits and edible oils. Fresh pineapples exported for immediate consumption are of a higher quality than pineapples used for canning. It is possible that the canning pineapples are exportable only if canned. If so, the activity should be treated as NRB production. I reject this view. For the edible oils category, exports are predominantly semirefined palm oil. The

degree of processing is limited. However, since the unprocessed palm kernels could be exported, the processing is properly regarded as an HOS activity.

25. In separating DC and LDC importables, I first calculated the average percentage of imports in these classifications from DC and LDC sources (87.6 and 12.4 percent, respectively), then considered LDC imports to be significant wherever they were greater than 12.4 percent. Otherwise they were classified as DC-competing importables.

26. Current protection is somewhat higher, since EEC imports became subject to both entry duties in 1975.

27. One additional aspect of the tariff code is the existence of officially fixed prices (*valeurs mercuriales*) upon which the tariff may be calculated. Their original use was to avoid underinvoicing and to attack supposed cases of dumping. They can be used to supply additional protection if set above the border price. In 1973 they applied to approximately 10 to 15 percent of all imports and to about 30 percent of textile and clothing imports.

28. Special agreements were in effect in 1973 that provided for duty exemption of certain products from Niger, Senegal, and Upper Volta. Since the dissolution of the UDEAO and formation of the customs union (CEAO) in 1974, preferences for imports from member West African states have been negotiated product by product. There no longer is an across-the-board uniform reduction on all imports from these countries.

29. Products are prohibited because of health reasons or state security or because productive capacity exists at home (e.g., cement, flour, flashlight batteries). The restricted and liberated lists include products for which domestic productive capacity either does not exist or is insufficient to supply domestic needs; items on these two lists change depending upon needs of the economy and availability of domestic substitutes. See Olopoenia (1975) for further discussion.

30. In early 1976 the taxes on coffee and cocoa were increased but, at the higher prices then prevailing, were equivalent to about 14 percent of their 1976 average f.o.b. price.

31. Converted at the exchange rate FCFA 250 = U.S. $1. The accounting year is from mid-October to mid-October; 1973–74 refers to October 1973 to October 1974.

32. The estimates also include any additional protection provided, as described in note 27, through the use of officially fixed prices as opposed to actual border prices for purposes of calculating import duties on certain goods. Direct price comparisons of imports with local production were used to estimate nominal protection for most categories of HOS goods. IVA weights were used to calculate averages by commodity category. DVA weights are inappropriate, since they would tend to inflate the average ERP estimates. That is, whenever the ERP coefficients for all activities within a category are low, the differences between DVA and IVA are small and use of DVA weights will not change the weighted averages appreciably. However, if one or more activities have high ERPs their DVAs are large relative to their IVAs, and using DVA weights will inflate the average for the category. For example, the IVA and DVA production-weighted averages for HOS exportables are 35 and 458 percent, respectively. The extreme ERP for canned coffee (6,111 percent) dominates the DVA weighted average; when IVA weights are used, the canned coffee contribution to the category's IVA weights are used, the canned coffee contribution to the category's IVA is only 0.3 percent. For details of the estimates for each activity see the data appendix to this study (Monson 1978).

33. By way of comparison with other LDCs, Balassa (1971, p. 54) reports ERPs for Brazil, Chile, and Pakistan of at least 100 percent for most commodity categories. The average ERP for all HOS activities in the Ivory Coast is about 30 percent.

34. Canned coffee producers obtain green coffee beans at the world market price minus the full exit tax and sell a large portion of their output domestically or in CEAO countries providing Ivorian production with high levels of protection (e.g., the Ivory Coast supplies 98 percent of the market in Senegal, for which the tariff is 30 percent). Subsidizing of the coffee input reduces IVA to a small value relative to DVA and causes the extreme ERP estimate. Lumber and processed cocoa receive indirect subsidies, since lumber exports are subject to only a small portion of the exit tax paid on log exports, and processed cocoa is subject to the exit tax only on cocoa pod inputs considered to be of an exportable quality (about 50 percent of its cocoa pod inputs).

35. In general, priority firms are more protected than nonpriority firms (see discussion in section 6.4). By way of comparison, priority firms produce 86 percent of production in HOS importable activities requiring protection.

36. I multiplied employment data for the available year by the ratio of 1972 wages to those of that year (adjusted for wage increases) to obtain my estimate of 1972 employment. The implicit assumption was that the skill composition of the labor force was unchanged over the period. See Monson (1978, pp. 68–70) for details.

37. Traditional foodstuffs (yams, manioc) for self-consumption are usually interplanted on cocoa and coffee plantations. Stryker (1974, p. 44) estimates that, on average, 32 percent of the year is spent on cocoa and coffee production by heads of families and family workers. The rest of the year they are either unemployed or tending crops for self-consumption or engaged in seasonal wage employment elsewhere.

38. From 1965 to 1972, 200,000 hectares were added to cocoa and coffee production while about 250,000 hectares were added to oil palm, rubber, cotton, coconut, pineapple and other plantation agriculture. Note also that exploitable forest acreage fell from about 9 million hectares in 1960 to 5.5 million hectares in 1973.

39. Estimates using trade weights were similar to those using production weights. Most estimates did not change markedly, because the level of protection was low and because there were few factor market distortions. When differences occurred, the change generally was in the expected direction: trade-weighted labor coefficients increased for exportables and LDC importables and decreased for DC importables. The only changes greater than 10 percent were in the coefficients for competitive importables and LDCs importables. For the former, imports are more heavily weighted toward less labor-intensive activities than is domestic production. For LDC importables, weighting by imports indicated higher labor coefficients than weighting by current production.

40. It was thought that including flour and clothing, both of which have high ERPs and therefore high capital and labor requirements per unit of IVA, might make the averages for LDC importables unrepresentative for the industries concerned. However, similar calculations excluding these activities yielded approximately the same results.

41. For example, the production-weighted net labor content for all activities is 11,533 (table 6.11 exportable production) minus 10,272 (table 6.11, importable production).

42. Generally the trade weights (as compared with production weights) increased the net labor content of trade, since most trade is with DCs whose com-

parative advantage is in more capital-intensive goods. The lower net labor content of trade using production weights indicates that domestic production was more heavily weighted with LDC importables than was trade.

43. Actually, only HOS exportables and DC and LDC importables were considered. Competitive HOS importables were excluded because their natural protection did not make them easily susceptible to analysis. I should also note in passing that NRB exportables had higher labor requirements than NRB importables. This was true on average (19,993 versus 12,687 man-hours per million FCFA of DVA) and for each industry except logging, where most production was carried out by the modern sector.

44. The lack of significant results in the correlation analysis probably is due to faults in estimating capital stocks used to obtain capital/labor ratios. To obtain values of the capital stock, I adjusted gross investment estimates for a sample of firms in each activity, using the Abidjan building materials price index to deflate construction costs and the industrial equipment price index for France to deflate equipment costs. For details see Monson (1978, section 6).

45. There are problems related to degrees of freedom associated with both procedures. We are dealing with a limited number of activities in each category (five exportables, ten DC importables, and seven LDC importables). It is unrealistic to expect much by way of systematic behavior with these small samples. Furthermore, I could not combine categories, since I expected the relationships among labor and capital coefficients, capital/labor ratios, and protection for LDC importables to be different from those for exportables and DC importables. For example, for LDC and DC importables, I anticipated a negative and a positive correlation, respectively, between the capital/labor ratio and effective protection.

46. Factor proportions in refining may not have any relationship to the location of a refinery in the Ivory Coast that serves the domestic market and Upper Volta and Mali. Availability of NRB inputs and high costs of transportation may be the determining factors. Production is highly skilled labor- and capital-intensive (FCFA 4.8 million of capital per million FCFA of DVA, while only 44 percent of its labor force is unskilled labor).

47. For a discussion of the "made-to-measure" concept, see Corden (1974, chap. 5).

48. The capacity-utilization data are poor. They refer to the ratio of actual to potential output per shift. They do not account for variations in the number of shifts worked per day. The definition of potential output is also ambiguous. The capital data used in the capital/labor ratios are also open to question. They refer to the replacement value (1972 prices) of gross investment for a sample of firms in the various activities. Replacement value was obtained by separating gross investment into its components (construction and equipment), then identifying the year in which investment occurred. Finally, these values were deflated by appropriate construction and equipment price indexes. These estimates are questionable for a variety of reasons. They should be interpreted as giving relative, not absolute, magnitudes.

49. Priority firms in the competitive importable category also had higher capital/labor ratios and received greater protection than common-law firms.

50. Profits taxes and property taxes are the major subjects of tax concessions under the investment code.

51. For example, the Pearson correlation coefficient between the management personnel variable and ERP was .526, that between the scale index and ERP was .267, that between the concentration index and ERP was .345, and that between the foreign equity variable and nominal protection on output was .344.

52. The Ivory Coast's heavy reliance upon foreign labor introduces the possibility of a second distortion, namely wage discrimination between expatriates and Africans. Using regression analysis, it was found that human and physical capital characteristics explained about 70 percent of the variation in each nationality's wage. These results suggest that economic factors were the primary cause of the wide wage differentials observed between Africans and expatriates and that labor markets were not heavily distorted. However, I take an iconoclastic view and suggest that further research on this topic is warranted. Our data are not strong enough to permit a definitive conclusion.

53. Calculated from Monson (1978, table V-A2), using employment weights.

54. RCI, Bureau de Développement Industriel (1974). More recent estimates place these charges at about 45 percent (Ministère du Plan, 1976).

55. Using the capital per man-year estimates, IVA in exportables would rise by 126 percent (FCFA 82,462 million), and 40 percent of capital formerly employed in importables would become unemployed.

56. Using the capital per man-year estimate, FCFA 30,056 million of capital would be required to employ the 10,259 men. The IVA of DC importable production would rise by 150 percent (FCFA 7,895), which represents about a 70 percent increase over the IVA of LDC production.

57. This analysis is intended primarily to illustrate the absolute inefficiency of LDC importable production. Hal B. Lary has suggested (correctly, in my opinion) that caution be exercised in extending my results to mean that the Ivory Coast should indiscriminately encourage resources to shift from LDC to DC importable production. Ivorian production of DC importables probably differs in nature from actual DC imports to a greater extent than is apparent in this study because of the level of aggregation used here. For example, auto production in the Ivory Coast consists of relatively labor-intensive assembly operations that differ from the capital-intensive production of autos (including components) in DCs. Our analysis indicates that the Ivory Coast could benefit by shifting resources into the production of DC importables that are relatively labor-intensive. It is not to be interpreted as meaning that the Ivory Coast should encourage capital-intensive DC importable production.

References

Achio, A. 1970. Le problème du chomage en Côte d'Ivoire. Ministère du Plan. Mimeographed.

Balassa, Bela. 1971. *The structure of protection in developing countries.* Baltimore: Johns Hopkins University Press.

Banque Centrale des Etats de l'Afrique de l'Ouest (BCEAO). Various years. Indicateurs économiques—Côte d'Ivoire. In *Notes d'Information et statistiques.* Paris: BCEAO.

———. 1973. Le bois en Côte d'Ivoire. *L'Economie Ouest Africaine,* no. 206 (May). Paris: BCEAO.

Berg, Elliot J. 1971. Structural transformation versus gradualism: Recent economic development in Ghana and the Ivory Coast. In *Ghana and the Ivory Coast: Perspectives on modernization,* ed. Philip Foster

and Aristide R. Zolberg, pp. 117–230. Chicago: University of Chicago Press.

Chambre d'Industrie de Côte d'Ivoire. Various years. *Principales industries installées en Côte d'Ivoire au 1er janvier.* Abidjan.

Corden, W. M. 1974. *Trade policy and economic welfare.* New York: Oxford University Press.

den Tuinder, Bastiaan A. 1978. *Ivory Coast: The challenge of success.* Baltimore: Johns Hopkins University Press.

Elliott, Howard J. C. 1974. Animation rurale and encadrement technique in the Ivory Coast. CRED Discussion Paper no. 40, Center for Research on Economic Development, University of Michigan, Ann Arbor. Mimeographed.

International Bank for Reconstruction and Development. 1977. *World debt tables—supplements: External public debt of LDCs.* September. Washington, D.C.: IBRD.

International Monetary Fund. Various years. *International financial statistics.* Washington, D.C.: IMF.

———. 1970. *Surveys of African economies.* Vol. 3. Washington, D.C.: IMF.

Joshi, Heather; Lubell, Harold; and Mouly, Jean. 1976. *Abidjan: Urban development and employment in the Ivory Coast.* Geneva: International Labour Office.

Krueger, Anne O. 1977. *Growth, distortions and patterns of trade among many countries.* Princeton Studies in International Finance no. 40: Princeton: Princeton University.

Moktar, Bangoura. 1973. Population et développement économique: Un exemple—La Côte d'Ivoire. Paris: OECD Development Center. Mimeographed.

Monson, Terry D. 1978. Ivory Coast—Data appendix. NBER project on trade regimes and employment in LDCs (available upon request from the NBER for cost of reproduction). New York: National Bureau of Economic Research.

Olopoenia, R. A. 1975. The domestic resource cost of foreign exchange in the manufacturing sectors of the Ivory Coast: 1960–1970. Ph.D. diss., University of Michigan.

Pursell, Garry, and Monson, Terry D. N.d. Incentives in the Ivory Coast. In *Incentives in West Africa,* ed. Bela Balassa. Baltimore: Johns Hopkins University Press. Forthcoming.

République de Côte d'Ivoire. Bureau de Développement Industriel. 1974. Couts des facteurs en Côte d'Ivoire. Abidjan.

République de Côte d'Ivoire. Ministère de l'Economie et des Finances. Various years. *Statistiques du commerce exterieur de la Côte d'Ivoire en* [various years]. Abidjan.

———. 1976. *Centrale de bilans, 1974.* Abidjan.

République de Côte d'Ivoire. Ministère du Plan. 1972. *Rémunerations: Traitements et salaires en Côte d'Ivoire.* Abidjan.

———. 1973. *Le secteur privé et para-public en Côte d'Ivoire 1971, resultats de l'enquête main d'oeuvre.* 4 vols. Abidjan.

———. 1976. *La Côte d'Ivoire en chiffres.* Abidjan.

République de France. Secretariat d'Etat pour les Affaires Etrangères. 1970. *Structures et statistiques de l'ensignement pour 14 états africaines et malagaches.* Vol. 1. *Tableaux d'ensemble par état, 1951–1970.* Paris.

Stryker, J. Dirck. 1974. Exports and growth in the Ivory Coast. In *Commodity exports and African economic development,* ed. Scott R. Pearson and John Cownie. Lexington, Mass.: Lexington Books.