



<https://theses.gla.ac.uk/>

Theses Digitisation:

<https://www.gla.ac.uk/myglasgow/research/enlighten/theses/digitisation/>

This is a digitised version of the original print thesis.

Copyright and moral rights for this work are retained by the author

A copy can be downloaded for personal non-commercial research or study,
without prior permission or charge

This work cannot be reproduced or quoted extensively from without first
obtaining permission in writing from the author

The content must not be changed in any way or sold commercially in any
format or medium without the formal permission of the author

When referring to this work, full bibliographic details including the author,
title, awarding institution and date of the thesis must be given

Enlighten: Theses

<https://theses.gla.ac.uk/>
research-enlighten@glasgow.ac.uk

**HYDROCARBONS, RENT AND THE ALGERIAN
GROWTH STRATEGY: A CRITICAL APPRAISAL OF
THE PROCESS OF BUILDING AN
"INDEPENDENT AND NATIONAL ECONOMY"**

RACHID BENDIB

Submitted in fulfilment of the requirements for the
degree of Doctor of Philosophy
Department of Political Economy
University of Glasgow

June 1988

ProQuest Number: 10987034

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



ProQuest 10987034

Published by ProQuest LLC (2018). Copyright of the Dissertation is held by the Author.

All rights reserved.

This work is protected against unauthorized copying under Title 17, United States Code
Microform Edition © ProQuest LLC.

ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 – 1346

DEDICATED TO THE MEMORY OF
MY LATE FATHER

MOHAMMED EL-MOKHTAR

CONTENTS

| | Page No. |
|--|-----------|
| ACKNOWLEDGEMENTS | i |
| FOREWORD | ii |
| LIST OF TABLES AND LIST OF APPENDICES | iii |
| SUMMARY | vii |
| INTRODUCTION | 1 |
| PART A. HYDROCARBON RESOURCES AND DEVELOPMENT | |
| Chapter I: Oil price, rent and development | 8 |
| 1. On the pricing of crude oil, the "conventional approach" | 9 |
| 2. On the modelling of OPEC behaviour | 17 |
| 3. The price of oil and the distribution of the oil rent | 24 |
| - differential rent | 25 |
| - absolute rent | 27 |
| - oil rent within the oil sphere | 30 |
| 4. The impact of a "resource boom" on a domestic economy | 37 |
| 5. Theoretical aspect of the Algerian social project | 46 |
| 5.1 On the introversion of an extraverted economy | 47 |
| 5.2. Growth through implementation of industrialising industries | 50 |
| Notes | 56 |
| Chapter II: Colonial background, oil rent and the AGS | 60 |
| 1. The implantation of the colonial economy | 61 |
| 1.1. The destruction of the pre-capitalist forms of production | 63 |
| 1.2. The development of agrarian capitalism | 67 |
| 1.3. The limits to development of agrarian capitalism | 75 |
| 1.4. The "Plan de Constantine" | 78 |
| 1.5. On class differentiation | 85 |

| | | |
|--|--|---------|
| 2 | Oil rent and the Algerian growth strategy. | 89 |
| 2.1 | The decline of post-independence agricultural sector | 90 |
| 2.2. | Industrialising industries and the internal conditions | 100 |
| 2.3. | The Algerian growth strategy in historical perspective | 105 |
| | Notes | 113 |
| Chapter III: The hydrocarbon industry within the domestic economy | | 118 |
| 1. | The hydrocarbon industry productive base | 119 |
| 2. | The motivating function of the hydrocarbon industry | 126 |
| 2.1. | The price policy of the refined products | 126 |
| 2.2. | The domestic consumption of energy products | 130 |
| 2.3. | On the production and consumption of petrochemicals | 133 |
| 2.4. | Sonatrach policy and the domestic market | 139 |
| 3. | Hydrocarbon industry and the financing function | 142 |
| 3.1. | The development of the hydrocarbon industry | 143 |
| 3.2. | The financing function | 147 |
| 3.3. | The impact of international relations | 152 |
| | Notes | 157 |
| PART B. THE HYDROCARBON INDUSTRY AND THE EXPORT MARKET | | |
| Chapter IV: The Algerian-French relationship | | 160 |
| 1 | From the Sahara oil code to the Evian Accords | 161 |
| 2. | The 1965 Agreement | 166 |
| 3. | The nationalisation (1971) of the hydrocarbon industry | 171 |
| | Notes | 177 |
| Chapter V: OPEC struggle and the localisation of the oil rent | | 179 |
| 1. | The oil industry before 1970 | 180 |
| 2. | The emergence of OPEC into the oil industry | 190 |
| 3. | The energy crisis of the 1970s | 193 |
| 4. | The 1980s decline of the price of crude oil | 203 |
| | Notes | 209 |

| | |
|---|-----|
| Chapter VI: The international gas industry | 212 |
| 1. The gas material base | 213 |
| 2. On the peculiarities of the gas industry | 216 |
| 3. On the magnitude of the gas rent | 221 |
| 4. The Algerian gas option | 227 |
| 4.1. The Valhyd plan | 227 |
| Notes | 240 |

PART C. OIL RENT AND AUTONOMOUS ACCUMULATION PROCESS

| | |
|---|-----|
| Chapter VII: The oil rent and the agricultural sector stagnation | 242 |
|---|-----|

| | |
|--|-----|
| 1. The "1971 agrarian revolution", causes and objectives | 243 |
| 2. The performances of the agricultural sector | 248 |
| 3. The crisis of agriculture and the peasantry strategy | 253 |
| 4. The agricultural sector crisis and the oil rent | 258 |
| Notes | 265 |

| | |
|---|-----|
| Chapter VIII: Industrialisation and the oil rent | 267 |
|---|-----|

| | |
|---|-----|
| 1. On the implementation of the industrial productive base | 268 |
| 2. The Algerian growth strategy and the integration of the economy | 275 |
| 3. Industrialising industries, oil rent and the Algerian experience | 281 |
| 4. Internationalisation of capital and the Algerian growth strategy | 290 |
| Notes | 299 |

| | |
|--|-----|
| Chapter IX: On the Algerian State's social project(s) | 300 |
|--|-----|

| | |
|---|-----|
| 1. On the emergence of the Algerian leadership | 300 |
| 2. Development ideology and the rentier state | 306 |
| 3. Rent reduction and the "new" growth strategy | 314 |
| Notes | 324 |

| | |
|-------------------|-----|
| CONCLUSION | 326 |
|-------------------|-----|

| | |
|---------------------|-----|
| BIBLIOGRAPHY | 332 |
|---------------------|-----|

| | |
|-------------------|--|
| APPENDICES | |
|-------------------|--|

ACKNOWLEDGEMENTS

The writing of this dissertation benefited greatly from comments and advice offered by my two supervisors, Mr P. O'Brien and Dr C. Kay. Their sharp criticism went to the heart of the theoretical and practical issues dealt with in this study. A great debt is owed to both of them for having supervised the process of organising my various ideas into their present form.

I would also like to express my gratitude to Professor D. Vines, the Head of the Department, without whom this study might never have reached the stage of a Ph.D. thesis.

FOREWORD

This work is a study of the Algerian growth strategy between 1962 and 1980. Central to the analysis, is the Marxian concept of rent. The process of growth is dealt with in terms of the oil rent and its appropriation by the Algerian state.

Here the growth strategy is understood, not as a neutral development of the forces of production in a social and political vacuum, but as the materialisation of open or hidden struggles among various social groups, each group aiming at imposing its own social project.

The approach developed emphasises, therefore, what is argued to be the decisive and fundamental force of change of any social formation: the class struggle in its internal as well as international dimensions.

LIST OF TABLES

- I.1 World consumption of energy
- I.2 Estimated energy production costs
- I.3 Cost breakdown of a barrel of average oil sold to French consumers (1973)
- II.1 Land ownership (1930)
- II.2 Output and export of Algerian wine (1919 to 1960)
- II.3 Rate of taxation in Algeria and in France (after 1918)
- II.4 Export of Algerian cereals (1855-1947)
- II.5 Cereal deficit in Algeria (1892-1946)
- II.6 Structure of anticipated investment in the plan de Constantine
- II.7 Output of wine (1954-1962)
- II.8 Industrial output (1954-1962)
- II.9 Origin of the financing of investment (1954-1961)
- II.10 Loans to the agrarian bourgeoisie in 1954
- II.11 Social structure of the Algerian agricultural population (1930-1960)
- II.12 Structure of the Algerian labour force (1954)
- II.13 Employment figures in the self-managed sector (1964-1970)
- II.14 Structure of land ownership in the private sector, North-Algeria, 1964
- II.15 Equipment loans to the private sector (1966-1971)
- II.16 Algeria's trade balance in foodstuff (1966-1973)
- II.17 Algerian GDP (1968-1983)
- II.18 Algeria's balance of trade (1958-1984)
- II.19 Hydrocarbon resources in public gross accumulation (1963-1980)
- III.1 Domestic price reductions after nationalisation (1968)

- III.2 Energy products, prices and taxation
- III.3 Trend of average prices in the domestic market (1974-1978)
- III.4 Domestic energy consumption (1965-1980)
- III.5 Domestic energy consumption structure (1965-1980)
- III.6 Domestic output and import of fertilisers (1970-1979)
- III.7 Ratio of actual output to installed capacity, petrochemical industry (1972-1979)
- III.8 Losses due to low prices (1979)
- III.9 Import of foodstuff and export of hydrocarbons (1963-1980)
- III.10 Efficiency of capital and industrial output per head (1966-1977)
- III.11 Planned investment (total and in industry) (1963-1977)
- III.12 Industrial investment (1967-1980)
- III.13 Ratio of debt service to exports (1967-1980)
- III.14 Balance sheet of the hydrocarbon industry (1974-1978)
- III.15 Hydrocarbon output (1967-1978)
- III.16 Idle capacity in hydrocarbon industry (1967-1978)
- IV.1 Posted and reference prices in 1965
- IV.2 Payment per barrel (selected countries) (1964-1970)
- IV.3 Alternative earnings of the Algerian state
- V.1 Percentage market shares of international oil companies in the world market (1950-1972)
- V.2 Major oil companies' profits (1963-1969)
- V.3 Cost breakdown of an average barrel of oil sold to French consumers (1973-1974)
- V.4 Net profits of the major oil companies (1972-1974)
- V.5 US 1985 energy consumption forecasts
- V.6 Evolution of the marker crude price (1973-1978)
- V.7 OPEC current accounts (1973-1978)

- V.8 OPEC terms of trade base 100, 1974 (1974-1978)
- V.9 OPEC revenues (1974-1980)
- V.10 Early 1981 official price cuts (selected countries)
- V.11 World crude oil output (1970-1982)
- V.12 OPEC estimated oil exports and revenues (1981-1984)
- VI.1 World gas reserves (January 1981)
- VI.2 Gas, gross output and marketed output (1950-1980)
- VI.3 Illustrative infrastructure costs for natural gas trade (1982)
- VI.4 LNG complexes (on stream and planned)
- VI.5 Algerian export of LNG (1978-1985)
- VII.1 Structure of the agricultural private sector (1971)
- VII.2 Redistribution of land under the agrarian revolution (1973-1980)
- VII.3 Agricultural output (1963-1980)
- VII.4 Algerian international trade in agricultural products (1963-1980)
- VII.5 Evolution of the daily minimum wage in agriculture and industry (1961-1980)
- VIII.1 Types of contracts with foreign firms (1967-77)
- VIII.2 Estimation of the contribution of domestic output to new industrial realisations (1978)
- VIII.3 Industrial investment spending (planned and actual) (1967-1977)
- VIII.4 Gross output, import and export of industrial branches (1969-1979)
- VIII.5 Delays in the completion of projects engaged in 1973
- VIII.6 Ratio of actual output to installed capacity (1978)
- VIII.7 Private foreign direct investment and bilateral portfolio (1969-1980)
- VIII.8 National expenditures of six capital surplus oil exporting countries (1973-1978)
- IX.1 Sectoral distribution of investment (1967-1989)
- IX.2 Share of the private sector in GDP (1980)

- IX.3 Turnover of the private sector according to activity (1980)
- IX.4 Evolution of profit in the state and private sectors (1969-1978)

APPENDICES

- II.1 Evolution of the Algerian population (1830-1980)
- III.1 Map of the hydrocarbon productive base
- III.2 Data on the oil industry productive base
- III.3 Petrochemical derivatives
- IV.1 Oil taxes levied by the Algerian government (1963-1969)
- IV.2 Sonatrach's subsidiaries
- IV.3 Evolution of Sonatrach's assets (1967-1971)
- IV.4 Financial structure of the Saharan oil industry (1962-1972)
- IV.5 Indemnification of French companies
- V.1 CiF prices equalisation (1947, 1948, 1949)
- V.2 Evolution of the posted prices (1948-1970)
- V.3 Evolution of oil exporting countries' participation (Oct. 1972-Sept.1976)
- V.4 Comparison of spot and official prices (1978-1980)
- VII.1 Structure of soil occupation in the state agricultural sector (1966-1977)
- VII.2 Yield for various produces (1955-1977)
- VII.3 Evolution of agricultural products (1966-1978)

SUMMARY

After its independence in 1962, Algeria experienced a growth process which was supposed to bring about qualitative and quantitative changes in both the structural features of the domestic economy and its position within the international division of labour. To that extent, introversion and integration of the economy emerged as basic themes upon which Algerian policymakers sought to justify the adopted growth process. This was based on the development of heavy industries as a matter of priority. Export of hydrocarbons and appropriation of the oil rent by the state were presented as the means by which financial constraints would be overcome and a productive base erected.

The oil rent could, however, yield an opposite discourse whereby the rentier ideology would become dominant and relegate the implantation of an efficient productive apparatus to a secondary position. The emphasis, in the official discourse, on the development of the forces of production, and the absence of an unambiguous social project did, in fact, present the appropriate setting for the development of a rentier ideology.

By the end of the 1970s, Algeria exhibited the essential features of a rentier economy to the extent that neither the agricultural nor the industrial sector could perform without support from the oil rent. Thus, rather than favouring the realisation of an integrated economy, the appropriation of the oil rent by a state which had no social project, inhibited the search for radical solutions to objective problems.

The reduction of the magnitude of the oil rent during the 1980s would, then, call into question the inefficient functioning of the domestic productive base. The same reduction would require a repositioning of the dominant social groups and the development of a new ideological discourse to advance an appropriate social project.

INTRODUCTION

After having spent more than a century under French colonial rule and seven years of war against the French army, the Algerians gained their political independence in 1962.

The French colonisation, however, left two basic features that would shape the future of the Algerian economy.

At the economic level the indigenous population had little opportunity to accumulate. This fact would explain the non-emergence of a strong indigenous bourgeoisie who would dominate (as a hegemonic class) the Algerian social formation after independence. The accumulation process was then led by the French colonists. However this process had been constantly supported by subsidies (from metropolitan France) which may signal the incapacity of the colonial economy to reach a self-sustained accumulation process.

At the political level, on the other hand, the indigenous population as a whole had been rejected from all official institutions and had no means to express its interests. The liberation war, then, constituted the ultimate means by which the indigenous population could reach its political independence. The war, led by the Algerian petty-bourgeoisie (covering, in the Algerian context, small proprietors, artisans, shopkeepers and employees in the state administration and education), would nevertheless emphasise the struggle against an external enemy as the main contradiction and favour the

development of a populist discourse to avoid the question of contradictions internal to the Algerian society.

The struggle against an external enemy and the rejection of the colonial economy (as characterised by its extraversion and dependency on metropolitan France) would then, to some extent, pre-determine the growth path adopted by Algerian policy-makers. The building of an "independent and national economy" would stem from the adoption of De Bernis' theory of industrialising industries [Part A - I - 5 - 2] and would represent the "anti-colonial economy".

The process by which the Algerian economy would be transformed emerges as a sequence whereby:

1. heavy industries (steel and petrochemical industries in particular) would be set up to feed downstream activities (light industries and agriculture)
2. the agricultural sector, after a restructuring, would then absorb industrial commodities (means of production and fertilisers), increase its productivity and open up a market for more industrial commodities (consumption goods)
3. light industries would then be set up (as a result of forward linkages from the heavy industries) to respond to a growing demand coming from both rural and urban areas.

The first part of this sequence would, however, have to be supported by imports of means of production to erect the industrialising industries' material

base. Export of hydrocarbons could then constitute the optimal choice for an appropriate income which would support the growth process.

However, the price of crude oil on a world scale encompasses a portion, the oil rent [Part A - I - 3], with no productive labour counterpart (according to the labour theory of value) within the domestic economy. This feature, which appears as a transfer of resources from the rest of the world economy to the oil exporting states, may be grasped as a form of subsidy which may (depending on its use) emphasise the colonial structure of the Algerian economy.

The rejection (at least in the official discourse) of the features of the colonial economy would nevertheless suggest that Algerian policy-makers would use the oil rent as a means of gradually favouring a process of autonomous accumulation, hence realising Amin's autocentred model. The export of hydrocarbons would, under this latter assumption, be apprehended as a temporary necessity which would speed up the building of an autocentred economy.

The analysis of the Algerian experience is structured as follows:

Part A develops, in its first chapter, a theoretical discussion about the relation between oil and development. After a discussion about the determination of the price of oil on a world scale and the introduction of the Marxian concept of rent, the relevance of "Dutch disease economics" to the understanding of the relation between oil and development is investigated. Chapter I ends with a presentation of the theoretical background upon which

Algerian policy-makers could justify their choice of a peculiar growth strategy.

Chapter II, on the other hand, analyses the colonial era and puts the emphasis on Metropolitan France's involvement in the expansion of the colonial economy. This involvement would, then, constitute a point of reference in terms of a class analysis of the Algerian social formation and the growth strategy adopted by Algerian policy-makers after independence. This chapter, then, develops an analysis of post-independence Algeria and focuses on the favourable conditions which may support the chosen growth strategy. A presentation of the Algerian economy in the early 1980s concludes this chapter.

Finally, Chapter III develops an analysis of hydrocarbons within the domestic economy. A presentation of the hydrocarbon productive base is followed by an investigation of the motivating function (*fonction d'entraînement*) assigned to the hydrocarbon industry. The second function, i.e. the financing function (*fonction de financement*) is then introduced and the fiscal linkage it was supposed to bring about is analysed. Being linked to the realisation of hydrocarbons within the world market, the analysis of the financing function will constitute the appropriate step towards the study of the world market for hydrocarbons.

Part B then studies the scene, i.e. the world market for hydrocarbons, where the rent is subject to a process of appropriation by various actors.

Chapter IV analyses the so-called Algerian-French privileged relationship and assesses the benefits (or the losses) that the Algerian economy incurred

because of its close links with its former Metropolis.

Chapter V, on the other hand, enlarges the scope of analysis and investigates the world oil market. The historical analysis develops a three-part periodisation whereby the first period (up to the 1960s) is presented as the period where the oil exporting states had been confined to the passive role of tax collectors. The second period (the 1970s), on the other hand, is characterised as the moment when the convergence of interests among the oil exporting states, the oil companies and the strategic requirements of the US economy, brought about the so-called energy crisis. Finally, the 1980s, which witnessed the fall of the price of oil on a world scale, is understood as the period where the previous convergence of interests vanished to be replaced by its opposite. The reduction in the oil rent appropriated by the Algerian state would then put forward the question of a gas rent as a replacement for the financing of the growth strategy.

Chapter VI is then devoted to a study of the international gas industry. After a presentation of the gas material base (location of major oilfields) this chapter analyses the state of the international gas trade and discusses the existence of a gas rent and the likelihood of its appropriation by the gas exporting states. This chapter ends with a discussion about the prospects of Algerian gas exports.

Part C, finally, develops an evaluation of the Algerian growth strategy, as implemented during the 1960s and 1970s.

Chapter VII presents an investigation of the agricultural sector as the basis for the reproduction of the subjective element (the labour force) of the labour process. In this analysis, two aspects are emphasised. The first aspect is brought about through a study of the state's understanding of the agricultural sector (with respect to the overall growth strategy). The second aspect, on the other hand, relates to the peasantry's (in its various components) strategy with respect to the state's policies. Both aspects are, of necessity, analysed in their relation to the appropriation of the oil rent by the Algerian state.

Chapter VIII, on the other hand, discusses the process of implementing an autonomous accumulation. The implementation of De Bernis' model is then questioned and the internalisation of the reproduction of the objective elements (the means of production) of the labour process is analysed. In this respect, the theoretical relevance of De Bernis' model to the social and political conditions of the Algerian scene becomes the essential feature to be investigated. Finally this chapter ends with a study of the relations between the characteristics of the Algerian growth strategy and the process of internationalisation of capital.

Finally, Chapter IX constitutes an attempt at grasping the evolution of the Algerian growth strategy from a political viewpoint, i.e. the class nature of the state. In this context the growth strategy is seen as an appropriate extension of a state financially secure during the 1970s (thanks to the oil rent) but without a social project.

However, the 1980s, which witnessed the fall in the Algerian state's share of the oil rent would require a reassessment of the Algerian growth strategy. The emergence of the domestic bourgeoisie into the political scene may then constitute the first step towards calling into question the strategy of building an independent and national economy. A shift towards a more "orthodox" approach to development, whereby the domestic bourgeoisie could implement its social project (the full development of a capitalist economy integrated within the world market) would, to that extent, become the only apparent option.

At that stage the concepts of autocentred economy or independent and national economy would be redundant.

PART A
CHAPTER I
OIL PRICE, RENT AND DEVELOPMENT

The 1970s witnessed the emergence of OPEC (Organisation of Petroleum Exporting Countries) as a new active agent in the world market for oil. This emergence, apparently, coincided with a shift from a buyer's market characterised by excess oil supply (1960s) to a seller's market exhibiting excess demand (1970s).

The environment within which the OPEC organisation had been moving, then, changed to the extent that its primary objective (i.e. to avoid a fall in the posted price of oil) could be fulfilled while avoiding a direct confrontation with the transnational companies operating on the oilfields. In this context, negotiations between the oil companies and OPEC took place in the early 1970s and schedules for a gradual increase of the posted price of oil were agreed upon. The Teheran and Tripoli agreements, then, constituted a general framework upon which a five year (1971-76) price pact would link the OPEC states to the oil companies.

By early 1973, however, the oil market became so tight that the market price of oil surpassed its posted price. From the OPEC viewpoint, money was being lost to the benefit of the oil companies and new arrangements had to be implemented in order to take into account the new market conditions.

The October 1973 Middle East war, however, put a halt to the negotiation process and from then on the level of the oil price seems to have been unilaterally set by OPEC. Thus from \$2.28 per barrel (January 1972) the marker crude jumped to \$7/b (January 1974) and reached \$11.65/b by November 1974. Furthermore a second substantial jump took place by December 1979 when the marker crude price reached \$24/b. The price of oil had then been twenty times higher at the end of the decade than at its beginning.

With respect to the marginal production cost of a barrel of oil (which is less than a dollar in all OPEC countries) the level of the oil price prevailing within the world market and an appropriate export policy on the part of OPEC states may constitute an opportunity to pull out of the "vicious circle of under-development". Through a fiscal linkage, in particular, the OPEC states may diversify their economies and set up a self-sustained growth process.

This opportunity, however, emerges only to the extent that there is a substantial difference between the world price of oil and its domestic cost of production. This difference actually constitutes the basis upon which the existence of oil resources could be related to a development process (hence the phrase "oil and development"). And the magnitude of this difference and its likely trend requires a study of the formation of the price of oil on a world scale.

1. On the pricing of crude oil: the conventional approach

As a first approximation, crude oil can be considered as an exhaustible resource, the price of which would be understood within the theoretical framework set by Hotelling¹ in 1931 and developed by various authors² in the

1970s to take into account the energy crisis. The rediscovery of Hotelling's theory of exhaustible resources by conventional economics, then, constituted an attempt to theorise the functioning of the oil market and the price level that has been witnessed during the 1970s.

The basic argument which stems from Hotelling's 1931 paper is that, within the framework of intertemporal optimisation, the price of an exhaustible resource should rise at a rate equal to the rate of interest. In practical terms the resource owner faces two alternatives:

1. If the price of his resource is increasing at a slower rate than the interest rate, he (the resource owner) should extract his resource as soon as possible and invest in assets earning the rate of interest.
2. On the other hand, if the price of his resource is appreciating at a faster rate than the rate of interest, then the resource owner should keep the resource in the ground.

The formalisation of the resource owner's dilemma could then be considered within a mathematical model,³ the responses of which would depend on implicit or explicit assumptions.

Within the simplest model developed by the conventional approach, extraction costs are assumed away and the initial stock S_0 of the resource is known. Identifying the rate of extraction R_t with the rate of utilisation of the resource, the stock of the resource at time t ($t > 0$) is given by:

$$S_t = S_0 - \int_0^t R_t dt$$

where

$$S_t \geq 0 \text{ for } t \geq 0$$

In order to determine the price path of the exhaustible resource, time is discretely measured in equal intervals of length θ and the numeraire is assumed to be an asset earning a rate of return $r_t (>0)$ during the interval $(t, t + \theta)$. If p_t denotes the competitive spot price per unit of the resource at time t , then an individual who owns p_t units of the numeraire asset at time t is assured $(1 + r_t\theta)p_t$ units of numeraire at time $(t + \theta)$. On the other hand the individual can buy a unit of the resource at time t and sell it at time $(t + \theta)$ to receive $P_{t+\theta}$ units of numeraire. Under competitive conditions, the individual should be indifferent regarding these two options and the arbitrage function will be written as:

$$P_{t+\theta} = (1 + r_t\theta)P_t$$

At this stage the price path of the exhaustible resource can be determined by rearranging the above equation and taking the limit as θ tends to zero. The Hotelling rule then emerges as

$$\dot{P}_t/P_t = r_t$$

From this last equation one peculiar aspect of the economics of exhaustible resource can be noticed: an unextracted stock of a resource can yield a return to its owner only to the extent that it appreciates over time. Under competitive conditions the rate of return on the resource must equal the rate of return r_t enjoyed by the numeraire good.

Although this simple model illustrates the fundamental principle of exhaustible resources economics, the assumption of zero extraction costs does seem rather strong, especially when various oilfields and their locations with respect to oil markets are brought into the picture. The simple model can, however, be developed in order to take account of positive extraction costs. The only new feature which is grasped through this assumption is the existence of two prices of the resource instead of one: a price p_t for the unextracted resource and a price q_t for the extracted resource. These two prices are related by the formula:

$$q_t = p_t + dc/dR_t$$

where

dc/dR_t : marginal cost of extraction.

The introduction of extraction costs does not, however, produce any substantial change in the price path of the resource under competitive conditions. Thus, whereas the rate of increase of the price of the unextracted resource is found to be smaller than the rate of return on the numeraire asset, the price path of the extracted resource remains unspecified because of the impact of two different variables p_t and dc/dR_t which can move in opposite directions.

Finally, to complete the picture of the theoretical handling of the pricing of an exhaustible resource by conventional economics, the assumption of competitive conditions is to be relaxed in order to investigate the situation where imperfect competition may prevail.⁴ Since imperfect competition is

difficult to model, the extreme case of a single resource owner (a monopolist) of a resource is investigated instead. Various assumptions are then advanced in order to study this new problem: the initial stock S_0 of the resource is known and the monopolist faces a downward sloping demand function $p(R_t, t)$ relating the price p at which a flow R_t is sold at time t . Furthermore market imperfections are assumed away in the rest of the economy. Then if r represents the competitive interest rate which is earned by the numeraire asset, and extraction costs are assumed away, then maximisation of the present discounted value of the flow of profits stemming from selling the resource would be formalised as

$$\max \int_0^{\infty} p(R_t, t) R_t \exp(-rt) dt$$

subject to

$$\int_0^{\infty} p(R_t, t) R_t \exp(-rt) dt$$

$$\int_0^{\infty} R_t dt \leq S_0 \text{ and } R_t \geq 0$$

then if m_t denotes marginal revenue, that is

$$m_t = \frac{d(p(R, t) R)}{dR}$$

the monopolist will choose the rate of extraction that equalises between the rate of increase of net marginal revenue and the rate of interest r , that is

$$\dot{m}_t / m_t = r$$

To determine the price path of the resource under monopoly conditions, the equation defining marginal revenue is manipulated under the assumption that the demand curve shifts uniformly over time (that is $p_t = f(t) \cdot p(R_t)$). This manipulation then produces the following equation

$$\dot{p}_t / p_t = r - \dot{\gamma}_t / \gamma_t$$

where

$$\gamma_t = 1 - 1/\eta_t(R_t)$$

$$\eta_t = \frac{p(R)}{R} \frac{dR}{dp}$$

Then, recalling that under competitive conditions, the price path of the resource is determined as:

$$\dot{p}_t/p_t = r \tag{1.2}$$

the relationship between the two price paths, under various assumptions, is analysed. Under constant elasticity of demand, formulas 1.1 and 1.2 are identical, so that there is no difference between the competitive price path and the monopolist's one. On the other hand, under variable elasticity of demand, the problems at hand become rather complicated and the outcome depends basically on whether the absolute value of the elasticity of demand increases or decreases as the rate of extraction falls. Finally, when extraction costs are brought into the picture and under the assumption of iso-elasticity of demand, it is shown that the initial price of the extracted resource is higher under monopoly conditions than under competitive ones.

Although referring to exhaustible resources in general, the framework developed within conventional economics is assumed to contribute to an understanding (at least a better one) of the functioning of the oil market. The conventional discourse, and particularly its pertinence, have nevertheless to be questioned at two particular levels. Whereas the first level deals with the (implicit or explicit) assumptions upon which the discourse develops, the second level must address the practicality (in particular the predictive power) of the models presented above.

Concerning the first level, the conventional discourse rests on very restrictive assumptions,⁵ the most important of which is the existence of forward markets for each date up to the time of complete depletion. The non-existence of such markets in the oil industry implies that neither future prices nor the future level of demand can be accurately assessed. This aspect, by itself, precludes any possibility of determining an optimal intertemporal allocation of natural resources. By relaxing the above assumption, the whole "conventional structure" collapses and the conventional discourse emerges more like an abstract mathematical exercise than an attempt at theorising the actual functioning of the oil market.

Even when conventional economists relax the assumption of perfect competition and assume imperfect markets, the conventional discourse still suffers from the assumption of intertemporal optimisation, for there is no basis⁶ for the argument that oil exporters (OPEC states in particular) can be attributed a dynamic optimising behaviour – in other words, that OPEC states can be reduced to the "rational producers" of conventional economics.

This reduction, however, allows conventional economics to develop an ideological discourse whereby the history of the oil business (the pre-eminence of the US economy in shaping the world oil market) and the conflicts of interest among transnational oil companies, the OPEC states and oil importing states, can be ignored. What is then left are a-historical producers maximising their profit over time while facing well-behaved (iso-elastic) demand curves. The failure of conventional economics to understand the functioning of the oil

market basically stems from its a-historical premisses. The latter are, however, necessary to justify the ideology of universal harmonies advanced by the conventional discourse. In this context conflicts of interest among various social groups are set aside in order to determine, in Solow's words, "the optimal social management of a stock of a non-renewable but essential resource".⁷ (For the benefit of mankind?)

Although the conventional discourse premisses constitute an integral part of the ideology of universal harmonies, they (the premisses) may nevertheless be tested for their pertinence by an analysis of their predictive power. The models developed by conventional economics either in the simplistic form which assumes perfect competition, or in the more sophisticated approach which deals with imperfect competition, have been of little value in terms of understanding the historical trend of oil prices and predicting the likely future price path. Thus the decline in world oil price during two decades (the 1950s and 1960s) and the emergence of OPEC (to stop the decline of the oil price) cannot be explained in terms of Hotelling's rule. On the contrary, the inverse of this rule may be more appropriate. On the other hand, the price jumps of the 1970s cannot be related to any rate of interest. Therefore the smooth increase of the oil price implied by Hotelling's rule seems to have never materialised and the whole framework developed by conventional economics becomes questionable in terms of its relevance.

To the extent that it was set to explain the functioning of the economics of exhaustible resources and predict the likely trend of mineral prices (particularly oil), Hotelling's framework (despite its 1970s revival) remains a

pure abstract exercise which produces no tangible results. In this context the history of the oil industry, rather than supporting the theory of exhaustible resource, may constitute a resource for the rapid exhaustion of this theory.⁸

2. On the modelling of OPEC behaviour

Because of the limited value of Hotelling's framework, conventional economists went in search of market imperfections that hindered the applicability of Hotelling's rule. In the view of the conventional literature, market imperfections seem to stem mainly from OPEC behaviour, hence the focus on this organisation as the only active agent in the oil business. Modelling OPEC behaviour then became the *raison d'être* of various conventional economists who could not squeeze the oil economy into their models of intertemporal optimisation.

Two basic assumptions have therefore been advanced. The first one attributes a wealth-maximising behaviour to OPEC and serves as a basis for building two competing models: a monopoly model and a competitive one. The second assumption on the other hand presents OPEC as a non-wealth maximising body and develops two models: the target revenue model and the political model (or models).

The first assumption actually remains within the conventional discourse although the rate of interest (or some kind of social rate of discount) does not seem to play a major role in the determination of the oil price. The two models developed on the basis of this first assumption, however, suffer from the same shortcomings. Thus whereas Adelman,⁹ as the proponent of the monopoly

model, develops the argument that Saudi Arabia acts as a swing producer, the data for 1973-1980 contradict this very argument: instead of declining (as demand for OPEC oil falls), Saudi's market share increased from 23.9% to 36.5%¹⁰ of total OPEC output. Furthermore, apart from blaming Saudi Arabia for the oil crisis of the 1970s, Adelman offers neither a theoretical understanding of the oil industry nor any sound prediction about future oil prices. The author, however, expected (in mid-1981) higher real prices in the 1980s. Adelman's wrong predictions may then suggest that his frame of reference is of the same value as Hotelling's rule.

The second model which relates to the assumption of wealth maximising behaviour assumes that oil companies and most governments have different discount rates which would imply different rates of output. Thus the 1973 oil crisis is understood not in terms of any collusive attitude on the part of OPEC but on the ground that the OPEC states have a lower discount rate which implies restraining output, thus driving prices up.¹¹ The change in oilfield ownership in the early 1970s would then constitute the main explanation of the 1973 oil crisis. The argument that OPEC states have a lower discount rate does not, however, stand up to historical evidence. Thus before the 1970s, OPEC states had constantly been pushing the oil companies to produce more output. And after the change in property rights, OPEC output did not decrease by any substantial amount. Secondly, the second oil jump of 1978-1979 cannot be related to any change in property rights since by that time the OPEC states were (at least legally) owners of their oilfields. Furthermore, the argument that competitive prices prevail in the world oil market cannot take into account the important

difference between the world price of oil and its cost of production in all OPEC countries. Finally, to the extent that the question as to what a competitive price is remains unanswered by conventional economics, the focus on OPEC behaviour as a way of understanding the functioning of the oil market may only signal the speculative character of the conventional discourse.

Whereas the first assumption (OPEC as a wealth-maximising agent) remains within the conventional theoretical framework, the second assumption does not actually develop any theoretical understanding of the oil market but speculates around two alternatives. The first is to assume that OPEC output (or the output of the main exporters of OPEC) is dependent on the national budget requirement of the countries concerned.¹² This assumption, therefore, implies the existence of a backward bending supply curve, or in other words it assumes that if an investment target is set, a price increase will result in reduced output. The target revenue model, however, suffers from various shortcomings: firstly, what determines the price increase which triggers the reduction in output is left unanswered; secondly, and more importantly, historical facts actually suggest the prevalence of a relationship opposite to the one implied by the model. On this latter assumption, rather than reducing output, a price increase may actually increase it in order to meet new and higher investment targets.

Thus the 1973-74 oil jump allowed the Algerian state to double its planned investment for the second Four Year Plan (Part A-III-3) by increasing oil exports. Saudi Arabia's needs, on the other hand, jumped from \$4 billion in 1973 to \$88 billion in 1981.¹³ This instability of OPEC states' budgetary needs cannot therefore be used as reference (or as explanatory variable) for the

determination of OPEC output or of the price of oil. The target revenue model, though limited in its scope, does nevertheless indicate that, contrary to the conventional approach, OPEC states need not be reduced to wealth maximising agents.

The second alternative,¹⁴ on the other hand, develops the argument that the events that had been taking place during the 1970s should not be related to any type of wealth ^{le} optimising behaviour on OPEC's part. On the contrary, this approach, after noticing the importance of Saudi Arabia in OPEC, argues that "an operational code of advancing Saudi Arabia's political priorities while minimising hostile external and internal pressures upon the Kingdom, explains Saudi behaviour better than the economic optimising model does."¹⁵

Thus in this framework, economic decisions serve broader political goals and cannot have a rationality of their own (hence the abstract and limited value of the conventional discourse). The political model does not, however, provide any means of explaining past prices or determining future ones. All these aspects seem to depend ultimately on Saudi rulers' perception of their environment. Moran's contribution may nevertheless be understood in terms of his rejection of the reductionist view of the conventional discourse and his attempt at integrating the political variable into the oil question. The integration of the political variable may then be expanded in order to seek the economic underlyings (or base) upon which political battles take their full meaning.

The political battle mentioned above would obviously require the existence of various "players" and the definition of the object of the "battle". At this stage, the conventional discourse with its depiction of the economic system as a "one-way avenue leading from scarce original factors of production to goods and services utilised in final consumption"¹⁶ can apprehend neither the players (apart from the ideological notion of producers) nor the object of the battle (to the extent that there are no conflicts in the conventional world).

Classical economics, on the other hand, may offer the means to overcome the failure of conventional economics. By interpreting "the economic process as one of continuous reproduction (and enlargement) of the material bases of human societies",¹⁷ classical economics points to the existence of a surplus above what is necessary for the simple reproduction of the economic system. This surplus may then constitute the object of appropriation by various social groups which would devise strategies in order to obtain the highest share. It is within this context that Chevalier's argument can be grasped and his contribution assessed.

Chevalier,¹⁸ then, argues about the existence of an oil surplus and defines it as "the difference between the valorisation price of one ton of crude sold to the consumers in the form of refined products and the average cost of extracting, carrying, refining and distributing this same ton of crude."¹⁹ The oil surplus on the other hand is composed of various differential rents which stem from various parameters (see table below) and a monopoly rent which emerges because of the peculiar structure of the oil industry.

quality rents

oil surplus = + position rents

+ mineral rents

+ technological rents

+ monopoly rents

After defining the notion of oil surplus, Chevalier then investigates its appropriation by three contending groups: the oil exporting countries, the oil companies and the consuming countries. The portion of the oil surplus which accrues to each contender is, according to Chevalier, related to a peculiar relation of power (*rapport de force*) which depends essentially on two parameters: the cost in evolution (*coût en développement*)²⁰ of the production of oil and the degree of social consciousness of the oil exporting states in particular.

Whereas the degree of social consciousness is no more than mentioned by Chevalier, the analysis of the cost in evolution for the production of oil constitutes the cornerstone of Chevalier's approach. In this context, Chevalier suggests that whereas the period 1859-1970 witnessed decreasing marginal costs, the period 1970 onward saw the reverse trend.²¹ Upon this hypothesis, Chevalier can argue that whereas the first period covered a tendency to a fall in the oil price on a world scale, the second period witnessed the reverse, that is a rise in the oil price. The latter would have the same magnitude as the cost in evolution of the most expensive operating field which is needed to satisfy demand on a world scale. Furthermore, the rise of the oil price which corresponded (according to Chevalier) to the exploitation of marginal fields, would allow producing countries (in particular OPEC members) to extract a

higher rent from the oil companies.

Chevalier's understanding of the oil price as representing marginal cost within the oil sphere may constitute an improvement over the abstract approach in terms of interest rate. However, Chevalier's argument remains limited at the theoretical level while its basic hypothesis does not stand up to historical evidence.

Historically the relation between exploitation of marginal (more costly) fields and the price level has been the reverse of what Chevalier implies. Contrary to Chevalier's basic hypothesis, costlier oilfields (Alaska and the North Sea) are exploited because of high prices and not the reverse (see Chapter V, Part B). In fact these costlier oilfields would be shut down if a more intensive exploitation of Middle-East oilfields took place.

At the theoretical level, on the other hand, Chevalier's approach cannot explain why marginal oilfields (the most expensive to operate) do produce a substantial rent (see section 3 below). Thus if marginal oilfields produce a rent, the price of oil on a world scale does not represent marginal cost within the oil sphere. It may, however, cover this cost to which is added an increment that would be apprehended outside the oil sphere.

The conventional approach, including Chevalier's thesis, seems to be limited in its understanding of the functioning of the oil market. Not having a theory of the commodity as a particular category of the capitalist mode of production, conventional economics confronts things (goods) and therefore does not

consider oil as one (among others) material carrier of a more general commodity, i.e. energy which has the power to unlock frozen labour (machines). Considering oil as a simple material carrier of the commodity energy, then, implies that the oil industry may be understood only in so far as it is embedded within a broader study of the energy sphere on a world scale. In particular the study of the oil sphere and of the energy sphere in general cannot be separated from an analysis of the emergence of landed property (in particular in the peripheral social formations) and its peculiar relation with capital which confronts it in the form of transnational firms.

3. The price of oil and the distribution of the oil rent

To the extent that "landed property presupposes that certain persons enjoy the monopoly of disposing of particular portions of the globe as exclusive spheres of their private will to the exclusion of all others",²² the analysis of the oil sphere may be embedded within the frame of reference developed by Marx in his study of ground-rent.

Within a Marxian framework, the capitalist production process involves workers who are paid wages. These wages represent the exchange value of their labour force. The labour force is, however, capable of producing more value than is necessary for its own reproduction. Being generated by surplus labour, this surplus product takes the form of profit and surplus profit which are respectively appropriated by the capitalist class and the landowning class. Whereas capitalists appropriate profit because of their monopoly over the means of production, landowners extract a rent thanks to their monopoly over the land. Thus in the Marxian context, rent is basically a portion of surplus

value that is appropriated by the landowning class.

What makes possible the existence of the rent and its appropriation by the landowning class is, according to Marx, the existence of a surplus profit which stems from conditions of production of peculiar spheres which are not subject to the equalisation of the profit rate (agriculture and mining spheres in particular). Thus, under capitalist conditions, rent becomes an excess over that part of surplus labour which is normally claimed by capital.²³ The question which arises at this stage concerns the bases upon which a surplus profit can be generated in peculiar spheres of production.

Differential rent

In the industrial sphere, the surplus profit that an individual capitalist can realise may emerge as the consequence of a reduction in production costs. This reduction would stem from the application of new, improved and above average means and methods of production.²⁴ In this context the rise in productivity and the emergence of surplus profit appropriated by the capitalist are ultimately dependent upon capital. Competition among capitalists would, however, tend to generalise these more efficient methods of production and thereby cancel out the basis for the existence of surplus profit. Thus the conditions under which the individual capitalist would sell his commodity above its production price²⁵ (hence gaining a surplus profit) cannot be sustained for a long time.

In the agriculture sphere (and by extension in the mining sphere) and contrary to the industrial sphere within which the most efficient processes are gradually generalised by driving out less efficient ones, the most efficient conditions of production cannot be spread over the sphere. For the productivity of labour does not depend entirely on the amount of capital injected into this sphere but on particular natural conditions (the waterfall in Marx's example) which are monopolised by those who own particular pieces of the earth.

In so far as the most efficient conditions of production cannot be generalised over the agricultural sphere to satisfy social needs, less efficient (less productive) processes are brought into being. Capitalists who use these less efficient processes must, however, appropriate at least the average profit. Under these circumstances and contrary to the industrial sphere where the market price of a commodity reflects the production price of capital producing under average conditions (and covering a large part of the market), in the agricultural sphere it is the production price attached to the less efficient conditions of production that regulates the market price of the commodity concerned. In this frame of reference, capitalists who operate the least efficient processes will gain the average profit rate whereas capitalists who operate the most efficient processes would (in the abstract) appropriate the average profit to which is added a surplus profit. The magnitude of this surplus profit is determined as the difference between the production price attached to the least efficient conditions of production and the one attached to more favourable conditions.

Capitalists do not, however, face a vacuum, but confront the landowning class, a category external to the capitalist mode of production. Landed property could then prevent capital from utilising the most favourable conditions of production unless it extracts a fee, the upper limit of which is the whole surplus profit. The appropriation of this surplus profit by the landowners would then reflect its transformation into ground-rent.

Ground-rent as the relation linking and opposing the capitalist class and the landowning class may be apprehended, as a first approximation, under the heading of differential rent. Thus, whereas capitalists who operate under the least favourable conditions stick to an average profit, those who operate under more favourable conditions would appropriate that average profit but give up the surplus profit to the landowners in the form of rent (differential rent in this case). At this stage the landowners as a class remain passive agents in the emergence of surplus profit. Their monopoly over the land would, however, allow them to claim it (as rent) from the capitalists who would be satisfied with their appropriation of average profit.

Absolute rent

The assumption that capitalists operating under the least favourable conditions do not pay a rent does nevertheless constitute a problematic abstraction for there "is in no way a reason for the landlord to lease out his land to the farmer for nothing and be so philanthropic to the client as to extend him a credit gratuit."²⁶ In actual fact, a situation where the marginal land does not extract a fee would merely mean that landed property does not act any more as a

barrier to capitalist expansion. On the other hand, it would mean the abolition of the landowning class as a category ultimately opposed to the capitalist class over the appropriation of surplus profit.

Thus, whereas differential rent exists without the active participation of the landowning class, absolute rent emerges as a pure creation of landed property.²⁷ While denoting a peculiar relationship between the landowning class and the capitalist class,²⁸ absolute rent also indicates that the very existence of landed property prevents the commodity concerned from being sold at the general production price (the production price attached to the least favourable conditions of production). A fee (absolute rent) must actually be added to the general production price. The magnitude of absolute rent, on the other hand, does ultimately depend on the power of the landowning class to extract a part if not all of this fee from the capitalist class.

The existence of the Marxian absolute rent, nevertheless, rests on the assumption that the organic composition of capital in the agricultural sphere is lower than the social average.²⁹ Hence agricultural products could be sold at a market price higher than their production price (at their value in the extreme case). Under these circumstances, capital comes up against landed property which (1) restricts investment in particular spheres of production (agriculture in this case) and (2) prevents the general equalisation of surplus value that brings about the average profit.³⁰ Agricultural products are then sold at a price comprised between their production price and their (higher) value. The difference (which represents surplus value produced within the agricultural sphere) between these two limits constitutes the object of the struggle between

landed property and capital as far as the magnitude of the absolute rent is concerned.

Thus within this Marxian framework, spheres of production which are immediately dependent on nature (agriculture and mining, for instance) exhibit peculiarities which are absent from the industrial sphere. Firstly, the market price of commodities produced within the first named spheres is determined by the production price of capital operating under the least favourable conditions. Hence capital operating under more favourable conditions obtains a surplus profit which is transformed into differential rent because of the existence of landed property. Secondly, to the extent that even capital operating under the least favourable conditions must pay a fee (absolute rent) in order to operate, the market price of the commodity concerned must be higher than the production price of this capital. This market price may then be visualised through the formula:

$$P = p' + DR + d$$

where

p = market price

p' = average production price in the sphere

DR = differential rent

d = absolute rent

The question which arises at this stage concerns the relevance of this Marxian framework (developed in nineteenth century England) to an analysis of the current energy sphere of which the oil sphere is a component.

Oil rent within the oil sphere

Of all material carriers of energy, oil, coal and natural gas are the most widely used.

Table I.1: World consumption of energy (10^b t.c.e.)

| Year | Total | Solid fuel% | Liquid fuel% | Nat. gas% | Others% |
|------|--------|-------------|--------------|-----------|---------|
| 1929 | 1713 | 79.8 | 14.9 | 4.5 | 0.8 |
| 1937 | 1826 | 75.5 | 18.0 | 6.3 | 1.2 |
| 1949 | 2315 | 64.0 | 24.0 | 10.3 | 1.7 |
| 1959 | 3966 | 53.2 | 30.6 | 14.2 | 2.0 |
| 1969 | 6406 | 36.8 | 40.6 | 20.3 | 2.3 |
| 1975 | 7444.4 | 30.4 | 45.7 | 20.9 | 3.0 |
| 1982 | 8397.8 | 32.0 | 42.1 | 21.9 | 4.0 |

Source: *UN Statistical Yearbooks 1960, 1970, 1982.*

The state of the energy market in general and the market price of energy within the world market in particular would then be determined by the level of the production forces (hence the price of production) of the least favourable field in the energy sphere. In this context the coal industry faces the worst conditions of production and ought to regulate the market price of energy as a whole.

Table I.2: Estimated energy production costs* (1979 US dollars)

| Source | US dollars/BOE** |
|-----------------------------|------------------|
| Indigenous coal (US) | 3 - 5 |
| Imported coal (NW Europe) | 8 - 14 |
| Indigenous coal (NW Europe) | 10 - 15 |
| Middle-East oil | 0.25 - 1.00 |
| North Sea and Alaskan oil | 7 - 12 |
| US oil | 3 - 7 |
| LNG imports | 10 - 23 |
| Synthetic NG from US coal | 23 - 35 |
| Liquids from coal | 30 - 37 |
| Liquids from shale | 15 - 35 |

Source: Eden, R. and others, *Energy Economics, Growth Resources and Policies*, Cambridge University Press, 1981, p.289

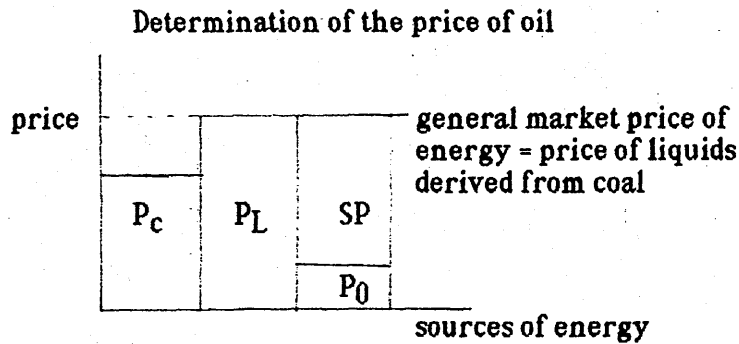
* exclude taxation, refining, storage, transmission and distribution costs

** barrel of oil equivalent

Of all primary sources of energy, European coal is the most expensive. Its price of production does not, however, regulate the energy market for it is generally subsidised by European governments. In fact the nationalisation of coal mines in Europe stems from the situation that no profit is generated within the industry, hence no capitalist would be willing to invest in it. From the capitalist viewpoint (the necessary appropriation of average profit by the capitalist) the mere existence of the European coal industry constitutes an irrationality. Its actual existence, however, is explicable using political and social criteria. Under these circumstances the general market price of energy is determined without consideration of the European coal industry.

At the opposite end, the American coal industry enjoys more favourable conditions of production (less ash content and deposits closer to the earth's surface). Hence its price of production must be lower than European coal. Furthermore, to the extent that the American coal industry operates under "normal" capitalist conditions (it does not receive subsidies from the state) it must generate an average profit³¹ (otherwise capitalists would not invest in it). However, compared to the oil industry, the US coal industry remains much less efficient and can be considered as exhibiting the least favourable conditions of energy production. In this context the price of production of American coal ought to regulate the energy market and become the general production price of the energy sphere.

However, in view of the prevailing productive apparatus and the state of technology, coal exhibits a relatively less favourable use value form (oil is less expensive to process and provides, in addition, non-energy products). From this viewpoint, to compete with oil in all production spheres, coal must be liquified. Hence the relevant market price of energy emerges not as the production price of coal but as the production price of liquids derived from coal. Under these circumstances the price of oil encompasses a surplus profit the magnitude of which depends on the difference between its own production price and the market price of energy (production price of liquids derived from coal).



where

P_c = price of production of US coal

P_L = price of production of liquids derived from coal

P_0 = average production price of oil

SP = surplus profit

The existence of surplus profit in the price of oil then suggests that the objective conditions for the existence of differential rent are basically fulfilled. Oilfield owners might appropriate this surplus profit (as differential rent) while capitalists operating in these fields would obtain the prevailing average profit.

However, contrary to the agricultural sphere studied by Marx, the oil sphere appears as a multi-stage industry (extraction, transportation, refining, distribution). Thus the market price of oil can only be grasped at the final stage of the industry, for prices that are exhibited at intermediary stages may have no relevance to the market at all, i.e. the posted price, for instance. In this context the magnitude of the surplus profit would emerge through the cost breakdown of a processed barrel of oil.

Table I.3: Cost breakdown of a barrel of average oil sold to French consumers (1973) \$/barrel

| | \$/b | % |
|----------------------|-------|-------|
| Production cost* | 0.17 | 1.1 |
| Freight cost* | 0.51 | 3.4 |
| Refining cost* | 0.73 | 4.8 |
| Marketing cost* | 1.01 | 6.7 |
| Exporting states tax | 1.07 | 11.2 |
| French tax | 7.67 | 50.6 |
| Company profit | 3.36 | 22.2 |
| Total: | 15.15 | 100.0 |

Source: Chevalier, J. M., *The New Oil Stakes*, Penguin Books, London, 1975, p.11.

*Costs encompass a fair rate of return on the invested capital.

Thus, in 1973 (before the so-called oil crisis), 84% of the market price of oil represented profit which was divided into three parts.

1. ground-rent for the oil exporting states (11.2%)
2. Tax levied by the French authorities (50.6%)
3. Surplus profit share of the oil companies (22.2%)

The fact that this price structure in France is similar to others prevailing in the other OECD countries³² suggests that taxes are actually an integral part of the oil price on a world scale and are not merely due to arbitrary actions of oil consuming countries' authorities. In this context the appropriation of most of the surplus profit by the oil companies and the consuming countries' tax authorities might mainly be due to the particular history on a world scale of the oil industry.

For the case of the oil rent is quite different from the ground-rent of nineteenth century England studied by Marx. Ground-rent represented the income of a class (the landowners) already in existence when the capitalist mode of production extended its base towards agriculture. Feudal landed property was transformed into modern landed property,³³ but the landlords remained conscious of their class's interest (cf. the House of Lords in Great Britain). The case of the oil rent, however, is rather different. The oilfield owning classes (represented by their relevant states) of the peripheral social formations have not had an existence of their own but are basically the product of capital and as such constitute a pure creation of colonial history (hence the multitude of sheikhdoms produced by British colonialism in the Middle East). Within this context the domination of landed property by capital, not only prevented the former from acting as a barrier to the latter but permitted it to appropriate most of the surplus profit. In this context the so-called energy crisis of 1973 may be interpreted as a change in the balance of power among the various actors in the oil scene.

In particular, the 1973 oil crisis may have shown the metamorphosis of the oil exporting states from passive tax collectors to active landlords (or capitalists) attempting to appropriate most of the surplus profit generated in the oil sphere as differential rent (for a survey see Chapter V, Part B). Thus far the objective conditions for the existence of differential rent seem to be fulfilled within the oil sphere. In his study of ground-rent, however, Marx discussed the second type of rent, which stems from the power of the landlords to extract a fee on the least fertile land.

The conditions for the existence of absolute rent in the oil sphere are, however, completely lacking. At the objective level, the oil industry exhibits a relatively high organic composition of capital. This fact implies that the value of oil must be lower than its production price. To the extent that absolute rent represents the difference between a high value and a lower production price, the only absolute rent that could appear within the oil sphere would be a negative one.

At the subjective level, on the other hand, the emergence of the Marxian absolute rent derives ultimately from the power of the landowning class as a class for itself to confront capital over the appropriation of surplus value created within the agricultural sphere.³⁴ Assuming the opposite of what has been implied above (that is, a low organic composition of capital in the oil industry), there is no sound ground for the argument that energy resource owners (coalfield, oil, gas, shale owners) on a world scale would identify each other, recognise their class interests and impose a fee (absolute rent) on capital for the exploitation of the least favourable energy field.

Thus, whereas under peculiar conditions (see Chapter V, Part B) the oil exporting states may appropriate surplus profit in the form of differential rent, there is no ground for the existence of absolute rent and their appropriation of it. Within this frame of reference the oil crisis of 1973, while increasing the magnitude of the differential rent appropriated by the oil exporting states, poses the basic problem of the consequences on the various national economies of a relatively important financial inflow.

4. On the impact of a resource boom on a domestic economy

While creating a euphoria on the part of the oil exporting states towards industrialisation, the 1973 oil crisis triggered a substantial literature on the subject of a resource boom and its impact on the domestic economy. This literature has been known as "Dutch Disease Economies" and investigates the paradoxical statement that resource booms may lead to de-industrialisation.

In its simplest form³⁵ the Dutch disease economy is divided into three sectors: the booming sector (B), the lagging sector (L) and the non-tradeable sector (N). While N may be visualised as services, B and L may represent mineral resources (oil for instance) and manufactures (or agriculture) respectively.

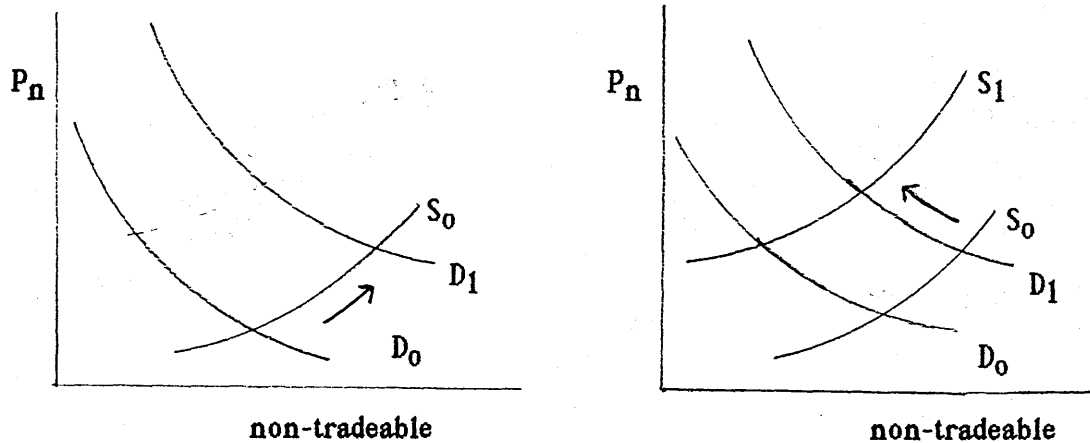
To study the effect of a resource boom on the domestic economy, a set of basic assumptions are put forward: (1) prices in B and L are determined on a world scale, (2) prices in N are determined by interaction of supply and demand within the domestic market, (3) output in each sector results from the combination of factors peculiar to that sector (natural resources, capital specific in the short run, and immobile labour) and (4) by a factor (labour) mobile between the three sectors.³⁶ All factor prices are flexible (to maintain full employment) and the economy's factor stock is fixed (which implies international immobility of capital and labour).

Under these assumptions a boom (in B) is brought into the picture. The boom may stem from either of the following causes: (1) a once and for all exogenous technical progress confined to this country, (2) a windfall discovery

of new resources, (3) a rise in the price of sector B product which is totally exported. The impact of the boom on the domestic economy may then be divided into two parts:

(1) The spending effect

Assuming a positive income elasticity of demand for N, the extra spending (by either factor owner or the state) brought about by the boom in B must lead to an excess demand (at pre-boom prices) for N. To the extent that prices of L are determined outside the domestic economy, the price of N relative to the price of L must rise (hence creating a real appreciation). This real appreciation would then result in a shift of resources out of B and L into N and a shift of demand away from N towards B and L as well.



P_n being defined as the relative price of N with respect to L, the boom in B would shift demand for N from D_0 to D_1 (hence P_n increases to restore equilibrium in N's market) and draw resource from B and L (under the assumption of pre-boom full employment). The transfer of resource from L to N would then bring about a fall in L's output, hence a de-industrialisation (or

de-agriculturation if L represents agriculture).

(2) The resource effect

As a result of the boom, the marginal product of labour in B rises so that if wages are expressed in terms of L's output, demand for labour from B will rise, hence bringing about a transfer of labour out of L and N into B. This movement of labour may be decomposed in two parts: (1) the transfer of labour from L to B implies a fall in L's output, hence reinforcing the de-industrialisation resulting from the spending effect; to the extent that this phenomenon does not involve N, it may be called "direct de-industrialisation". (2) At a constant real exchange rate (defined as the relative price of N to L) a movement of labour out of N into B takes place as well, hence shifting the supply curve of N from S_0 to S_1 (see graph above). This shift creates an additional excess demand from N and requires an additional increase of P_N (an additional real appreciation). This increase in the real exchange rate would then bring about an additional transfer of labour from L to N. The transfer of labour from L to N (brought about by the spending effect as well as the resource movement effect) can be termed "indirect de-industrialisation". Thus in this Dutch disease model, de-industrialisation (or de-agriculturation) is bound to happen following a resource boom. The fate of the non-tradeable sector N remains, however, uncertain. For whereas the spending effect tends to increase N's output, the resource movement effect tends to push it in the opposite direction (see graph above).

While this "core model" captures the basic features of the Dutch disease literature, an additional set of assumptions might increase its complexity but

would avoid its deterministic view about the fate of the lagging sector L. In particular the factors immobility assumption can only relate to a short run analysis. Its relaxation, however, may uncover different paths for the various sectors of the domestic economy.

(1) Resource boom and mobility of capital between L and N³⁷

Under this assumption, while labour is mobile as in the core model, sectors L and N draw from a common stock of mobile capital. Assuming that L and N operate under different capital intensities, they could make up a miniature Heckscher-Ohlin economy,³⁸ facing a variable supply of labour.

As in the core model, the impact of a boom can be divided into two parts: (1) at the initial wage rate, the resource movement effect emerges as an increase of B's demand for labour, hence reducing the amount available to the miniature H-O economy. According to Ryberzyński's theorem,³⁹ however, and under constant real exchange rate, the output of the capital intensive industry will expand. Thus if L is more capital intensive, then the resource movement effect will provoke pro-industrialisation; (2) through the mechanism of real appreciation, the spending effect would, however, tend to offset the resource movement effect by moving both capital and labour from L into N. The final outcome would therefore depend on the strength of the two effects. The assumption of capital mobility between L and N does nevertheless remove the inevitability of de-industrialisation.

(2) Decomposition of the lagging sector and capital mobility between components of this sector⁴⁰

While retaining all the core model assumptions, this case decomposes the lagging sector L into two industries of different capital intensities. Under the assumption that capital and labour are mobile between these two industries, the lagging sector may be visualised as a miniature Heckscher-Ohlin economy. Under the impact of a boom, labour would move out of L as a whole. Thus L's output must decline. To the extent that the stock of capital is fixed, the reduction of the amount of labour in this miniature H-O economy would result (according to Ryberzyński's theorem) in a contraction of the labour intensive industry but an expansion of the capital intensive industry.

(3) International mobility of capital⁴¹

Finally, the assumption of international immobility of capital may be relaxed in order to take into account a characteristic aspect of "developing economies". In this context the three sectors (B, L and N) employ specific capitals which are, however, internationally mobile.

Assuming at first the validity of the core model, the impact of a resource boom on returns in the various sectors may be stated as follows: (1) returns in L must fall because of the sector's contraction, (2) returns in B ought to rise (especially when they are measured in terms of L's output), (3) returns in N could either rise or fall, depending on whether N's output rises or falls. On the assumption that, before international mobility of capital, rents in L fall while they rise in B and N, international mobility of capital would result in an outflow of capital from L and an inflow of capital into B and N.

Thus, under the assumption of international mobility of capital, the contraction of L would be greater (hence de-industrialisation is emphasised). However, the decline in profitability in L would be less pronounced because of the capital outflow. On the other hand, capital mobility would tend to facilitate N's expansion, thus raising N's output and limiting the magnitude of the real appreciation required to restore equilibrium.

Thus far the core model and its variants do basically point to a likely decline in the tradeable sector (L) following a resource boom. To that extent the Dutch disease approach poses an obvious challenge to the oil exporting states in terms of their claimed goal of achieving a diversified economy. Hence, according to Dutch disease literature, the phrase "oil and development" ought to be replaced (after 1973) by the phrase "oil and (likely) decline".

The Dutch disease discourse, however, remains open to debate in so far as it is presented in terms of an "aseptic" three sector model. In this model, neither the class nature of the state (its social project in particular) nor the history of the social formations concerned appears as relevant to the comprehension of the studied realities. Under these circumstances, the relevance of the Dutch disease literature may be questioned at two different levels: (1) the validity of the basic assumption and (2) its capacity to grasp empirical phenomena and to serve as a guide for the transformation of the realities concerned.

One of the basic assumptions advanced by the Dutch disease discourse relates to the distinction between a traded good and a non-traded good sector. In so far as the analysis is set within a controlled economy (rather than an open economy) the dichotomy proposed above becomes questionable. In particular

the use of tariffs and import quotas by some oil exporting countries (Algeria in particular) may actually result in the empirical non-existence of a traded good sector. Within this context the resource boom would produce a spending effect (with a negligible resource movement effect over the rest of the economy) which would behave like the non-tradeable sector of the core model. Thus instead of witnessing a decline in the manufacturing sector, the controlled economy may exhibit growth in that particular sector as well as in the other sector of the economy. In actual fact, an empirical study undertaken by Gelb⁴² for the period 1972-81 showed a negative "Dutch disease index" for three oil exporting countries (of which Algeria was one) out of the seven studies.

A second aspect of this discourse concerns the assumption of full employment which is crucial to the resource movement effect. If this assumption is relaxed (which would put the core model closer to the reality of some oil exporting economies) then the resource movement effect may be attenuated. In particular the increase in demand for labour from B and N may draw from the "unemployed set" thus leaving labour in L at its previous level. Furthermore, because of the existence of the unemployed set, the increase in N's price (due to the spending effect) ought to be short-lived in so far as N's output would increase to the point where real exchange appreciation is completely eliminated. Under these circumstances, neither the resource movement effect nor the spending effect need follow a resource boom. In actual fact the same argument would apply to oil exporting economies (in the Middle East in particular) which rely on a foreign labour force to operate in various sectors of the economy.

Thus while the core model and its variants suggest a likely decline of the tradeable sector following a resource boom, different (but plausible) assumptions point to a different outcome. In actual fact empirical studies which attempted to test the validity of Dutch disease economies remain rather inconclusive. Apart from Gelb's study which could not find the clear symptoms of the Dutch disease for all cases studied, an analysis of other oil exporting countries by Roemer⁴³ ended up with the same "abnormal" pattern. Hence of six oil exporting countries studied by this author for the period 1970-1981, four (Kuwait, Nigeria, Indonesia and Mexico) experienced a growth in manufacturing equal or superior to that of the non-tradeable sector. Furthermore, for economies which may be closer to the frame of reference of the Dutch disease discourse (namely the Netherlands, Great Britain and Australia), the impact of a resource boom can hardly be separated from other no less important variables i.e. pre-boom structural features of the economy, government economic policy in particular.⁴⁴

In this context, the decline of the British manufacturing sector may have stemmed either from the exploitation of North Sea oil or from a deliberate government policy to spread "popular capitalism" by favouring the expansion of the service sector and reducing the power base of the unions. Thus, although Great Britain seems to exhibit Dutch disease symptoms, there is no ground for assuming that these symptoms are directly linked to the exploitation of North Sea oil.

Finally, rather than being confined to particular economies or historical moments, Dutch disease symptoms seem to emerge throughout history. Besides the classical example of sixteenth century Spain, Roemer⁴⁵ quotes the example

of 1920s France (receiving German reparations), Bangladesh, Turkey and Egypt (subject to income remittances from their expatriates) and even the USA after 1982 (as a recipient of capital flowing from abroad).

To the extent that the Dutch disease may emerge because of variables other than resource booms and in so far as a resource boom does not mechanically produce the disease, the pertinence of the Dutch disease discourse remains questionable. For rather than attempting to theorise evolving realities, the Dutch disease discourse tries to squeeze these contradictory realities into neutral models where even the state as the "general manager" of the dominant social groups is completely absent. Under these circumstances, theoretical development and empirical analysis remain almost completely disconnected. Hence while the "core model" and its variants investigate the evolution of sectors in an abstract setting, empirical analysis emphasises the importance of government policy as a basic element in approaching the outcome of a resource boom.

In so far as Dutch disease symptoms can be exhibited by a peculiar economy experiencing a resource boom, the proper field of investigation becomes the impact of the boom on this concrete social formation rather than on the "aseptic" economy of the Dutch disease discourse. The focus on the social formation class structure and the social project advanced by the dominant social groups would then relegate the effect of a resource boom to a mere variable that may facilitate or hamper the implementation of the given social project.

It is within this frame of reference that the phrase "oil and development" takes on any meaning. For contrary to the message propagated by the ideology of universal harmonies (of which the Dutch disease discourse is an integral part) there can be no development in the absolute but only development of social projects supporting and supported by relevant social classes or groups. Hence rather than speculating about the effect of a resource boom on an a-historical reality, the appropriate approach must start with a thorough study of the social formation concerned. And to the extent that the Algerian growth strategy develops a social project, an analysis of the impact of oil and gas exploitation as well as the 1970s resource boom can be apprehended only in so far as they are integrated within the social project which the Algerian state has been attempting to implement.

5. Theoretical aspects of the Algerian social project

The rejection of the colonial economy as a first step in the newly independent Algerian government's understanding of under-development required the calling into question of Algeria's close association with the French economy. In particular, Algeria's traditional position as an extension of the French economy could no longer be accepted by Algeria's nationalist rulers.

In the Algerian context, the growth path that emerged as the path required a reformulation of the Algerian economy's position vis-à-vis the French economy in particular and the world economy in general. Industrialisation of the economy would then constitute the first slogan advanced by Algerian policy-makers. On the other hand, the introversion of the economy as a strategy, aimed at destructuring-restructuring the colonial economy, represented the strategy which would (according to Algerian policy makers)

change Algeria's position in the international division of labour.

5.1 On the introversion of an extroverted economy

The introversion of the economy as a strategy for tackling underdevelopment could be related to Samir Amin's theorising⁴⁶ of the world capitalist system.

Amin divides the world capitalist system into a centre and a periphery, the former being the dominant side and the latter the dominated side of the unity. Within this framework, underdevelopment is no longer interpreted as a backward stage but is understood as a consequence of the capitalist system's expansion (from the centre) towards social formations which were still pre-capitalist. Hence, according to Amin, the spread of the capitalist system created a periphery, the industrialisation and the development of which would only be possible through a gradual breaking with the capitalist world market or, in other words, with the capitalist international division of labour.

In this respect Amin develops two opposed accumulation models by arguing that "whereas in the autocentred accumulation model, external relations are subjected to the logic and imperatives of internal accumulation, in the extroverted model, on the contrary, external relations determine almost totally the rhythm and characteristics of internal accumulation."⁴⁷ Through a four sectors scheme, Amin, then, develops the two opposed models.

(1) The extroverted model is based on the growth and articulation of two sectors: an export sector and a luxury goods sector. The articulation of these sectors then realises and is supported by a class alliance between a compradore

bourgeoisie (particularly involved in the export sector) and an agrarian bourgeoisie (producing crops destined for external markets).⁴⁸ Within this framework, capital accumulation (investment decisions, production levels, etc.) is determined and dependent on the conditions of the world market, and the ruling classes' interests are fulfilled through their obedience to the capitalist international division of labour or, in other words, towards transnational firms' policies.

(2) On the contrary, the introverted model relies on the development and articulation of two other sectors: a sector producing means of production and a sector producing mass consumption goods.⁴⁹ Within this model the accumulation process does not obey any longer the capitalist international division of labour. On the contrary, classical criteria of capitalist rationality (e.g. competitiveness, profit maximisation) are to be disregarded in favour of a voluntaristic approach to investment decisions. Hence the accumulation process, or in other words the rate of investment, is basically determined by the internal (social and economic) conditions of the domestic economy.

Under these circumstances, development through export-led growth or import substitution industrialisation are ruled out on the grounds that:

(1) the first policy (export-led growth) is based on sectors that were (in most cases) created for the benefit of "central economies" capitalist classes. To that extent production of raw material and consumption goods by the use of a cheap labour force have resulted in an increase in the overall profit rate and a transfer of value through "unequal exchange".⁵⁰ On the other hand, because of their external outlets, export sectors have no motivating effects (forward

linkages) on the rest of the economy.⁵¹ Their development has, however, strengthened the power of the ruling compradore bourgeoisie and apparently marginalised large masses whose potential demand could not be met because of lack of income.⁵² Capital accumulation in this model is not actually related to internal conditions of the national economy (the articulation between Marx's departments one and two) but depends on capital accumulation taking place in central economies.

(2) The second alternative (i.s.i.) has historically been a response to the "dead end" of the first one and actually aimed at satisfying the effective demand⁵³ of the ruling social groups whose interests are guaranteed by a greater insertion into the capitalist world market. In this context, the process of resource allocation would be distorted in favour of luxury goods branches and would accentuate, as in the previous policy, the marginalisation of the large masses through impoverishment and proletarianisation.

Thus, according to Amin's approach, export-led growth and import substitution industrialisation constitute obsolete policies in terms of overcoming the problem of underdevelopment to the extent that they do not go beyond the capitalist international division of labour. The aim of the latter being the perpetuation of the centre's domination, the two policies mentioned above can only deepen (although with different features) the insertion of the peripheral economies into the capitalist world market, thereby increasing their dependency towards decision centres which are out of their reach. Within the autocentred model, however, the focus on the development of the forces of production, while avoiding the question of the class nature of the state, could then suit and justify the taking over of power by a nationalist movement, the

survival of which depends on its continuing the anti-colonial struggle.

Despite its recognition of external contradictions (between peripheral economies and the logic of the world capitalist market) Amin's approach does not fully apprehend the fundamental question of the class nature of the state. Of particular importance, the class structure of the social formation concerned and the nature of the dominant racial groups are not explicitly taken into account. Within this context Amin's frame of reference leaves room for any social group to claim its willingness to implement an autocentred economy. The extent to which the Algerian dominant social groups intend to build an autocentred economy and perhaps avoid the Dutch disease symptoms remains to be tested at two levels: (1) the practicality of their strategy as an actual opportunity to circumvent the Dutch disease, and (2) the ability of the dominant social groups to lead the claimed growth strategy to its logical outcome.

5.2 Growth through implementation of industrialising industries

The alternative facing a nationalist movement whose leaders tend to continue the struggle against colonialism by a struggle against the capitalist international division of labour would, then, exhibit a particular emphasis on the building of an "independent and national economy".

The building of the latter would require, according to the official view, the implementation of a heavy industry, the basic goal of which would be to provide the rest of the economy (agriculture in particular) with necessary tools, fertilisers, machines, etc. in order to avoid dependency vis-à-vis the world market. The choice of a heavy industry actually constituted a "voluntaristic" decision to the extent that on purely economic criteria the short and medium

term profitability of the projects concerned remains highly questionable, especially when excess capacities in various heavy industries (petrochemistry and steel in particular) on a world scale is taken into account. However, as argued by Algerian officials,⁵⁴ despite its loss making, the mere existence of a domestic heavy industry would produce linkage effects which would make it profitable in the long term.

Hence, although opposed to the conventional view advanced by the comparative advantage theory⁵⁵ (in its Ricardian or neo-classical form) the Algerian policy makers' choice, nevertheless, relies on a certain understanding of underdevelopment and the theorising of Professor De Bernis who has been theoretically (he is considered as the father of the Algerian growth strategy by many French and Algerian scholars) and practically (he participated in the studies which started the Algerian planning process in 1967) involved in the implementation of the Algerian growth strategy.

De Bernis' theorising has its foundations⁵⁶ on Perroux' description of underdevelopment. The latter argues that underdevelopment "is a historically dated phenomenon, that is to say, it is the product of a history and not a normal and natural stage of history, a phenomenon that developed countries have not known. Underdevelopment is not a conjunctual phenomenon or a backward stage but a structural phenomenon, a growth blockage."⁵⁷

Underdevelopment then, being reduced to a structural phenomenon, appears as a result of the capitalist system's expansion: domination of pre-capitalist social formations (Amin's thesis) on the one hand and is concretised by the disarticulation of the peripheral economies; extroverted sectors, the

growth of which depends on external conditions, on the other hand. To overcome this situation and to restart growth, Perroux develops the theory of the propulsive firm (*firme motrice*) within a growth pole. This particular firm is defined as a production unit which "is relatively large, generates significant growth impulses to its environment, has a high ability to innovate and finally belongs to a growing sector."⁵⁸

Considering Perroux' growth pole theory, De Bernis expands it to the economy as a whole and develops the theory of industrialising industries⁵⁹ through a basic framework: industry hierarchy within the inter-sectoral matrix, the filling in of which would lead to the domestic economy's integration. This understanding of underdevelopment leads De Bernis to argue that to industrialise, an underdeveloped economy ought to start implementing capital goods rather than consumption goods industries because, according to him, industries which produce means of production are those which possess the greater motivating (linkage) effect (*effet d'entrainement*).⁶⁰

Thus, contrary to Hirshman⁶¹ and in accordance with Feldman⁶² and Mahalanobis,⁶³ De Bernis seems to favour forward linkages to backward ones. Following De Bernis, capital goods industries must be developed in priority in order to avoid the "dead end" resulting from export-led growth or import substitution industrialisation policies. Having noticed the existence of a hierarchy among industrial sectors,⁶⁴ (and making an apparently original contribution), De Bernis defines then the motivating industries for the peripheral economy as:⁶⁵

1. a global sector producing means of production (industrial equipment, machine tools, engines, etc.)
2. the chemical industry's main branches (e.g. sulphur, electro-chemistry, fertilisers)
3. the energy sector, the output of which is required for the functioning of the whole economy

These industrialising industries are then defined as those "the basic economic function of which is to motivate in their historically specified and localised environment a systematic filling-in or a structural modification of the inter-industrial matrix and transformations of production functions."⁶⁶ The choice of heavy industries is then taken on the ground that (1) their motivating effects are greater and should emerge faster than the other industries' effects; (2) their tendency to fill in the inter-industrial matrix is stronger and realises the basic condition of development, namely, integration.

Contrary to other industries (consumer goods industries), industrialising industries are, thus, according to De Bernis, capable of restructuring an extroverted economy through the creation of firm relations with agriculture by modernising it and increasing the living standards of the population on the one hand, and producing means of production for light industries on the other.

If industrialising industries seem to have such a strong effect on a peripheral economy, they do, however, require the availability of financial assets in order to start the industrialisation process, because (1) they are highly capital intensive and therefore require from the very beginning imports of

means of production; (2) being large scale industries, they need a wide domestic market, otherwise they could not operate efficiently. The consequences of the first requirement are that the industrialising industries cannot emerge through a market oriented policy (if profit is the main objective) but only within a controlled economy. For the necessary relations among various sectors are to be created outside classical management criteria. Private capital (if there is any) has, in this context, no incentives for undertaking the task of implementing such a strategy.

Secondly, the conditions of a wide market implicitly require a restructuring of the economy and especially of the agricultural sector in order to liberate the potential demand of the large masses on the one hand, and to increase agricultural output on the other. The two conditions (some sort of planning and the creation of the market) impose, then, the building of a leading public sector and the emergence of the state apparatus as the main entrepreneur on the one hand, and the existence of important (potential) financial resources in order to meet the heavy investment required, on the other hand.

At first sight the Algerian social project, theoretically supported by Amin's and De Bernis' theorisings, appears as needing a resource boom (to obtain the required funding) in order to achieve its claimed goal of building an "independent and national economy". Hence, contrary to the message advanced by Dutch disease economics (a likely decline of the tradeable goods sector) in the Algerian context (and because of the social project presented by the dominant social groups), it is the resource boom which constitutes an objective (and to some extent necessary) factor for the implementation of a diversified economy (of which the manufacturing sector constitutes an element).

To the extent that the resource boom, in the Algerian case, materialises the appropriation of a larger share of the oil rent by the Algerian state, the oil rent (its appropriation and its use) becomes the central concept upon which the actual evolution of the Algerian growth strategy, on the one hand, and of the "original" class structure of this social formation on the otherhand, may be understood. The appropriation of the oil rent nevertheless encompasses a contradiction, for the logic of the rent may oppose the logic of production: the rent produces the ideology of the rentier who can only survive if the rent remains an essential social relation.

In so far as the appropriation of the oil rent is understood as a transfer of value created outside the Algerian economy, the completion of the social project advanced by the Algerian state may then emerge without help from the domestic productive sphere. Hence, although the official ideology emphasises the discourse of production and attempts to mobilise the nation (presented as a non-contradictory unity) for the battle against underdevelopment, the rent develops an opposite discourse which calls for a distribution of this "gift of nature" for the sake of internal peace.

To that extent, symptoms of the Dutch disease may emerge, for the mastering of efficient and growing productive sectors is not a requirement for the dominant social groups staying in power. Hence the practicality of the Algerian growth strategy depends ultimately on the use to which the oil rent is subjected. Inasmuch as its use is controlled by a state which performs the task of the general manager of the dominant social groups, a detour into the historical process which produced this state may constitute the appropriate first step towards understanding the evolving Algerian scene.

NOTES

1. Hotelling, H. (1931) The economies of exhaustible resources, *Journal of Political Economy*, Vol. 39, No. 2, pp.137-175.
2. Solow, R. M. (1974) *American Economic Review*, Vol. 64, pp.1-14. Sweeney (1977) *Review of Economic Studies*, Vol. 44, pp.125-141. Pindyck (1978) *Journal of Political Economy*, Vol. 86, No. 5, pp.841-861. Levhari (1981) *Quarterly Journal of Economics*, Vol. 96, No. 3, pp.365-377.
3. Dasgupta, P.S. and Heal, G.M. (1979) *Economic Theory and Exhaustible Resources*, Cambridge University Press, Ch. 6.
4. Dasgupta and Heal *op. cit.*, Ch. 11.
5. Davidson, P. (1979) Natural resources, in Eichner, A.S. (ed) *A Guide to Post-Keynesian Economics*, Macmillan Press Ltd., p.153.
6. Pindyck, R. (1981) Models of resource markets and the explanation of resource price behaviour, *Energy Economics*, No. 3, p.136.
7. Solow, R.M. (1974) The economics of resource or the resource of economics, *American Economic Review*, Vol. 64, supplement, p.2.
8. Eagan, V. (1987) The optimal depletion of the theory of exhaustible resources, *Journal of Post-Keynesian Economics*, Vol. IX, No. 4, summer.
9. Adelman, M.A. (1982) OPEC as a cartel, in Griffin, J.M. and Teece, D.J. (eds), *OPEC Behaviour and World Oil Prices*, George Allen and Unwin, London, pp.37-63.
10. Griffin, J.M. and Teece, D.J. (1982) *OPEC Behaviour and World Oil Prices*, George Allen and Unwin, London, p.13.
11. Johany, Ali D. (1980) *The Myth of the OPEC Cartel: The Role of Saudi Arabia*, John Wiley and Sons Ltd., New York.
12. Teece, D.J. (1982) OPEC behaviour: an alternative view, in Griffin, J.M. and Teece, D.J.(eds) *op. cit.* pp.64-93.
13. Adelman, M.A. *op. cit.*, p.44.
14. Moran, T. (1982) Modelling OPEC behaviour: economic and political alternatives, in Griffin, J.M. and Teece, D.J. (eds) *op.cit.* pp.94-130.
15. Moran, T. *op. cit.*, p.104.
16. Roncaglia, A. (1985) *The International Oil Market*, Macmillan Press Ltd., London, p.38.

17. Roncaglia, A. *op. cit.* p.43
18. Chevalier, J.M. (1975) *The New Oil Stakes*, Penguin Books Ltd.
19. Chevalier, J.M. (1975) Elements théoriques d'introduction à l'économie du pétrole: l'analyse du rapport de force, *Revue d'Economie Politique*, No. 2, Mars/Avril, p.232.
20. The cost in evolution covers the same reality as the maximum economic finding cost (MEFC) introduced by Adelman, M.A. in *The World Petroleum Market*, Johns Hopkins University Press, 1972, p.6.
21. Chevalier, *op. cit.*, p.12.
22. Marx, K. (1981) *Capital: A Critique of Political Economy*, Penguin Books, Vol. 3, p.752.
23. Marx, K. *op. cit.*, p.936.
24. Marx, K. *op. cit.*, p.782.
25. The production price is defined in the Marxian framework as the cost price plus average profit.
26. Marx, K. *op. cit.*, p.884.
27. Marx, K. *op. cit.*, p.889.
28. On the subject of articulation between the capitalist mode of production and the feudal mode see Marx K. *Capital*, Vol. 1, Part 8: So-called primitive accumulation.
29. Marx K., *op. cit.*, Vol. 3, p.894.
30. Marx, K. *op. cit.*, Vol. 3, p.896.
31. Eden, R. and others (1981) *Energy Economics*, Cambridge University Press, London, p.274.
32. Tugendhat, C. and A. Hamilton (1975) *Oil, The Biggest Business*, Eyre Methuen, London, p.211.
33. Marx, K. Vol. 3. *op. cit.*, p.754.
34. Marx, K. Vol. 3. *op. cit.*, p.896.
35. Corden, M. (1984) Booming sector and Dutch disease economics: survey and consolidation, *Oxford Economic Papers*, No. 36, pp.359-380.
36. Corden, M. (1982) Booming sector and Dutch disease economics: a survey, *Working Paper*, No. 079, Australian National University, pp.5 and 6.

37. Corden, M. and Neary, J.P. (1982) Booming sector and de-industrialisation in a small open economy, *Economic Journal*, No. 92, p.833.
38. See Shone, R. (1972) *The Pure Theory of International Trade*, Macmillan Press Ltd., Ch. 3.
39. Rybczynski, T.M. (1955) Factor endowment and relative commodity prices, *Economic New Series*, Vol. XXII, Nos. 85-88, p.336-341.
40. Snape, R.H. (1977) Effects of mineral development on the economy, *Australian Journal of Agricultural Economics*, Vol. 21, No. 3, 1977, pp.147-156.
41. Bruno, M. and J. Sachs (1982) Energy and resource allocation: a dynamic model of the Dutch disease, *Review of Economic Studies*, Vol. 49, pp.845-859.
42. Gelb, A.H. (1986) Adjustment to windfall gains: a comparative analysis of oil exporting countries, in Neary, J.P. and Van Wijnbergen, S. (eds) *Natural Resources and the Macro-Economy*, Basil Blackwell, p.81-82.
43. Roemer, M. (1985) Dutch disease in developing countries: swallowing bitter medicine, in Lundahl, M. (ed) *The Primary Sector in Economic Development*, Croom Helm, p.242-243.
44. Forsyth, P.J. (1986) Booming sectors and structural change in Australia and Britain: a comparison, in Neary, J.P. and Van Wijnbergen, S. (eds) *op. cit.*, p.252-284.
45. Roemer, M. *op. cit.*, p.327.
46. Amin, S. (1974) *Accumulation on a World Scale: A Critique of the Theory of Underdevelopment*, MPR, New York and London.
47. Amin, S. (1981) *L'Echange Inégal et la Loi de la Valeur, le Fin d'un Débat*, ed. Anthropos, 2nd edition, Paris, p.246.
48. Colonial Algeria obviously fits this model.
49. As in Marx's reproduction schemes.
50. Amin, S. (1981) *op. cit.*, p.70.
51. For a critique of export-led growth policy see Prebich, R. (1962) The economic development of Latin America and its principal problems, in *Economic Bulletin for Latin America*, Vol. VII, No. 1. See also Tavares, M.C. (1964) The growth and decline of import substitution in Brazil, in *UN Economic Bulletin for Latin America*, Vol. IX, No. 1, March.
52. The marginalised masses are actually integrated in the dominant capitalist system through the articulation of the latter with pre-capitalist mode(s) of production.

53. Prebich, R. (1976) A critique of peripheral capitalism, in *CEPAL Review*, Ch. 2 in particular.
54. Ministère de l'Information et de la Culture, (1971) *Le Choix Industriel de l'Algérie*, Alger, p.16.
55. The comparative advantage theory takes the international division of labour as natural instead of apprehending it as a historical phenomenon resulting from the capitalist system expansion.
56. Although De Bernis mainly recognises his being influenced by Professor. Perroux, his developments are more related to Hirshman theorising through the input-output matrix and the linkage effects analysed using the latter. See Hirshman, O. (1977) A generalised linkage approach to staples, in Nash, M. (ed) *Essays on Economic Development and Cultural Change*, Vol. 25, supplement.
57. Perroux, F. (1983) Trois outils pour l'analyse du sous-développement, quoted in Hamel, B. *Système Productif Algérien et Indépendance Nationale*, OPU, Alger, p.118.
58. Hermansen, T. (1972) Development poles and..., in Kuklinski, A. (ed) *Growth Poles and Growth Centres in Regional Planning*, Mouton, Paris, p.22.
59. De Bernis developed his approach in two basis papers: (a) Industries industrialisantes et contenu d'une politique d'intégration régionale, *Economie Appliquée*, Tome XIX, No. 3-4, 1966; (b) Industries industrialisantes et les options algériennes, *Revue Tiers-Monde*, No. 47, T XII, 1971.
60. This statement seems to be confirmed by Chenery and Watanabe, quoted in Hirshman, O., *Strategy of Economic Development*, New Haven, Yale University, 1958, p.116.
61. Hirshman, O. (1958) *op. cit.*, p.116.
62. Feldman (1957) On the theory of national income, quoted in Domar, E.D. *Essays on the Theory of Economic Growth*, Oxford University Press, Ch. IX.
63. Mahalanobis (1963) *The Approach of Operational Research to Planning in India*, Asia Publishing House, New York.
64. Concerning Europe, De Bernis argues that coal mining was a motivating industry in the eighteenth century followed by iron and steel in the nineteenth century.
65. See Note 59b, p.548.
66. See Note 59a, p.419.

CHAPTER II
COLONIAL BACKGROUND, OIL RENT AND THE ALGERIAN
GROWTH STRATEGY

The growth strategy chosen and implemented by the Algerian state can best be understood as a consequence of three peculiarities:

1. The official rejections of the basis of the colonial economy (experienced for more than a century) which polarised the Algerian society into a wealthy population of French origin and an impoverished indigenous population.
2. The "Frontist" framework (a unity of the indigenous population against the French colonists) which required the negation of an internal class struggle for a cohesive national purpose.
3. The existence of a strategic resource (hydrocarbon) which could be used to finance a growth strategy without putting the burden of growth on any particular class.

The building of an "independent and national economy" then assumed implicitly the drive towards industrialisation as the main factor in breaking with the colonial structure of the Algerian economy. This latter had nevertheless been in a process of transformation before independence (1962) when hydrocarbon reserves were discovered in the Sahara (1954).

The colonial background that Algerian policy-makers aimed at destroying had in fact been already called into question by the French state through the implementations of the *Plan de Constantine* (section 1-4 below). This plan

constituted a turning point in capital accumulation within the Algerian scene to the extent that it attempted to restart a growth process that colonial capital would not undertake and aimed at a growth process which would not disturb the colonists' interests (by relying on external sources to finance industrialisation).

The main objectives of the *Plan de Constantine* would however reappear (covered with the appropriate terminology) within the Algerian state's adopted growth strategy. This strategy (while developing a nationalist rhetoric) claimed ¹ to implement a growth process that was lacking during the colonial period and develop the level of productive forces by relying on the oil rent for the financing of the industrialisation process.

The similarity between the French state policy towards the Algerian economy and the growth strategy advanced by the Algerian state suggests that, far from being contradictory, both approaches covered the same historical moment in the process of capitalist development within the Algerian social formation: both approaches constituted an attempt to achieve "primitive accumulation" (destruction of pre-capitalist forms of production as a condition for the expansion of the capitalist mode of production) which started with the French invasion of 1830.

1. The implantation of the colonial economy

The implantation of the colonial economy (as a realisation of primitive accumulation) took shape through the collapse of the Turkish state apparatus (and its replacement by the French state) and the gradual destruction of pre-capitalist forms of production and their replacement by capitalist social relations. The easy collapse ² of the Turkish state was a result of particular

features displayed by the prevailing relationship between that alien state and the different communities (tribes) composing the Algerian society.

The Turkish state was not involved in the production process that was taking place within the tribes' land. Its only role consisted of receiving its annual tribute from the different tribes that were not under its direct control.³ In fact the *dey*⁴ (governor) and his three provincial *bey* (regional authorities) relied upon some privileged tribes to impose and extract taxes from the rest of the communities.

The tribes mostly semi-nomadic, on the other hand, owned collectively the land they were living on. Within this particular structure, land was neither bought nor sold, for alienation of the land would destroy the tribes' unity and stop the reproduction of the system.

The weakness of the relationship between the state and its agents on the one hand and the other tribes on the other can be thought of as the main cause of the easy collapse of the Turkish state when faced with the French invasion of Algeria (1830) and of the difficulty (for the French) to penetrate and destroy the pre-capitalist forms of production that supported the tribes' economy.

From the tribes' viewpoint, the existence or non-existence of the Turkish state did not in any way influence the "routine" of the labour process. The submission of the Turkish state and afterwards its destruction as a political power were thus irrelevant to the continuation of the labour process on the tribes' land. While the Turkish political apparatus collapsed as soon as the

French army arrived in Algeria, it took a much longer time for the French to destroy (although only partially) the pre-capitalist structures of the tribes.

1.1 The destruction of pre-capitalist forms of production

The destruction of the pre-capitalist forms of production can be studied through an analysis of the 1830-1880 period. The latter may, in this instance, be grasped as the period of primitive accumulation (as the dominant social process) whereby pre-capitalist social relations are destroyed in order to create the two poles of the capitalist production process: private ownership of the means of production and the existence of "free" workers.

a. The means of destruction

The laws applied to Algeria were mostly derived from the French legislation and had as a main target the destruction of collective ownership of the land and the emergence of private ownership, the latter being the core upon which capitalist social relations can exist and under specific conditions be reproduced.

The collapse of the Turkish state apparatus put into the hands of the French authorities all that the former had as prerogatives. In particular the land formerly owned by the Turkish state was to be given (rarely sold) to the French colonists who benefited then from 653,000 hectares.⁶ Secondly the form of the tribute was transformed into money-rent after 1846.⁷ This decision opened the way to a market oriented economy (the peasants had to sell part of their output in order to pay taxes) which was to have strong effects on the pre-capitalist structures: in particular cash crops would replace food production. Thirdly the *habous* land (owned by religious authorities) was simply seized (7 December 1830) and given or sold to the colonists. Then on 22nd April 1863, the *Senatus*

consulte declared the Algerian tribes, the owners of the territories they occupied. But beyond this form of collective ownership it was decided to delineate the tribes' territories and set up individual ownership of the land.⁹ This process was developed through the Warrier law (26 July 1873) which

"permitted settlers to confiscate indigenous farm properties when the *fallahin* (peasants) could not show good title to them"¹⁰

Finally the French authorities confiscated the land of any tribe that fought them. Thus from 1871 to 1910, more than half of the real estate occupied by colonisation came from sequestered land that covered a million hectares.¹¹ The shrinkage of the indigenous sector and the expansion of the colonist one, then, fulfilled the two main conditions of capitalist reproduction.

By 1895 the indigenous sector lost more than 5 million hectares whereas its population kept on increasing (see Appendix II.1). The shrinkage of the indigenous land then resulted in an overpopulated sector that had to "liberate" part of its members in order to survive (the level of productive forces remaining stagnant). On the other side, the expansion of the colonist sector constituted the basis upon which capitalist production could take place by hiring indigenous workers.

b. The consequences

The expansion of the colonist sector thus destroyed the tribes' economy as a unity and led to the deterioration of the living conditions of the indigenous population. For with the same level of productive forces the indigenous sector lost more than 5 million hectares. And in addition decades of colonial war ruined most of the indigenous economy through payment of war damages.

sequestration of land etc.

In this context the 1871 insurrection resulted in: ¹²

- A loss of 444,406 ha. that were appropriated by the French authorities.
- The payment (by the indigenous tribes) to the French authorities of 64,739,075 gold francs as war damages. The latter figure actually represented 70% of the indigenous capital (land and livestock essentially).

3. Finally the extreme impoverishment of the indigenous population can be visualised through an analysis of the land concentration in the hands of a minority and in the emergence of a small peasantry who, deprived of the tribes' backing, can only survive as an appendix to the so-called modern sector.

The small peasantry, ¹³ then, constituted the majority of the Algerian peasantry.

Table II-1: Land ownership (1930)

| | Size | Number of holdings | % | Area | % |
|------------------|------------------|--------------------|----|-----------|----|
| <u>Indigenes</u> | less than 10 ha. | 434,500 | 70 | 1,738,000 | 23 |
| | 10-50 ha. | 140,000 | 23 | 2,635,000 | 35 |
| | more than 50 ha. | 42,935 | 7 | 3,188,000 | 42 |
| <u>Colonists</u> | less than 10 ha. | 8,877 | 34 | 42,500 | 2 |
| | 10-50 ha. | 7,140 | 28 | 21,600 | 9 |
| | more than 50 ha. | 10,136 | 38 | 2,085,300 | 89 |

Source: Statistiques agricole et statistique générale, quoted from Henni, A. (1982) *La Colonisation Agricole et le Sous-Développement en Algérie*, SNED, Alger, p.52.

The division of agriculture into a modern (colonists) and a traditional (indigenous) sector does not however confront the articulation of these sectors as a requirement for colonial expansion:

- The indigenous sector constituted the material basis upon which the modern sector expanded. This process meant that the so-called traditional (indigenous) sector emerged with the expansion of the modern one.
- The price of the indigenous labour force in the modern sector was determined by the living conditions of the traditional sector and was held at a relatively low level because of the existence of a "reserve army: the wage rate facing the indigenous labour force was on average less than half the wage rate of the European labour force working in Algeria (1.15F/day for 3.16 F/day in 1914).¹³"
- The colonisation's expenditure was in great part financed by the indigenous population through war contributions and fines: 70% of the colonisation spending over the period 1830-1900 came from ransoms and fines paid by the indigenous population.¹⁴
- Finally the tax system was obviously biased in favour of the colonist's sector.

Indeed the indigenous sector was heavily taxed but did not actually benefit from public spending: out of a budget of 356 million francs (1901-1905) the indigenous population received 12.04 million (3.38%) whereas its contribution through taxes amounted to 217 million (60.9% of total receipts).¹⁵

Thus, far from evolving apart, the traditional sector and the modern one were articulated¹⁶ in order to fulfil the requirement of capitalist expansion represented by the colonists' sector.

In the Algerian context the so-called traditional sector and its peculiar features (in particular small plots of land owned by subsistence farmers) did not exist before colonisation but emerged along with the expansion of the colonist (modern) sector and represented a necessity for its development. Development (of the colonist sector) and decline (of the indigenous sector) were thus the opposite sides of the same unity and constituted a particular moment in the development of the capitalist mode of production within the Algerian scene.

1.2 The development of agrarian capitalism

The emergence of the modern sector was thus the result of French government long term policy insofar as, contrary to its neighbours (Tunisia and Morocco), Algeria was from the beginning of colonisation considered as part of France. In this respect Algeria was to be a settlement colony in order to lessen the internal contradictions of the French society which:

- got rid of its unemployed ¹⁷ (between 1848 and 1850, 20,500 unemployed individuals were sent to Algeria) to avoid social unrest.
- sent its decadent aristocracy far from Paris (princes and counts received thousands of hectares to recreate their domains) ¹⁷
- used Algeria as a source of cheap agricultural products and later raw materials.

The cheap products would be the result of low cost of production:

- the colonists were offered the land but did not pay any rent

- the wage rate was lower than the subsistence level ¹⁸ since part of the reproduction of the Algerian labour-force was borne by the traditional sector.

Due to its position as a colony, the Algerian economy would therefore no longer develop as an integrated structure but could only be understood as an appendix to the French economy. In this context the first decades of French colonisation created the conditions for the reproduction of agrarian capitalism (private ownership of the land and existence of "free" workers).

Besides the conditions mentioned above, the market widening due to the custom union between France and Algeria (16 January 1851) and the increase in the expected rate of investment due to a potentially growing demand have resulted in the spread of financial ¹⁹ institutions that opened the Algerian market to metropolitan interests. In fact the spread of these financial institutions was to be related to capital accumulation, the realisation of which was mainly through vineyard expansion and cereal cultivation.

a. The vineyard expansion

The destruction of the French vineyards by phylloxera (1875) gave the colonists an opportunity to develop vineyards in Algeria. Thus whereas vineyards covered only 24,000 ha. in 1880 they reached 399,000 ha. in 1939. ²⁰ Since the amount of wine produced in the metropolis was reduced to less than 30 million hectolitres, whereas consumption amounted to about 60 million hl/year, ²¹ Metropolitan France engaged in imports of wine from abroad.

Imports from Italy and Spain had however been gradually squeezed in favour of Algerian wine which represented 70.8% of total French wine imports by 1905 (as opposed to 0.2% in 1880).²² On the other hand, by 1900 wine became the most important item in the Algerian export structure (50% of total import on average).²³ Furthermore, exports of wine to France constituted the main outlet of the colonist output.

Table II-2: Output and export of Algerian wine (100 hl.)

| Year | Output | Export | % of Export |
|----------|--------|--------|-------------|
| 1919 | 6,230 | 4,352 | 70 |
| 1925 | 10,141 | 7,396 | 73 |
| 1927 | 8,402 | 7,129 | 85 |
| 1930 | 12,821 | 10,939 | 85 |
| 1936-40* | 16,070 | 12,235 | 76 |
| 1941-45* | 9,654 | 3,117 | 32 |
| 1946-50* | 11,751 | 9,436 | 80 |
| 1951-55* | 15,608 | 12,908 | 83 |
| 1956-60* | 15,200 | 12,800 | 84 |

Source: Benachenhou, A. (1978) *Formation du Sous-Développement en Algérie*, pp.199 and 247

* annual average.

The colonists' vineyards seem then to have been viable only inasmuch as output could be exported to the French market. The flow of wine from Algeria to France had however been regulated not by the market but by structural factors which stemmed from the colonial features of the Algerian social formation:

- The French colonists faced no costs in terms of ground-rent insofar as most of their land was simply seized from the indigenous population.
- Secondly, to the extent that the destruction of the indigenous economy resulted in the emergence of a reserve army, the colonists faced an unlimited supply of labour, hence a lower wage rate than their counterpart in Metropolitan France.
- Thirdly, winegrowers (as all colonists in Algeria) had not been subjected to taxation until 1918. After the 1918 tax reform, however, they faced taxes, but of a lower magnitude than their counterpart in Metropolitan France.

Table II.3: Rate of taxation in Algeria and in France (after 1918)

| | Algeria | France |
|---------------------|---------|--------|
| built property | 5% | 12% |
| non-built property | 5% | 12% |
| agricultural profit | 3.5% | 7.2% |

Source: Violette, M., quoted in Benachenhou, *op. cit.*, p.153.

- Finally to avoid competition from Spanish and Italian wines, a tariff protection was set up against these wines and which were gradually driven out of the Metropolitan market.²⁴

Taking advantage of their privileged position vis-a-vis their counterpart in France and despite the regeneration of Metropolitan vineyards (which was completed by 1900) the colonists' wine production became the central feature of the Algerian economy and represented 46.3% of total colonists' output by

1934.²⁵ The expansion of the colonists' vineyard seemed then to have entirely depended on the French market and particularly on the French government's willingness to accord a special status to its colony.

b. Cereal cultivation

Traditionally, hard wheat and barley were the most common cereals produced by the indigenous population. Most of the output however was destined to the peasants' self-consumption. The surplus (if any) was either stocked (as a security for the future) or exchanged to obtain tools or some other agricultural products.

The colonists would not however be satisfied by a production pattern which was not geared towards the market. Cereal cultivation was then developed by the colonists but was actually aimed at satisfying the Metropolitan market (as also occurred for wine). Thus began an export of cereals from Algeria to France.

Table II.4: Export of Algerian cereals (1855-1947)

| Year | Quantity (quintal) | Value (Million Francs) | % of cereal in Total export |
|------|--------------------|------------------------|-----------------------------|
| 1855 | 1,515,000 | 22 | 30 |
| 1900 | 2,161,000 | 37 | 15 |
| 1915 | 2,083,000 | 54 | 10 |
| 1930 | 4,060,000 | 540 | 12 |
| 1947 | 81,000 | 103 | 0.25 |

Source: Henni, A., *op. cit.*, p.181.

The dynamism of the export sector, although rewarding for the colonists, was nevertheless based on a tariff protection that avoided competition with cereals coming from Canada and Australia (the latter were taxed up to 100% of their price).²⁶ Despite these favourable conditions and the important mechanisation process that took place, cereal cultivation by the colonists stagnated both in terms of area (796965 ha. in 1909-1913; 803383 ha. in 1923-28) and in terms of output (7.8 million quintals in 1909-1913; 7 million in 1927-1928).²⁷

The stagnation of cereal production concerned not only the colonists' sector by the indigenous sector as well. Thus while indigenous cereal output amounted to 21 million quintals in 1909-1915 it reached only 19 million quintals in 1927-18.²⁸

In this context the stagnation of cereal output coupled with an important population growth would result in an internal cereal deficit (on the assumption that one person needs one kg/day).

Table II.5: Cereal deficit in Algeria (kg/head)

| Year | output/head | deficit/head |
|------|-------------|--------------|
| 1892 | 378 | 0 |
| 1916 | 279 | -86 |
| 1931 | 253 | -112 |
| 1946 | 141 | -224 |

Source: Henni, A., *op. cit.*, p. 182.

The deficit in cereal production was not unique but represented a pattern for all indigenous food demand:

- Sheep population decreased from 9,500,000 in 1875 to 5,412,000 in 1954. ²⁹
- Olive oil output fell from 341 million hectolitres in 1911-15 to 227 millions in 1955-59. ³⁰
- Date output was cut by one third: 1.6 million quintals in 1926-1930 to 960,000 quintals in 1955-59. ³⁰

The reduction in output of commodities directly linked to the indigenous consumption pattern actually points to a process of land concentration which served as a basis for commercial agriculture oriented towards the Metropolitan market (internal demand was marginal due to a lack of income) and to proletarianisation of large segments of the indigenous population (see section 1-5).

It also suggests that agricultural output was heavily dependent on external outlets. In fact whereas the cereal deficit was increasing throughout the years, by 1930, the General Government of Algeria introduced measures to limit cereal production in order to keep prices up. Cereal exports to France then dropped from 30% of total export in 1855 to 0.25% in 1947. Paradoxically, the colonists' output was not reorientated towards the internal market but was sold to governmental institutions that stocked it to avoid a fall in the rate of profit of the colonists. In this context the decree of 15th August 1936 made it mandatory for the colonists to sell all their output to SAONIC (a government institution created for the purpose) at a price (fixed by the Paris government) which encompassed a subsidy amounting to up to 20% of the market price. ³¹

The lack of any long term prospects on the part of the colonists and their privileged status with respect to the Metropolitan state colonial policy not only impoverished the indigenous population but the soil as well. The pursuit of maximum profit on the part of the colonists actually imposed methods of production which were inappropriate to the Algerian scene.

- The first agricultural revolution (the replacement of the fallow period by forage or legumes) did not take place in Algeria.³² The farmer would have increased yields through a close association between agriculture and stock breeding. Manure and nitrogen from the legumes would have prevented the impoverishment of the soil. The colonists could not be interested in stock breeding for the latter was much less rewarding than speculative agriculture.³³ They were however involved in the export of the indigenous livestock which fell from 9.5 million sheep in 1875 to 5,412,000 in 1954.³⁴
- After World War I, dry farming and full fallow were introduced in order to stop the decline in yield.³⁵ Both methods relied on several successive ploughings of the fallow land. More ploughing actually meant better aeration and therefore a greater loss of nitrogen.

Moreover, having lost its carpet of vegetation, the ploughed fallow was subjected to more erosion by wind and water. Despite these new methods of production and a heavy mechanisation, yields in cereal cultivation kept on stagnating between 5 and 6 quintals per hectare.³⁶

In this context, the colonists' policy led Mazoyer to state that:

" During the last century, without stock-breeding, manure or fertilisers, the quest for the highest immediate yields followed by attempts to avert the decline in fertility, took the form of an increasing over-exploitation of the soil.³⁷

The viability of the colonial economy therefore resided in part in the over-exploitation of the indigenous population and the soil on the one hand and on subsidies pouring in from the French state on the other hand. Hence, from the French state's viewpoint, the colonial economy represented a burden rather than a beneficial enterprise. As a settlement colony, however, Algeria required the subsidies in order to avoid the (politically damaging) departure of the French settlers.

1.3 The limits to development of agrarian capitalism

The accumulation process that was taking place in the modern sector was actually dependent on the policy and objectives of the Metropolitan capital for the reason that the only market available to the colonists was the French market.

At the level of the production sphere, capital accumulation within the modern sector was dependent on imports of means of production that had to be bought in France because of the custom union.³⁸ Colonial activities in Algeria did not actually lead to the creation of industrial activities (backward linkages). On the contrary it was the metropolitan capital which benefited from the colonists' activities through export of means of production (182940 tractors and 31800 combine-harvesters between 1947-1960),³⁹ fertilisers (in 1959, 14.7% - 310 million new francs - of French chemical exports were destined to Algeria)⁴⁰, and luxury goods which represented an average of 95% of total imports for the years 1910, 1920 and 1930.⁴¹

At the level of the circulation sphere, the market being restricted to the French one, the realisation of the colonists' output depended solely on conditions that were out of the colonists' control. Vineyards developed not because of internal demand but to satisfy the French market. Cereal cultivation (soft wheat in particular) developed for the same reason, to fill the Metropolitan deficit. This situation actually reflected the dependency of the Algerian economy vis-à-vis the French one and of colonial capital vis-à-vis the Metropolitan one.

Colonial capital was then limited in its expansion because of:

1. The asymmetric relationship between France and Algeria. For the 1950s period, France supplied 75.1% of total Algerian imports while French imports from Algeria represented only 7.3% of total French imports. From the opposite side Algerian export to France represented 79.3% of the total Algerian exports while French exports to Algeria amounted to only 15.5% of total French exports. ⁴²
2. The colonial structure of the Algerian economy, the market of which was limited because of the skewed distribution of income: the European population (11% of the total population) monopolised 40.8% of total income in 1953. ⁴³ Moreover, among the indigenous populations 16% monopolised 40.7% of income. ⁴³
3. The non-existence of long term prospects on the part of the colonists who consumed their savings by buying luxury goods or exported them to the metropolis.
In 1954, while total savings reached 49.9 billion francs, private non-agricultural investment in Algeria amounted to only 1.125 billion (2.25%). ⁴⁴

4. The metropolitan capital interests in avoiding implementation of industrial activities in Algeria in order to:

- * preserve its market: colonial activities reinforced metropolitan industrialists who processed Algerian raw material (minerals and cereals) which, afterwards, were partly sold as finished products in Algeria.
- * take advantage of the import of a cheap Algerian labour force which started migrating to France by 1914 and amounted to 350484 in 1962 (16% of the foreign labour force).⁴⁵

The limits to development of capitalism in Algeria were then the result of too close a relationship with the French economy on one hand and the colonial nature of its social and economic structure on the other hand. While the indigenous population had been impoverished, the colonists' involvement was reduced to an over-exploitation of the indigenous population and of scarce resources, i.e. the soil.

The metropolis' involvement on the other hand, resided in subsidising the colonists' sector in order to expand the colonisation process. That expansion however important to the French economy (increase of outputs for French industrialists), could not take place because of two basic factors:

1. The colonial structure of the Algerian economy.
2. The indigenous population's refusal to be assimilated with the French society.

After World War II, these two factors seem to have been taken into account by French policymakers who devised a development policy (for Algeria) which culminated in the setting up of the *Plan de Constantine*.

1.4 The *Plan de Constantine*

Confronting a stagnation (if not a decline) in most productive sectors and an unwillingness on the part of the colonists to invest in Algeria, the French Metropolitan government devised a policy whereby Metropolitan capital (public and private) would attempt to restore capital accumulation within the Algerian scene.

In this context, the French Metropolitan state started an investment programme that culminated in the implementation of the *Plan de Constantine* (1959-1964). The latter was preceded by an investment programme (1949-1956) which, in view of the Maspétiol report (see note 47), suggests that the 1949-1956 investment programme did not respond to the French state's expectations which advanced that:

"Algeria wants to urge industrialists to use, to the best, local resources, to undertake useful and durable production, to seek new outlets and to collaborate with the administration for the industrial equipment of the country, which has been too neglected up to these last years"⁴⁶

The period covered by the investment programme mentioned above nevertheless witnessed the emergence of two new elements that were to change the French state's perception of the Algerian economy. These new elements appeared as the discovery of hydrocarbon (1954) in the Sahara desert and as the beginning of the independence war led by the F.L.N. party in the same year.

This new perception of the French state, then, emerged through its thorough involvement within the Algerian scene along the *Plan de Constantine*. The latter was preceded by an assessment of the Algerian economy which argued that:

"it is there that lies the tragedy of this country: productive capital is hardly extensible; agricultural investments have, up to now at least, cost very much for a fictitious profit In these conditions, public financing seems essential. The importance of the efforts required assume that an appeal must be made for external funds (particularly metropolitan ones) and to local savings.

It remains that the mobilisation of the latter and its local use require a progressive and large development of the domestic market. This perspective is not at present evident and could only be aroused by a durable action of the political power"⁴⁷

The *Plan de Constantine* then translated into the following investment structure.

Table II.6: Structure of Anticipated investment in the *Plan de Constantine*.
Net investment (oil excluded), million New Francs

| | | % |
|------------------------------------|-------|------|
| I Agriculture and irrigation work | 3680 | 19.4 |
| II Energy | 1300 | 6.8 |
| III Industry | 3200 | 17.9 |
| IV Equipment of enterprises | 1520 | 8 |
| V Infrastructure | 2010 | 11.7 |
| VI Education and health | 1570 | 8.3 |
| VII Administrative equipment | 670 | 3.5 |
| VIII Housing and urban development | 4980 | 26.3 |
| Total | 18930 | 100 |

Source: Benachenhou, A., *op. cit.*, p.310.

The overall picture of the investment structure actually suggests that the basic goal of the French state was to implement the appropriate conditions (infrastructure and housing in particular) for capital accumulation which would take place after the completion of the plan.

On the other hand the emphasis on these labour intensive activities may constitute an attempt to increase employment and reduce the impact of the F.L.N.'s call for independence on the Algerian population. In fact, out of an anticipated increase in employment of 410,000 (over the period 1959-1964), building and public work, services and administration would account for 275,000 (67%) while agriculture and industry would absorb respectively 4.9% and 28% of the increase in employment.⁴⁸

Despite the French government official commitment to change the structural features of the Algerian economy, the productive sectors (agricultural and industry) did not seem to have been geared towards absorbing the excess supply of the Algerian labour force (see section 1-5). Furthermore the evolution of both sectors' (agriculture and industry) output throughout the 1950s does not seem to have responded to the French state's policy.

The stagnation of the agricultural sector can be visualised through the evolution of the output level in the two basic agricultural products (wine and cereals). Concerning wine, the level of output kept on declining throughout the 1950s despite the implementation of the *Plan de Constantine*.

Table II.7: Output of Wine (1954-1962)

| Year | Output (hectolitres) |
|------|----------------------|
| 1954 | 19,297,000 |
| 1956 | 16,619,000 |
| 1958 | 13,827,000 |
| 1960 | 15,850,000 |
| 1962 | 12,277,000 |

Source: Benachenhou, A., *op. cit.*, p.338.

The fall in total output did not however impede an increase of the colonists' income which soared during the same period and reached 115 billion francs in 1962 (70.65% of total agricultural export) after having been 56.91 billion in 1956 (48.79% of total agricultural export).⁴⁹

While partly stemming from an increase in the price of wine, the importance of the colonists' income actually reflected the French state's commitment to subsidise colonists' exports by buying Algerian wine at a price higher than world prices (1800 to 3000 F/hl as opposed to less than 1500 F/hl).⁴⁹

Concerning cereals, the same trend appears, in particular for soft wheat, the output of which declined from 4,288 thousand quintals in 1954 to 3,302 quintals in 1962 despite a growing domestic demand.⁵⁰

The industrial sector on the other hand witnessed an apparent overall growth which was actually hiding the emergence of two basic sectors (hydrocarbon and housing and public work) as the main components in industrial output.

Table II.8: Industrial output (Million of 1959 N.F.)

| Sectors | 1954 | 1958 | 1960 | 1962 |
|-------------------------|------|------|------|------|
| Energy | 145 | 165 | 195 | 205 |
| hydrocarbon | 50 | 410 | 1490 | 1320 |
| Mining | 170 | 135 | 170 | 140 |
| Industry | 920 | 1250 | 1440 | 865 |
| Housing and Public work | 570 | 520 | 1145 | 270 |
| Total | 1855 | 2480 | 4440 | 2800 |

Source: Benachenhou, A., *op. cit.*, p.340.

The growth of the various components of total industrial output which was multiplied by 2.4 between 1954 and 1960 did not however stem from an autonomous expansion of the industrial base. But on the contrary the overall growth of the industrial output and in particular of hydrocarbon basically stemmed from an injection of money capital from external sources (France essentially). This injection of money capital from Metropolitan sources would actually emerge through an analysis of the financing of investments that took place in Algeria from 1954 to 1961.

Table II.9: Origin of the financing of investment (1954-1961), Millions of New Francs (N.F.)

| Year | Investment | Domestic resources | French resources | Others | Total |
|------|----------------|--------------------|------------------|--------|-------|
| 1954 | Total | 1170 | 550 | | 1720 |
| | In hydrocarbon | 20 | 110 | | 130 |
| 1957 | Total | 1055 | 1450 | 60 | 2465 |
| | In hydrocarbon | 10 | 270 | 60 | 340 |
| 1959 | Total | 1355 | 2065 | 220 | 3640 |
| | In hydrocarbon | 240 | 990 | 220 | 1450 |
| 1961 | Total | 2430 | 2150 | 80 | 4660 |
| | In hydrocarbon | 920 | 230 | 80 | 1230 |

Source: Benachenhou, A., *op. cit.*, p.346.

The share of Metropolitan capital in total investment spending grew from 40% in 1954 to 46% in 1961. On the other hand, investment in the hydrocarbon sector increased from 8.5% of total investment in 1954 to 27% in 1961. Although Algerian resources seem to have participated in investments in hydrocarbons, in fact the figures represented self-financing by Metropolitan oil firms.

The large involvement of Metropolitan capital in the Algerian scene may actually support the argument that colonial capital had neither the appropriate resources (in particular for investment in hydrocarbons) nor the motivation (because of the war) to accumulate domestically. Furthermore the same involvement reinforces the argument about the speculative character of colonialism in Algeria and the non-existence of any long term prospects from

the colonists' viewpoint.

In this context the *Plan de Constantine* constituted an attempt to resolve the "Algerian problem" not by calling into question the colonial features of the Algerian economy but by focusing upon an employment policy (by increasing administrative jobs in particular) which was thought to produce a third force opposed to the F.L.N. (*Front De Liberation Nationale*) strategy.

Although the *Plan de Constantine* could not be thoroughly implemented because of Algeria's independence in 1962, it had nevertheless left its mark to the extent that:

1. The agricultural sector's fate was "sealed" by not calling into question its colonial structure
2. The hydrocarbon industry emerged as a leading component both in terms of investment and output
3. The injection of money capital from external sources reinforced the statusquo within Algerian society since the burden of growth would be supported by French taxpayers' money

These features on the economic side and the political and social characteristics that stemmed from more than a century of colonisation may to a certain extent have predetermined the future of post-colonial Algeria. In particular the class structure of the Algerian society at the end of the colonial period was such that internal (within the Algerian society) contradictions could be left aside and the war could be presented as an inter-community war between the Algerian society as a whole and the French colonists.

1.5 On class differentiation

Colonial penetration had therefore resulted in a specific class structure characterised by the domination of the French colonists over the whole society.

Class differentiation would eventually concern Algerians among themselves to the extent that some segments of the Algerian society were able to take advantage of the colonial system to move upward while the majority witnessed a deterioration in its living conditions. In this respect 38% of the area held by Algerians in 1951 was in the hands of 4% of the indigenous population.⁵¹

Although the economic basis of the indigenous bourgeoisie (owning more than 10 ha. each) was relatively strong, it faced unequal treatment from the banking institutions which favoured the French colonists.

Table II.10: Loans to the agrarian bourgeoisie in 1954 (Million Francs)

| | Colonists | Algerian |
|-------------------------|-----------|----------|
| Amount | 35,900 | 8600 |
| Number of beneficiaries | 2505 | 996 |
| Average loans | 14.3 | 8.6 |

Source: Benachenhou, A., *op. cit.*, p.362.

Thus whereas the colonists monopolised most of the credit lines, the loans provided to the indigenous bourgeoisie were concentrated towards less than a thousand individuals (which represented 0.5% of the total Algerian bourgeoisie).⁵¹ Despite its relatively secure material conditions, the Algerian bourgeoisie could not envisage any expansion under the colonial system and would therefore support the liberation war when called upon to do so. Besides

the indigenous bourgeoisie, a large number of Algerian landowners (70%) owned holdings of less than 10 hectares each.⁵¹

The small holdings were in fact the result of the destruction of the tribes' economic system and were to constitute the so-called traditional sector. The great majority of this part of the peasantry lived at a self-subsistence level although it had to market part of its output or its own labour force (as seasonal workers) in order to get rudimentary equipment from the market. Facing the same problems as the indigenous bourgeoisie but lacking the material base to sustain its livelihood this small peasantry had no alternative but to gradually move out of the agricultural sphere.

Table II.11: Social structure of the Algerian agricultural population

| Year | Owners | Sharecroppers | Permanent workers | Seasonal workers |
|------|--------|---------------|-------------------|------------------|
| 1930 | 617544 | 643000 | 106000 | 428000 |
| 1938 | 549395 | 713000 | - | 462467 |
| 1948 | 537800 | 132000 | - | 483900 |
| 1954 | 503700 | 60500 | 112000 | 459000 |
| 1960 | 373000 | | 147000 | 274000 |

Source: Noushi, *La Naissance du Nationalisme Algérien*, quoted in Benachenhou, A., *op. cit.*, p.355.

The fall in the number of landowners points to a process of land concentration hence a possible proletarianisation of the small peasantry. On the other hand the drop in the number of sharecroppers after World War II may be a sign of the transformation of the forms of production whereby landowners became involved as capitalist farmers thus rejecting the sharecroppers as

elements in the production process.

Finally the relative stagnation of the number of permanent workers and the fall in the number of seasonal workers may stem from a process of mechanisation that reduced labour demand on the part of the landowners. The overall picture emerging from the evolution of the social structure within the agricultural scene actually points to a fall in the population of the agricultural sector. This fall would mean that an increasing number of agricultural (and in general rural) workers had to move out of the agriculture sphere in order to ensure their livelihood.

The stagnation of industrial activities in Algeria would however offer reduced prospects to the rejected (from the agricultural sector) proletarianised peasantry. The latter would then constitute the bulk of the unemployed population.

Table II.12: Structure of the Algerian labour force, 1954

| Population | Number | % |
|--|-----------|------|
| Total labour force of which: | 3,218,000 | 100 |
| Non-agricultural labourers | 336,000 | 10.4 |
| small business | 123,500 | 3.8 |
| landowners | 503,700 | 15.7 |
| agricultural labourers | 115,100 | 3.6 |
| sharecroppers | 60,500 | 1.9 |
| unemployed and under- employed population | 2,079,200 | 64.6 |

Source: Henni, A., *op. cit.*, p.74; Benachenhou, A., *op. cit.* p.355.

Most of the non-agricultural wage earners had nevertheless been involved in non-productive (administration and services) and unstable (building and public works) activities which employed 58.5% of this labour force.⁵² The labour force in industry, on the other hand, amounted to 106700 individuals and represented 31.8% of the non-agricultural wage earners total.⁵³

Finally the bulk of the Algerian labour force (64.6%) constituted an unorganised mass which played no active role in the functioning of the colonial economy but gravitated around the latter as seasonal workers or in the informal economy.

The colonial structure of the Algerian economy therefore emerged through:

- The destruction of pre-capitalist forms of production which produced an excess supply of labour.
- The gradual emergence of agrarian capitalism which was subsidised by Metropolitan France.
- The non-emergence of industrial capitalism which might have absorbed the growing number of Algerian proletarians.

In this context, the Algerian social formation at the beginning of the liberation war (1954) constituted a society made up mainly of "lumpen-proletarians". This situation, product of a particular evolution of the Algerian social formation under colonial rule, could then be summarised as follows:

"Algeria lived its capitalist phase of development through colonisation. But capitalism has only produced proletarianized classes, from peasants reduced to misery and emigration to a petty bourgeoisie limited in its aspiration towards social and economic promotion".⁵⁴

This situation sharpened the contradictions between social classes and particularly between a great majority of Algerians and the French colonists as a whole. These contradictions eventually led to a clash between the two communities that resulted in the political independence of Algeria (5th July 1962) under the rule of the F.L.N. party which led the war.

2. Oil rent and the Algerian growth strategy

Having fought for almost eight years to obtain their country's independence, the Algerian dominant social groups were to view underdevelopment as a structural phenomenon (disarticulation of the economy), the overcoming of which lies in the destructuring-restructuring of the Algerian economy. Considering that pre-independence Algeria's economy was totally extroverted (the different sectors were producing for the French market without intersectoral relations) the destructuring-restructuring of the Algerian economy was to take place through an inward-looking strategy or, in other words, its introversion.

The process of introversion would nevertheless cover a period whereby an export sector was to support the financing of the rest of the economy (since introversion assumed implementation of industries that were hitherto non-existent within the Algerian scene).

In this context the agricultural sector and the hydrocarbon sector constituted the main elements in the export structure (36% and 56% respectively) of post-independence Algeria up to 1966.⁵⁵ The choice of either of these sectors (as a support for overall growth), or both of them, would however require an analysis of the internal and external conditions under

which they could operate. In particular, whereas the hydrocarbon sector had been in a process of development since the discovery of oil in 1956, the particular (colonial) structure of the agricultural sector put a question mark on its emergence as a leading sector in post-independence Algeria.

2.1 The decline of post-independence agricultural sector

The hasty departure of the French colonists from Algeria in 1962 and the involvement of Algerian agricultural workers in the running of the abandoned farms pushed the Algerian government into proclaiming (decrees of March 1963)⁵⁶ the constitution of a "self-managed" sector in agriculture.

This "self-managed" sector would actually cover an area of 2.7 million hectares (divided into 3000 units)⁵⁷ and represent the domain hitherto controlled by the French colonists. Post-independence Algeria then witnessed the same division of the agricultural sector (into a modern - self-managed - and a traditional sector) as the one that prevailed during the colonial era.

Thus export of agricultural products (to finance industrialisation) could only come from the self-managed sector which inherited the production pattern of the colonial one. In this framework the self-managed sector could respond to the financing needs of the Algerian economy while the traditional sector may, under appropriate conditions, satisfy domestic demand.

The evolution of both sectors would, however, be totally dependent on the state policy towards agriculture in general and its apprehension of the social and political factors peculiar to the Algerian scene.

2.1.1 The self-managed sector: structures and evolution

The self-managed units were supposed to combine local participation of the workers in taking decisions and central government direction in controlling their compatibility with national policies.

At the level of any estate, the basic body would be the general assembly of workers comprising all permanent workers but excluding seasonal ones.

The general assembly would elect a workers' council that would be responsible for membership decisions and long term borrowing. The workers would elect a management committee which would be in charge of the daily running of the farm. A president would then be nominated by the management committee to represent the whole estate before outside institutions (banks in particular).

Finally the president would work closely with a director appointed by the *office National de la Reforme Agricole* (ONRA).⁵⁸ The director would be in charge of ensuring that the unit worked within ministerial directives.

Revenue being defined as income less costs (labour cost not included) is split into three parts:

1. The first part will go to the state for accumulation purposes
2. The second part will be used for payments of the workers
3. The third part (if any) will be used by the workers' council for internal investment

The ideal structure outlined above faced many functional problems.

The first and basic problem was the workers' lack of enthusiasm towards involvement in the farms' management thus

"according to Ait Amara 43% of respondents in the Mitidja plain had never attended a general assembly meeting"⁵⁹

The non-participation of the farm workers in the process of decision-making stemmed basically from a lack of political consciousness due to the absence of a straightforward ideological discourse and from their "disillusions" towards implementation of self-managed units that constituted the very negation of the centralised approach to all government actions.⁶⁰

The appointment of a director by ONRA opposed the very meaning of self-management and resulted (because of the non-involvement of workers) into his taking over the management of the unit despite the "facade" of self-management. It could not have been otherwise, seeing that the lack of political consciousness and the illiteracy of the farm workers were barriers against their effective involvement.

A second problem which undermined the self-management process was the existence of a great number of seasonal workers who were excluded from decision-making and profit-sharing. For this category of worker, independence did not mean any real change in living conditions.

Table II.13: Employment figures in the self-managed sector

| Year | Total workforce | % of Seasonal Workers |
|---------|-----------------|-----------------------|
| 1964-65 | 234,430 | 42.6 |
| 1967-68 | 252,380 | 47.4 |
| 1968-69 | 269,840 | 45.7 |
| 1969-70 | 275,979 | 37 |

Source: MARA Statistique Agricole, serie grise, quoted from Bedrani, S. (1981) *L'Agriculture Algérienne Depuis 1966*, OPU, Alger, p.58.

The seasonal workers were still working for somebody else. The colonist boss was however replaced by a large group of bosses. Identification with the estate in these circumstances became rather difficult and this situation affected productivity and the level of output of the estates. For all crops combined, the production index (the 1957-59 average equalling 100) for the years 1963-1969 had not gone beyond 90.⁶¹

The output of the self-managed sector actually evolved as follows:⁶²

- Soft wheat output dropped from 2.376 million quintals in 1960 to an annual average of 2.094 million quintals for the period 1965-1969.
- Hand wheat output fell from an annual average of 4.236 million quintals for the period 1954-1957 to an annual average of 2.829 million quintals for the period 1966-1969.
- Finally barley output decreased to 0.54 million quintals (annual average) for the period 1966-69 after having amounted to 1.232 million quintals for the period 1954-57.

- Wine, whose outlet was not the domestic market, nevertheless followed the same trend; whereas total output reached 18.619 million hectolitres in 1956, by 1969 it amounted to only 8.71 million hectolitres.⁶³

Since authority was diluted within the self-managed estates, workers in general and seasonal workers in particular have neither obligations nor incentives to work hard on the collectivised land. This situation meant a necessary drop in production on the collectivised land and a reduction in the state revenue from agriculture in particular.

Besides these structural problems, the self-managed sector suffered from the government's lack of policy towards agriculture (at least until 1971).⁶⁴

The obligation imposed on the estate to utilise state marketing channels on the one hand, and to seek credit through ONRA on the other, emptied the self-management concept of its whole substance; for two crucial moments of the reproduction process (financing and marketing) were not controlled by those primarily concerned.

ONRA's attitude towards the self-managed sector looked rather ambiguous, for instead of improving the working conditions of the estates, ONRA seemed to have done the opposite. Thus, in March 1964, at the peasants' congress, some delegates stressed the need for decentralisation of responsibilities and argued that:

"the reactionaries who are impeding our revolution in the highest spheres of the administration must be swept away"⁶⁵

By the reactionaries, the delegates meant basically ONRA's personnel who comprised many individuals who gained experience with the French administration. Thus as a group these "bureaucrats" maintained and developed ideological values that did not suit the socialist transformation of the agricultural sector.⁶⁶

In the absence of a clear F.L.N. ideology, ONRA employees could not go beyond the methods and attitudes of their bosses, they were then more interested in securing their jobs (through clientelism) and strengthening their own power than helping the farm workers gain control over the labour process.

2.1.2 The state's lack of policy towards agriculture

The case of ONRA was not a problem of inefficiency or incompetence for beyond ONRA was the government who could not or was not willing to undertake a clear and effective policy towards agriculture. The government's actual policy towards agriculture in general and the self-managed sector in particular did not reflect the official position that stressed the need for a real agricultural development.

Concerning the self-managed sector, actual investment did not even renew equipment but fell well behind what was necessary for a simple reproduction. Thus according to its own financing institution (Banque Nationale d'Algerie) the self-managed sector received on average 38% of the investment required to renew its productive apparatus between 1966 and 1974.⁶⁷ A process of disinvestment had then been taking place within a sector which could have

participated in the export market. This situation exemplifies the minor role given to agriculture in the Algerian growth strategy and unveils one of the causes of agricultural stagnation.

Despite the problems facing the self-managed units they nevertheless constituted the privileged part of the agricultural sector as a whole since average per capita income was more than twice that of the private sector (55 pounds as opposed to 25 pounds).⁶⁸ In fact for the impoverished families (see table below) living on privately owned land, independence had not changed their conditions since inequality in land ownership was still blatant.

Table II.14: Structure of land ownership in the private sector
North Algeria, 1964

| Dimension | Number of units | % | Area | % |
|------------------|-----------------|------|-----------|------|
| less than 1 ha. | 134,780 | 25.6 | 59,180 | 1 |
| 1 to 10 ha. | 228,490 | 43.4 | 1,260,445 | 21.6 |
| 10 to 50 ha. | 147,043 | 27.9 | 2,967,545 | 50.8 |
| more than 50 ha. | 16,530 | 3.1 | 1,552,490 | 26.6 |

Source: Statistiques Agricoles No. 5, juin 1968, amended from Raffinot, M. and Jacquemot, P. (1977) *Le Capitalisme d'Etat Algérien*, Maspéro, Paris, p.313.

The existing structure (small holdings in particular) was obviously inappropriate for modernisation and the government invested only 30 million dinars during the 1962-65 period whereas total public spending was around 4500 million.⁶⁹

Starting in 1966, the Algerian government set up a more systematic policy towards the agricultural private sector through individual equipment loans.

Table II. 15: Equipment loans to the private sector (thousand dinars)

| Year | Planned (1) | Actual (2) | 2/1 (%) |
|------|-------------|------------|---------|
| 1966 | 120,000 | 84,974 | 70.8 |
| 1967 | 115,000 | 112,923 | 98 |
| 1968 | 118,000 | 109,965 | 93 |
| 1969 | 110,000 | 102,138 | 92.8 |
| 1970 | 90,000 | 54,025 | 60 |
| 1971 | 60,000 | 45,027 | 75.7 |

Source: Tutelle, S.A.P., quoted in Benachenhou, A. (1979) *L'Exode Rural in Algérie*, Presses De l'ENAP, Alger, p.86.

Because of legal limitations only 15800 landowners benefited from the loans in 1966.⁷⁰ Thus 75% of the landowners were not concerned by the government action. This government's policy mostly benefited the big landowners, most of whom were already out of the agricultural sector, accumulating in the cities through businesses and wholesale markets.⁷¹ They then diverted the loans acquired towards more lucrative businesses and kept agricultural output as it used to be.⁷²

The level of agricultural output then stayed low while home consumption increased due, in particular, to population growth (see Appendix II.1). Export of agricultural products, then, was gradually squeezed until Algeria became a net importer from 1969 onward.

Table II.16: Algeria's Trade balance in foodstuff (million dinars)

| year | Import (1) | Export (2) | 2/1 (%) |
|---------|------------|------------|---------|
| 1966 | 713 | 931 | 131 |
| 1967-69 | 731 | 717 | 98 |
| 1970-73 | 925 | 736 | 80 |

Source: SEP, *Annuaire Statistique de l'Algérie, 1970-1975*.

Agriculture could not then be relied upon to finance industrialisation. Apart from climatic conditions, which were objective constraints, the economic and political conditions of post-independence Algeria represent pertinent explanatory variables as well.

On the economic side, agricultural output could not compete within the world market (in particular within the EEC as the closest potential market). Since agriculture had been subsidised by the French government before independence, the continuing of Algerian agriculture exports were mainly due to decisions contained in the "Evian agreements". These decisions could not however be sustained for a long time since Algerian wine (the major agricultural export) would not receive preferential treatment while facing French or Italian wines which were flooding the European market.

The political power of the colonists having vanished with Algeria's independence, the French government had to reduce preferential treatment accorded to countries (Algeria among others) outside the EEC. Thus while France imported 48938 hectolitres from Italy and 6,710,000 hl. from Algeria in

1964-65, by 1971-72, the figures were reversed since 6,480,251 hl. were imported from Italy but only 133,878 hl. came from Algeria.⁷³

On the political side, it was easy and workable for the Algerian government to attack foreign interests in the industrial sector and to implement an industrial strategy. This action could moreover be regarded as the continuation of the anti-colonialist struggle.

It was, however, more difficult to set up an agricultural strategy, for foreign interests had vanished when it came to decide upon a growth strategy. In fact any effective agricultural strategy would have created dissensions among Algerians, since modernisation of agriculture in general and of the private sector in particular would only be possible through agrarian reform. But this was not feasible politically since many big proprietors and those whose land might be limited had either connections with the state bureaucracy or were themselves inside the state apparatus.⁷⁴ On the contrary, an industrial strategy was feasible since only foreign interests would confront the power of the Algerian state. The enemy was not Algerian and the notion of "national solidarity" would be used to hide the internal class struggle.

Due to the non-existence of any strong Algerian bourgeoisie, the state (acting as the representative of all social classes) would invest as the first entrepreneur to industrialise the economy. The industrialisation path would furthermore attempt to implement a process of introversion of the economy (in accordance with Algerian policy-makers' rejection of the colonial economy).

2.2 Industrialising industries and the internal conditions

The absence of the Algerian bourgeoisie⁷⁵ as well as the Algerian proletariat⁷⁶ from the political scene created a vacuum that was to be filled by the most politically advanced elements of the petty bourgeoisie whose declared aim was the building of an independent and national economy often obtaining independence.⁷⁷

The Algerian petty bourgeoisie basically comprised two social groups. The first one engaged in small production or small business: artisans, services and shopkeeping, while the second social group encompassed a set of Algerians who received some form of education and were employed in various sectors (state administration, i.e. the lowest positions, private sector, and in education in particular).

Because of the colonial history, the first social group was condemned to stagnation or decline. For no other accumulation field was open to the indigenous population (the industrial sector was embryonic and largely dominated by the colonists).⁷⁸ The second social group, on the other hand faced a more "frustrating" situation. While the French school taught the ideology of the colonial power about "liberty, equality and fraternity", the colonial structure rejected them from the economic as well as the political life.

Under these circumstances the Algerian petty bourgeoisie had no option but to call into question the colonial power via the war. The building of an independent and national economy after independence became, then, the leitmotiv of the petty bourgeois leadership.⁷⁹

The leading elements of the petty bourgeoisie who represented various political tendencies possessed the political power (due to their involvement in the liberation war), the strengthening of which required the emergence of a strong economic base on the one hand and the spread of a socialistic ideology that would mobilise the vast majority of the Algerian population on the other.

The building of an independent and national economy through a strategy of national unity, then, was meant to stress the development of the forces of production while avoiding conflicts among social classes. To this extent the industrialising industries' strategy was well adapted to the social conditions that prevailed in Algeria. The leading petty bourgeoisie could therefore implement a growth process that was to fulfil most of its aspirations, for in practice:

1. The building of a heavy industry under state control would strengthen its political power through its domination of the key elements of the productive apparatus.
2. The stress on the development of the forces of production would, in the abstract, be welcomed and supported by all social classes (each and everyone is supposed to be better off through this process) and will allow the negation (within the dominant ideology) of the class struggle within the Algerian social formation.
3. Finally the challenge to the prevailing international division of labour would be considered as a continuation of the struggle against colonialism through the so-called anti-imperialist struggle. By these actions the leading petty bourgeoisie would gain the justification of its controlling the state apparatus and mobilise the whole nation against an external (although not clearly defined) enemy: i.e. imperialism.

The social conditions were therefore adequate for implementing the strategy of industrialising industries. The economic conditions were appropriate as well. Indeed Algeria possessed the necessary inputs⁸⁰ for the building of a heavy industry, in particular:

- Steel industry could be backed by many iron-ore deposits (Beni saf, Zaccar Timerzrit, Ouenza and Gara-Djebilet.

The last two were the most promising:

1. The Ouenza deposit currently exploited holds an amount of one billion tons of ore containing 57% iron and is situated in the east of the country.
2. The last is situated in the south-west and holds around 2 billion tons of ore containing 52-57% of iron.

Iron-ore deposits have been exploited before the petroleum era (1956) and since 1964 the level of output has been around 2.5 million tons per year.

- Non-ferrous minerals, of which zinc, copper and lead exist in important quantities too and were exploited before independence. Several deposits are known, of which the one of El-Abed near the Moroccan border is the most important.
- The chemical industry would be backed by a deposit of phosphate at Djebel Onk (340 km from Annaba), exploited since 1960 and containing between 200 millions and 500 millions tons of ore.
- Finally, antimony, tungsten, manganese, mercury and uranium constitute other exploitable mineral resources that would either be exploited (to obtain foreign currency) or used as input for Algerian industries.

Industries that are backed by the input mentioned above would then constitute the materialisation of the concept of industrialising industries. Being highly capital intensive, they necessarily require imports of means of production that are to be financed through export of agricultural products (the basic export of the colonial economy) or mineral products. Given the sheer volume of investments required for the implementation of the strategy, exports of minerals would only be marginal in meeting the demand for foreign currency. On the other hand agricultural products (wine essentially) are neither strategic to the functioning of the European economies (potential customers) nor adequately valued (because of competition) to earn the necessary financial resources. The only alternative left was the export of hydrocarbons.

Discovery of crude oil occurred in 1956 and exploitation on a commercial basis began in 1958. Most of the deposits are situated near Hassi-Messaoud in Central Algeria and near the Libyan border at Edjeleh.

In 1967, this proved reserve of oil was estimated at 950 million tons. Gas reserves however amounted to 2-3 billion cubic meters.⁸¹ Hence while Algeria may be considered as an oil producer of average importance, its gas reserves represented the world's fourth largest gas field, the bulk of it being situated at Hassi R'mel (400 km South of Algiers).

The role of the hydrocarbon industry within the Algerian growth strategy could then be divided into two major functions:

1. The first one is related to the internal impact on the Algerian economy through linkages (motivating function).
2. The second function places emphasis on export of hydrocarbons as the main source of foreign currency (financing function).

- Within the Algerian economy the hydrocarbon industry could be developed in order to meet the demand and motivate the development or creation of:

- a. other industries (as a source of energy)
- b. petro-chemical industries
- c. agriculture (fertilisers, plastic equipment)
- d. industries producing means of production for the hydrocarbon and other industries.

The hydrocarbon industry could then be the basic motivating industry within the set of industrialising industries through backward and forward linkages.

- On the other hand hydrocarbons considered as strategic to the functioning of contemporary economies would be (and are currently) the basic means for financing the heavy investment implied by the growth strategy adopted by Algerian policy-makers.

The two functions (motivating and financing) fulfilled by the hydrocarbon industry may nevertheless produce contradictory effects. If the motivating effect could realise (through planning) the claimed goal of introversion and integration, the financing function (by developing exports) actually pushes towards the extraversion of the industry and may accentuate the dependency of the economy vis à vis the world market. The development of the hydrocarbon industry therefore conceals a contradiction that has to be overcome in practice.

2.3 The Algerian growth strategy in historical perspective

According to the development ideology advanced by the Algerian state, the growth strategy chosen by Algerian policy-makers was original on the one hand and called into question the prevailing international division of labour on the other.

1. The Algerian growth strategy was presented as original to the extent that (at least officially) it rejected both policies experienced by Latin-American countries (Imports substitution industrialisation and export led growth) and planned to implement a growth model stressing a priority for the setting up of upstream activities (the so-called industrialising industries).

2. On the other hand the calling into question of the international division of labour took shape in:

- a. a nationalisation of foreign interests within the domestic economy (thus implying a rejection of direct foreign investment).
- b. the emergence of the state as the main entrepreneur whose aim was to build an integrated economy which would not comply with specialisation within the international division of labour.

The process by which a colonial economy was to be transformed into an integrated economy would materialise through the export of hydrocarbons. The latter (export of hydrocarbons) was seen as a temporary necessity insofar as it would speed up the process of building an independent and national economy. Thus from 1967 (beginning of the planning process) to 1980, the Algerian economy experienced a thorough transformation sustained by three interconnected elements:

1. The concepts of introversion and industrialising industries at the theoretical level.
2. The use of the oil rent as a financing means at the practical level.
3. The spread of a populist rhetoric at the ideological level.

These three aspects would bring about the 1970s "euphoria" concerning Algeria leaving the set of underdeveloped countries by the early 1980s.

At the quantitative level, the Algerian economy seems to have jumped from the mainly agrarian economy of the colonial era to a new stage where the industrial and service sector emerged as the main components of G.D.P.

Table II. 17: Algerian G.D.P. (10⁶ dinars) and structure in %

| | 1958 | 1963 | 1967 | 1969 | 1973 | 1977 | 1980 | 1983 |
|-------------------|-------|-------|-------|-------|-------|-------|----------|--------|
| Agriculture | 21 | 20.4 | 13.1 | 12.5 | 8.7 | 6.6 | 7.9 | 7.1 |
| Hydrocarbons | - | 11.8 | 17.2 | 16.3 | 18.7 | 29 | 31.4 | 26.6 |
| Mining | 4 | 0.5 | 0.4 | 0.4 | 0.6 | 0.4 | | |
| Energy-water | - | 1.9 | 0.9 | 1.3 | 1.5 | 1.3 | 9.8 | 10.8 |
| Industry | 11 | 9.4 | 12.3 | 12.9 | 13.8 | 14.2 | | |
| Building and P.W. | 6 | 4.6 | 4.7 | 5.6 | 11.6 | 8.3 | 12.4 | 13.7 |
| Services | 58 | 52.8 | 50.8 | 50.9 | 45 | 40.2 | 38.5 | 41.8 |
| G.D.P. | 12100 | 13130 | 16230 | 20529 | 34487 | 81446 | 162867.5 | 234034 |

Source: 1958 *Statistical Yearbook* (1965) p.554.
 1963-67-69, Bénissad, M.E. (1982) *Economie du développement de l'Algérie, Economica*, Paris, 2nd ed., p.53.
 1973, SEP, *L'Algérie en Quelques Chiffres 1977*.
 1977, SEP *L'Algérie en Quelques Chiffres 1979*.
 1980-83, *Annuaire Statistique de l'Algérie*.
 1983-84, ed. 1985, No. 12, pp.318 and 320.

From 1963 to 1980, G.D.P. had increased twelve times. This increase, however important, did not actually alter the overall structure of G.D.P. since the only tangible change appeared as a switch of positions between the agricultural sector and the hydrocarbon one. In this context, the replacement of the colonial export oriented sector (the agricultural sector) by the current export sector (the hydrocarbon sector) suggests that as far as the integration of the domestic economy is concerned, the Algerian growth strategy did not go beyond the G.D.P. structure inherited from the colonial period.

In fact, in both periods, an extraverted sector dominated the G.D.P. structure and in both cases the income generated by these sectors encompassed a portion that had no productive labour counterpart:

1. During the colonial era, the agricultural sector benefited from subsidies flowing from the metropolis and took advantage of a protected market.
2. The income from hydrocarbon exports, on the other hand, had been mostly made up of the oil rent which does not have a counterpart within the domestic economy.

Within this framework the similarity between the colonial structure and post-independence Algeria (with respect to the importance of an external source of financing for accumulation) may allow the Algerian growth strategy to be interpreted as a mere continuation of the neo-colonial project set up during the last years of the independence war (see the *Plan de Constantine* section A-II-1-4).

The replacement of French subsidies during the colonial era by the oil rent (after Algeria independence) in the financing of the Algerian economy had

actually emphasised the colonial structure of the Algerian scene to the extent that from a mono-exporter of agricultural products (wine essentially), Algeria gradually became a mono-exporter of hydrocarbons.

Table II. 18: Algerian balance of trade (million dinars and percentage)

| | 1958 | 1963 | 1967 | 1969 | 1973 | 1978 | 1980 | 1981 | 1982 | 1983 | 1984 |
|------------------------|---------|------|------|-------|-------|---------|--------|--------|--------|--------|--------|
| Export | 2050.2 | 3748 | 3572 | 4611 | 7472 | 25020.5 | 52648 | 62837 | 60478 | 60722 | 63758 |
| Food | 80.5 | 30.7 | 16.2 | 20.14 | 11.7 | 2.3 | 0.8 | 0.9 | 0.5 | 0.3 | 0.5 |
| ICG* | 1.05 | 0.5 | 0.9 | 1.06 | 0.6 | 0.05 | - | - | - | - | - |
| IG** | 0.7 | 1.2 | 1.6 | 1.5 | 1.1 | 0.01 | - | - | - | - | - |
| Raw Mat. | 15.85 | 9.8 | 8.4 | 5.9 | 3.6 | 1.44 | 0.9 | 0.9 | 1.3 | 1.2 | 1.8 |
| Energy Prod. | 1.9 | 57.8 | 72.9 | 71.4 | 83 | 96.2 | 98.3 | 98.2 | 98.2 | 98.5 | 97.7 |
| Import | 4788 | 3437 | 3154 | 4981 | 8875 | 34428 | 40519 | 48780 | 49384 | 49782 | 51257 |
| Food | 21 | 22.3 | 26.3 | 13.2 | 13.7 | 14.6 | 18.8 | 18.7 | 18.8 | 19.4 | 17.1 |
| ICG* | 34.5 | 32.3 | 25.6 | 21.4 | 7.7 | 5.2 | 17.4 | 15.2 | 19.2 | 16.7 | 14.6 |
| IG** | 19.5 | 17.7 | 21 | 30.4 | 39.8 | 48 | 31.2 | 33.8 | 33.2 | 32.2 | 30.4 |
| Raw mat. | 25 | 27.7 | 27.6 | 35 | 38.8 | 32.2 | 32.6 | 32.3 | 28.8 | 32.2 | 37.9 |
| Inter-mediary products | | | | | | | | | | | |
| Balance | -2750.2 | +311 | +418 | -380 | -1403 | -9407.5 | +12129 | +14057 | +11094 | +10940 | +12501 |

*Industrial Consumption Goods; ** Investment goods.

Source: 1958: Mazri, A. (1976) *Les Hydrocarbours dans l'Economie Algérienne*, SNED, Alger, p.64.

1963 to 1978, Bemissad, M.E. *op. cit.*, pp. 189 and 191.

1980 to 1984, *Annuaire Statistique de l'Algérie 1983 1984*, ed. 1985, pp.260,261.

The Algerian trade balance experienced an important deficit at the end of the colonial era. That deficit basically stemmed from the involvement of the Metropolitan government in the revival of the Algerian economy after the discovery of oil in 1956. X

The first years of independence, on the other hand, saw the opposite trend (a trade surplus) which may be explained not in terms of a particular policy but as a result of the French colonists' departure (around one million) which decreased the level of effective demand for imported commodities.

The period 1967-1978 which witnessed the implementation of successive plans reversed again the previous trend and was characterised by a growing deficit stemming particularly from imports of: investment goods, raw material and intermediary products and food products.

Finally the Algerian economy experienced a trade surplus in 1980. This year however constituted a peculiar year insofar as: export earnings had been boosted by the second oil crisis (1979) and the growth strategy started being called into question and the accumulation process had been slowed down.

As far as the Algerian growth strategy was concerned, the analysis of both G.D.P. structure and trade balance does not support any trend towards introversion and integration:

- The only growing sector (the hydrocarbon sector) may only have a limited impact on the domestic economy since most of its output had been directed towards the world market.

- The stagnation of the agricultural sector on the other hand suggest that the connection sought between industry and agriculture had not come about.

- The importance of the service sector within the G.D.P. structure may actually constitute a burden upon the productive sphere (agriculture and industry) and impede the accumulation process by diverting resources towards non-productive activities (in 1980 the service sector employed 37% [1,185,648] of the total employed population).⁸²

- The export sector's main feature emerges as the replacement of agricultural exports by hydrocarbon exports as the major component but on a larger scale (by 1980 exports outside hydrocarbons were insignificant)

- The import structure, on the other hand, indicates the high rate of investment that had been taking place through imports of means of production. The share of investment goods, raw materials and intermediary products in the import structure nevertheless suggests that the process of integration of the domestic economy had not yet taken place. The increase of food in the import structure confirms the stagnation of the agricultural sector and its inability to feed the Algerian population.

- Finally the only positive aspect of the evolution of the import structure appears to be the disappearance of industrial consumption goods. While suggesting a process of import substitution industrialisation, this aspect may only be considered as marginal in terms of the chosen growth strategy.

In this context, the failure of Algerian policy-makers to implement the claimed growth strategy had materialised in a thorough dependence of the Algerian economy on one particular sector (the hydrocarbon sector). Besides the G.D.P. and trade balance structures, the gradual importance of the

hydrocarbon sector could be grasped through its role in the financing of gross accumulation under the Algerian state control.

Table II.19: Hydrocarbon resources in Public Gross Accumulation (10⁹dinars)

| | 1963-66 | 1967-69 | 1970-73 | 1974-77 | 1978-80 |
|-------------------------------|---------|---------|---------|---------|---------|
| Public Gross Accumulation (1) | 3.9 | 9.1 | 36.3 | 121.2 | 164.2 |
| Petroleum Tax (2) | 1.5 | 3.3 | 10.4 | 59.1 | 81.5 |
| % (2/1) | 38 | 36.3 | 28.4 | 48.8 | 49.6 |

Source: SEP DSCN, quoted in Ecrément, M. (1986) *Indépendance Politique et Libération Économique: un Quart de Siècle du Développement en Algérie 1962-1985*, ENAP/OPU/PUG, Alger, p.57.

Hence instead of decreasing through time, the share of hydrocarbon resources in the financing of gross accumulation kept on increasing in absolute terms. In percentage terms, the high figures for 63-66 and 67-69 should be related to the relatively small amount of gross accumulation, while the low figure for 1970-73 may represent the Algerian policy-makers' initial attempt to limit their dependency on external factors (the world oil market in this instance). The first oil shock had nevertheless given more leeway to the Algerian policy-makers who felt secure enough to increase the share of hydrocarbon revenues in the financing of investment.

The importance of the oil revenues or more precisely of the oil rent in the financing of gross investment after 1973 may however support the argument that, besides the hydrocarbon sector, no other sector of the domestic economy had been capable of generating a surplus.

The latter statement suggests that the whole growth process that had taken place within the Algerian scene may be reduced to:

- A specialisation of the Algerian economy in hydrocarbon exports coupled with
- Implementation of inefficient industries (the so-called industrialising industries in particular) which required
- More exports of hydrocarbons or an increase of foreign borrowing (see ch.III section 3 below).

In this context the contrast between the claimed aim of building an integrated economy and the apparent specialisation (in hydrocarbon exports) of the Algerian economy could be understood through consideration of the hydrocarbon industry as the pillar of the Algerian growth strategy.

NOTES

1. For a synthesis of Algerian rulers' ideology see *Charte Nationale* edited by the FLN, Algiers, 1976.
2. The Turkish state collapsed three weeks after the landing of the French troops.
3. The prevailing mode of production may then be called tributary mode, for details see Amin, S. (1980) "*Class and Nation*" Monthly Press Review, London Ch. 3.
4. Before the French invasion, Algeria constituted a province of the Ottoman Empire which was represented by the bey of Algiers.
5. Marx, K. (1976) *Capital*, Penguin Books, London, p.876.
6. Cambon, J. (1918) *Le Gouvernement Général de l'Algérie 1891-1897*, Librairie H. and E. Champion, Paris, p.135.
7. Benachenhou, A. (1978) *Formation du sous-développement en Algérie (1830-1962)*, ENIC, Alger, p.59.
8. Henni, A. (1981) *La Colonisation Agraire et le Sous-développement en Algérie*, SNED, Alger, p.15.
9. Cambon J. *op.cit.*, p.97.
10. Jackson, H.E. (1977) *The FLN in Algeria: Party Development in a Revolutionary Society*, Greenwood Press, London, p.6.
11. Cambon, J. *op. cit.*, p.135.
12. Benachenhou, A., *op. cit.*, p. 76.
13. It is considered that, in the Algerian context, a holding of 10 hectares is the minimum required to support a family of average size.
13. Benchenhou, A. *op. cit.*, p.113.
14. Henni, A. *op. cit.*, p. 103.
15. Henni, A. *op. cit.*, pp.104 and 107.
16. For an analysis of underdevelopment in terms of articulation of modes of production, see Rey, P.P. (1973) *Les Alliances de Classes*, Maspero, Paris.
17. Clegg, J. (1971) *Workers' Self-Management in Algeria*, Allen Lane, Penguin Press, London, p.26.

18. Ageron, C.R. (1968) *Les Algériens Musulmans et la France*, PVF, Paris 1968, Tome II, pp.840 and 841.
19. Banque d'Algérie (1851), Compagnie Algérienne de Crédit (1877), Crédit Lyonnais (1878), Crédit Foncier (1880) plus many trading posts.
20. Bedrani S.(1983) L'agriculture Algérienne face au marché mondial, in *Les Politiques Agraires en Algérie, vers l'Autonomie ou la Dépendance*, CREA, Alger, p.21.
21. Henni, A. *op. cit.*, p. 127.
22. Henni, A. *op. cit.*, p.126.
23. Benachenhou, A. *op.cit.*, pp.257 and 271. Henni, A. *op. cit.*, p.127.
24. Henni, A. *op.cit.*, p. 126.
25. Benachenhou, A. *op. cit.*, p.143.
26. Benachenhou, A. *op. cit.*, p.123.
27. Benachenhou, A. *op.cit.*, p.137.
28. Benachenhou, A. *op. cit.*, p. 262.
29. Henni, A. *op.cit.*, p.202.
30. Bedrani, S. *op.cit.*, p.33.
31. Henni, A. *op. cit.*, p.179.
32. Mazoyer M. (1973) The search for full employment by making best use of land, Algeria's scarcest resource, in R. Dumont (ed) *Socialism and Development*, André Deutsch, London, p.304.
33. Henni, A. *op. cit.*, p.200.
34. Henni, A. *op. cit.*, p.195.
35. Mazoyer, M.,*op. cit.*, p.306.
36. Bedrani, S. *op. cit.*, p.27.
37. Mazoyer, M. *op. cit.*, p.305.
38. This aspect reinforced metropolitan capital but inhibited the creation of domestic industrial activities.
39. Benachenhou, A. *op.cit.*, p.354.
40. Henni A. *op.cit.*, p.219.
41. Henni, A. *op. cit.*, p.218.

42. Himberg, H.A.(1978) *Confronting Dependency: French-Algerian Relations in the Post-Colonial World*, City University of New York PhD, published by University Metrofilm International, Ann Arbor, Michigan, USA, pp.26 and 27.
43. Liabes, D.(1984) *Capital Privé et Patrons d'Industrie en Algérie 1962-1982*, CREA, Alger, p.197.
44. Liabes, D. *op.cit.*, pp.198 and 229.
45. Himberg, H.A. *op.cit.*, p.47.
46. Documents algériens - service d'information du cabinet du Gouverneur-Général de l'Algérie, *Serie Economiques No. 27*, Alger, Juillet,1947, quoted in Benachenhou, *op.cit.*, p.286.
47. *Rapport Maspétiol*, Alger 1955, p.164, quoted in Benachenhou *op.cit.*, p.304.
48. Benachenhou, A. *op.cit.*, p.313.
49. Benachenhou, A. *op.cit.*, p.338.
50. Import of soft wheat amounted to 3.13 billion francs in 1958; 10.56 billions in 1959 and 13.46 billions in 1960.
51. *Tableaux de l'Economie Algérienne*, quoted in Raffinot, M. and Jacquemot P.(1977) *Le Capitalisme d'Etat Algérien*, Maspero, Paris, p.313.
52. Benachenhou, A. *op.cit.*, p.364.
53. Benachenhou, A. *op.cit.*, p.364.
54. Ollivier M. (1983) *La Politique Agrarie de l'Algérie, Thèse Grenoble*, quoted in Hamel, B., *Système Productif Algérien et Indépendance Nationale*, OPU Alger, p.64.
55. Himberg, H.A. *op.cit.*, p. 255.
56. Decrees of March 1963, reproduced in Clegg, J. *op.cit.*, p.201.
57. Griffin K.(1981) *Land Concentration and Rural Poverty*, Macmillan Press Ltd., 2nd edition, London, p.28.
58. ONRA was an institution related to the Ministry of Agriculture.
59. Ait-Amara (1981) *Etudes de quelques conditions de la participation des travailleurs dans les exploitations agricoles d'autogestion*, Thèse de 3me Cycle, Ecole Pratiques des Hautes Etudes, Paris, 1970, p.51, quoted in Bedrani, S. *L'Agriculture Algérienne depuis 1966*, OPU, Alger, p.248.
60. Clegg, J. *op.cit.*, Ch. 8 particularly.
61. King, R.(1977) *Land Reform: A World Survey*, London, Bell, p.433.

62. Bedrani, S. *op.cit.*, pp.373 and 374.
63. Mazri, H. (1975) *Les Hydrocarbures dans l'Economie Algérienne*, SNED, Alger, 1975, p.69.
64. In 1971 an agrarian reform was implemented and sought to reduce the size of large holdings in particular.
65. Quoted in Clegg J., *op. cit.*, p.123.
66. On the composition of the state bureaucracy, see Clegg, J. *op.cit.*, p.113 onwards.
67. Banque Nationale d'Algérie, quoted in Benachenhou, A. (1979) *L'Exode Rurale en Algérie*, Presses de l'ENAP, Alger, p.85.
68. King R., *Land Reform: A World Survey*, G. Bell and Son, London, p.434.
69. Hamel, B.(1983) *Système Productif Algérien et Indépendance Nationale*, OPU, Alger, p.305.
70. Hamel, B. *op. cit.*, p.275.
71. Bourenane N., Les causes structurelles de la crise de l'agriculture Algérienne, in *Les Politiques Agraire de l'Algérie*, *op. cit.*, pp.200 and 201.
72. Bedrani, S. *op.cit.*, pp.373 and 374.
73. Institut des vins de consommation courante (JVCC), 1964-1972, Paris 1972, p.8, quoted in Himberg, H.A. *op.cit.*, p.254.
74. Ottoway and Ottaway (1970) *Algeria: The Politics of a Socialist Revolution*, University of California Press, Berkeley, 1970, p.214.
75. Benachenhou, A *op.cit.*, p.370.
76. Tlemcani, R. (1986) *state and Revolution in Algeria*, Zed Books Ltd., London, p.53.
77. For a class analysis of the Algerian dominant social groups see Raffinot M. and Jacquemot, P., *op. cit.*, Ch.II.
78. Benachenhou, A. *op. cit.*, p.370.
79. Souman Congress, first co-ordination meeting of Algerian revolutionary leaders in 1956, quoted in Hamel, B. *op. cit.*, p.135.
80. Information taken from:
 - Europa Publications Limited, *The Middle East and North Africa 1984-1985*, 31st edition.
 - *Encyclopedia Britannica, Macropedia*, Vol. I, 1974.
 - US Army area handbook for Algeria, by the Department of the Army, Pamphlet 1972.

81. *Petroleum Press Service* (1967) Vol. 34, pp. 184 and 468.
82. Benissad, M. E. (1982) Economie du développement de l'Algérie, sous-développement et socialisme, *Economica*, Paris, p.288. Chapter II (Notes)

CHAPTER III
THE HYDROCARBON INDUSTRY WITHIN THE
DOMESTIC ECONOMY

The history of the Algerian hydrocarbon industry may best be understood as the continuation of the anti-colonial struggle by a nationalistic state whose claimed objective was to control the basic lever of the domestic economy.

Insofar as the hydrocarbon industry was the only dynamic industry by the end of the colonial era, its control by the Algerian state became vital to the implementation of any autonomous social project. Hence as early as December 1963 (one year after independence) Sonatrach (the state oil company) was created with a first objective of marketing oil (the weakest link in the hydrocarbon chain).

Sonatrach's entry into the hydrocarbon chain gradually widened to the extent that, by 1966, the Algerian company became involved in all stages of the hydrocarbon industry. Then following the February 1971 nationalisation Sonatrach was able to control the whole of the hydrocarbon industry in Algeria. To the extent that the nationalisation of the hydrocarbon industry meant that Sonatrach would appropriate a surplus profit hitherto appropriated by foreign oil companies, the domestic control of that industry implied a more substantial share of the oil rent. This greater share could then be used to implement the chosen growth strategy.

Under these circumstances, Sonatrach's control over the domestic oil industry would favour the implementation of the two basic functions assigned

by Algerian policy-makers to this industry, i.e. the motivating function (*fonction d'entrainement*) and the financing function (*fonction de financement*).

1. The hydrocarbon industry productive base.

As the export of crude oil and natural gas does not represent a process of industrialisation as such, processing of these raw materials was to constitute the ultimate step towards the building of an integrated industrial structure.

Thus, in accordance with a growth pole approach, four main industrial zones¹ were then connected to various industrial plants spread throughout the country (see Appendix III-1).

Of the four main industrial zones two are situated in the South:

1. The Hassi-Messaoud zone which covers the largest oilfield in the Algerian Sahara.
2. The Hassi-R'Mel zone which holds the fourth most important gas field in the world.

The Hassi-Messaoud and Hassi R'Mel zones then represented by 1979:

- 1015 oil wells
- 109 gas wells
- 2 natural gas treatment plants
- 2 liquified petroleum gas (L.P.G.) extraction units
- 1 refinery

The two other main industrial zones, on the other hand were located in the North along the coast line:

1. The Skikda industrial zone (East) comprised:
 - 1 liquifaction complex
 - 1 petrochemical complex
 - 1 15 million ton/year refinery
 - 1 gas and oil terminal

2. The Arzew industrial zone (West) on the other hand encompassed:
 - 1 2.5 million tons/year refinery
 - 1 ammonia fertiliser complex
 - 3 liquifaction complexes
 - 1 methanol and synthetic resin complex
 - 2 gas and oil terminals

Finally added to these main industrial zones and having in view a policy of regional equilibrium, various plants had been erected in various parts of the country (plastic material processing at Setif, El-Chlef, Draa El-Mizan, Médéa, M'Sila and Batna; a fertilisers complex at Annaba).

Within the hydrocarbon productive base, processing plants would constitute the core and the realisation of the industrialising industries' concept. The implementation of the hydrocarbon industry covered two decades (1960s and 1970s) and was spread over three essential branches (the oil, petrochemical and gas branches).

The oil industry (for technical information see Appendix III-2)

The first refinery to be built in Algeria was the Hassi Messaoud refinery² which started production in 1961 with a capacity of 100,000t/year. It acted

essentially as a support base for the oil companies operating in the Sahara desert and did not disturb the Algerian market which was supplied through imports from France.

The Algiers refinery³ on the other hand, with a 2.5mt./year (million tons/year) capacity, went on stream in 1964. Its capacity was relatively important with regard to domestic consumption which did not exceed one million tons/year until 1967.⁴

The Hassi Messaoud and Algiers refineries were however built under French supervision when Algeria was still a colony. As such they cannot be related to the Algerian growth strategy or to the building of an independent and national economy.

The implementation of Arzew⁵ refinery, on the other hand, resulted from a sovereign decision taken by the Algerian government. With a capacity of 2.5mt/year, this refinery went on stream in 1972 (when the two existing refineries could hardly satisfy domestic demand which amounted to 2.7 mt/year⁶ in 1972). In view of the structure of extracted products the Arzew refinery seemed to respond to a new demand structure. In particular, the relative importance of naphtha (387,000 t/year) as a feedstock to the petrochemical industry points to the new emphasis on integrating the economy.

Finally whereas the previous refineries may have been responding to the motivating function (*fonction d'entrainement*) through forward linkages with the rest of the economy, the Skikda refinery⁷ seemed to aim at the realisation of the second function (financing function) by considering the world market. The Skikda refinery was to treat 15 mt/year of crude oil from Hassi Messaoud

and 277,100 tons/year of imported reduced crude. The choice of a 15 mt/year was not however a straightforward one. For in 1974 Temmar⁸ had presented the future refinery as a 2.5 mt/year unit. Then Mahiout⁹ had mentioned a 7.5 mt/year unit. Finally Sonatrach decided on the building of a giant refinery. The indecision of Sonatrach's planners may, in this context, be related to the 1973 oil crisis which saw the posted price of Algerian oil jump¹⁰ from \$3.555/barrel in January 1972 to \$12.75/barrel in October 1974. Sonatrach's planners, apparently, saw an opportunity to enter the world market of refined products and increase the Algerian state's share of the oil rent.

With respect to the domestic market, however, naphtha (23.6% of total output) and aromatics (benzene, toluene, paraxylene etc.) may constitute feedstocks for a petrochemical industry that would emerge as the final stage of the hydrocarbon industry.

The petrochemical industry.

Because of the specificity of its products, the petrochemical industry, can be regarded as the most promising industrialising industry. Indeed, it can provide agriculture with fertilisers and plastic film and serve as a supporting industry for light industries (plastic material).

The domestic fertiliser industry¹¹ had emerged through the implementation of two complexes. The first one, in the Arzew industrial zone, produced nitrogenous fertilisers. Its overall capacity at design amounted to 1.717 mt/year. The second complex, on the other hand, was built near Annaba and went on stream in 1972 (three years after the Arzew complex). At full capacity level this complex was to produce 1.815 mt/year of phosphate fertilisers. Initial spending on the fertiliser industry was estimated at 2,293 billion dinars

but in 1978, due to completion behind schedule, the cost of these projects jumped to 3.289 billion dinars (+43% of initial cost). Finally in 1979 two new projects were scheduled.¹² The Tebessa unit was to produce 280,000 t/year of superphosphate and the Annaba II unit was to produce 2.3 million t/year of phosphate fertiliser.

The plastic industry,¹³ on the other hand, was to realise three objectives:

1. To replace imports of so called strategic products such as ethylene and polythene
2. To feed downstream industries with inputs
3. To internalise exploitations of hydrocarbon resource.

The basic petrochemical industry emerged as a synthetic resin and methanol complex situated near Arzew. This complex went partially on stream in 1976 and was designed to produce 267,000 t/year of various feedstocks. Because of delays the final cost of the project amounted to 429 million dinars instead of the anticipated cost of 202 million.

The second complex situated near Skikda went on stream in 1977. This complex was designed to produce 380,000 t/year of various feedstock. According to Mekkideche the final cost of the Skikda complex amounted to twice the anticipated cost. The Skikda complex nevertheless served as a backing industry for downstream plastic transformation (plastic bags, PVC sheets, plastic film) which emerged in Setif in 1976 and El-Chlef in 1979.

Because of their size, oil and petrochemical industries were to market part of their output within the domestic market whereas the rest would be realised within the world market. On the contrary the bulk of the gas productive base seemed oriented towards the world market rather than the domestic one.

The gas industry.

In the export of natural gas two paths compete:

1. Export through liquifaction of natural gas (LNG path)
2. Export through pipeline (pipeline path)

Having inherited a liquified gas plant codenamed GL4/2 at Arzew, Sonatrach seemed to have favoured (at least until 1980) the first path and, in so doing, several liquifaction plants were programmed¹⁴ and set up along the coast.

By the early 1980s, the productive base for the liquifaction of natural gas amounted to four liquifaction complexes the combined capacity of which was set by design at 30.5 billion cubic meter (bcm) per year. Three of the complexes codenamed GL4/2, GL1/2 and GL2/2 were situated within the Arzew industrial zone and were to process 1.5, 10.5 and 10.5 bcm of natural gas respectively while the fourth complex built near Skikda (codenamed GL1/K) would process 9 bcm/year. The implementation of the liquifaction complexes had been plagued by delays (at least 3 years for the GL1/K and GL1/2 complexes) and resulted in cost overrun that amounted to 3.3 billion dinars for the GL1/2 complex.

The second option envisaged by Sonatrach emerged as the implementation of the trans-mediterranean pipeline¹⁵ joining Hassi R'mel in Algeria to Italy via Tunisia and Sicily. The pipeline would carry 12 bcm/year to Italy and its capacity could be increased to 18 bcm/year through the addition of the

compression stations.

Algeria had obviously set up an important productive apparatus within the hydrocarbon industry. The declared aim of this policy was to reinforce the productive capacity of the domestic economy and to bring about a "snow-ball effect" that would fill in the inter-sectoral matrix.

The hydrocarbon industry was then visualised by Algerian policy-makers as the motivating industry within the Algerian growth strategy. The realisation of its output, however, depended to a great extent, on conditions prevailing within the world market and put into question the ability to motivate and the viability (as an introverted sector) of an industry which was more oriented towards the world market than the domestic one.

Under these circumstances, the impact of the hydrocarbon industry on the domestic economy may be grasped through two basic functions (motivating and financing) assigned to this industry by Algerian policy-makers.

The motivating function would then bring about linkages:

- Backward linkages by stimulating upstream activities such as steel industry and construction work
- Forward linkages by favouring the creation of downstream activities such as light industries and the development of agriculture

The financing function, on the other hand, would emerge as a fiscal linkage and participate, through the use of the oil rent, in the erection of a productive apparatus by imports of means of production and know-how. This import (considered as temporary by Algerian policy-makers) would represent the basis

upon which an integrated economy would emerge (through the filling in of the inter-sectoral matrix).

2. The motivating function of the hydrocarbon industry

According to this function, hydrocarbons can be viewed either as a source of energy or as a feedstock to petrochemical industry. As a source of energy, hydrocarbon products' utilisation would be spread over all sectors of the economy if the potential demand is met by an appropriate prices policy. As a feedstock to the petrochemical industry, hydrocarbon products could participate in the development of agriculture (fertilisers in particular) and plastic industry the products of which range from detergents to synthetic fibres.

2.1 The price policy of the refined markets

Up to 1968, Sonatrach was not involved in the domestic market. The latter was shared among foreign firms (BP, Esso, Mobil.etc.) which divided Algeria into eleven price zones. The "zero zone" comprised Algiers, Oran, Annaba and Skikda where petroleum products were stocked. The market price was the lowest in the zero zone and increased (transport differential) along the distance from the zero zone. This policy penalised the hinterland and accentuated the regional disparities (to the extent that a polarisation effect towards the coastal regions was inevitable).

Sonatrach's involvement in the domestic market started by its buying BP's network in January 1967¹⁶ and the nationalisation of American interests in June 1967. Finally by May 1968 foreign capital was totally nationalised and Sonatrach became the only operator in the domestic market of energy products¹⁷. The 12th June 1968 decree, then, introduced a new price structure

which was to stimulate the growth of the more backward regions by cheapening all petroleum products.

Table III.1. Domestic price reductions after nationalisation (AD/hl.)

| | Lowest Price | Highest Price | New Price |
|--------------|--------------|---------------|-----------|
| Premium | 99.10 | 110.59 | 97 |
| Petrol | 89.20 | 99.60 | 89 |
| Paraffin Oil | 34.60 | 45.00 | 32.95 |
| Diesel | 59.60 | 71.03 | 44.70 |
| DFO | 20.30 | 31.73 | 19.30 |
| LFO(AD/R) | 16.45 | 30.06 | 16 |

Source: Amended from Mazri, H. (1975) *Les Hydrocarbures dans l'Economie* ed. SNED, Alger, p.99.

Although all regions benefited from the price reductions, the backward ones (the hinterland) benefited most.

Liquified gas followed the same path since from an average price of 16 dinars/bottle, a unique price was set at 10 dinars/bottle¹⁸.

Despite the fall in their market prices, energy products were still heavily taxed after the nationalisation of the network.

Table III. 2. Energy products, prices and taxation (AD/h.)

| Products | Market Price | Taxation | % Taxation |
|----------------|--------------|----------|------------|
| Premium Petrol | 97 | 71.16 | 73.36 |
| Petrol | 89 | 66.08 | 74.25 |
| Paraffin Oil | 32.95 | 11.74 | 35.6 |
| Diesel | 44.70 | 40.35 | 90.27 |
| LFO | 16 | 0.47 | 2.9 |

Source: Amended from Mazri, H., *op. cit.*, p. 98.

Premium and petrol were the most expensive. The heavy taxation encompassed in their prices allowed the government a possible income redistribution from well-to-do categories (owners of private cars) to other less affluent ones. Paraffin oil and diesel on the other hand were relatively less expensive (although the latter was heavily taxed). Paraffin oil was used to improve the living conditions of the rural population (lighting) and diesel to stimulate the development of transportation means (lorries and buses in particular).

Finally LFO (light fuel oil) being a feedstock for industrial activities, its low price and negligible taxation was to improve the competitiveness of the industrial sector through low cost energy. This policy led De Bernis¹⁹ to argue that, by having at its disposal a low priced energy source, the national industry could compete effectively at the international level and favour the implantation of downstream activities which would fill in the intersectoral matrix.

Sonatrach's price policy developed along the same logic since while oil prices jumped in 1976 in the world market, the shock was not passed on to the domestic one.

Table III.3. Trend of average prices* in the domestic market (selected products)

| | 1974 | 1975 | 1976 | 1977 | 1978 |
|------------------|------|-------|-------|-------|-------|
| Butane | 100 | 100.9 | 104.5 | 104.4 | 104.4 |
| Premium | 100 | 153.6 | 153.6 | 154.5 | 154.5 |
| DFO | 100 | 100.3 | 100.3 | 99.3 | 99.3 |
| Diesel | 100 | 99.02 | 99.02 | 98.4 | 98.4 |
| LFO | 100 | 100 | 100 | 99.6 | 99.6 |
| TSP (fertiliser) | 100 | 99.08 | 99.08 | 99.2 | 99.2 |
| DAP (fertiliser) | 100 | 127.8 | 127.8 | 126.2 | 126.2 |

Source: Sonatrach, Division, organisation et planification, juin 1979. Quoted in Mekkideche, M. *op. cit.*, p. 249-250. Base period 1974:100.
DFO: Domestic Fuel Oil. LFO: Light Fuel Oil.

The table above shows a fall in real terms of most of the products (in particular DFO, Diesel and LFO). The price increase of premium relates to the heavy taxation which is integrated in the price structures.

The disconnection of domestic prices from world prices nevertheless had two contradictory effects:

- On the one hand Sonatrach's policy could meet the potential demand of either the productive section (forward linkages) or the private

households, thus motivating downstream activities and improving their competitiveness (through low energy costs) and improving the living conditions of the population (thus triggering a multiplier effect)

- On the other hand, the same policy may result in a wastage of financial resources (see section 2-4 below) whereby overconsumption of some petroleum products would constitute a loss of foreign currency earnings. This loss would then reduce the impact of the fiscal linkage on the domestic economy as a whole

2.2 The domestic consumption of energy products

The existence of domestic energy sources constitutes a necessary condition for energy product utilisation on a large scale but not a sufficient one. The price policy (presented above) and investment on infrastructure were to generate an effective use of hydrocarbon products.

According to Sonatrach, expenditure on infrastructure during the first four year plan (1970-73) fell short of demand which soared due to the price fall of 1968 and the investment programme of the plan. The marketing network was characterised at the end of the plan²⁰ by:

- A total disequilibrium in terms of stocking tanks between the coastal regions and the hinterland, hence shortages of petroleum products were chronic outside the coastal belt
- A lack of transportation means despite the acquisition of 500 tank-trucks
- A loose allotment of selling points outside the coastal regions

The infrastructure left by the colonial power and developed by Sonatrach during the first four year plan could not back up the energy demand. Hence Sonatrach had to devote part of its investment in the hydrocarbon industry into covering the whole territory by a dense network of stocking and selling points.

During the second four year plan (1974-77) the stock and distribution network received an investment of 1306 million dinars (6.7% of the total investment in the hydrocarbon industry). This network and the low price of energy formed then the basis upon which Sonatrach could contribute to spreading the use of energy products within the domestic economy. The potential demand of the developing sectors became effective and energy consumption was multiplied by six between 1965 and 1980.

Table III.4. Energy Consumption (1965-1980) in t.o.e. (ton of oil equivalent)

| 1965 | 1969 | 1973 | 1977 | 1980 |
|------|------|------|------|------|
| 1515 | 2594 | 3953 | 6018 | 9460 |

Source: MEIP, Alger 1978
1980: *UN Statistical Yearbook 1981*.

Sonatrach's actions permitted on the other hand a reshuffling of energy sources in favour of hydrocarbon products.

Table III.5. Energy Consumption Structure(%)

| Source | 1967 | 1969 | 1973 | 1974 | 1980 |
|------------------|------|------|------|------|------|
| Coal and wood | 19 | 13 | 7 | 0 | 0 |
| Coke | 0 | 3 | 3 | 2 | 4 |
| Crude oil | 0 | 0 | 0 | 1 | 1 |
| Refined products | 49 | 49 | 59 | 56 | 45 |
| N.G. | 8 | 9 | 8 | 15 | 21.4 |
| L.P.G. | 5 | 7 | 7 | 9 | 8.9 |
| Electricity | 19 | 19 | 16 | 17 | 19.7 |
| TOTAL | 100 | 100 | 100 | 100 | 100 |

Source: MEIP, Alger 1978

1980: own computation based on *UN Statistical Yearbook* data (1981)

The noticeable feature of the table above is the disappearance (from 1977) of coal and wood as a source of energy whereas their consumption amounted to 19% of total energy consumption in 1965. The increase in natural gas consumption, on the contrary, constituted a by-product of the gas export programme which allowed gas consumption to grow from 8% in 1965 to 21.4% in 1980. Households in urban areas actually switched on to natural gas while those in rural areas replaced coal and wood by gas, oil and liquified petroleum gas. The switch from wood and coal to refined products actually meant a halt to forest destruction which reached a peak during the independence war.

2.3 On the production and consumption of petrochemical products

Contrary to crude oil and energy products the production of petro-chemical products basically aimed at satisfying the domestic market. Their contribution to integrating the economy is more straightforward in that their very existence implies a qualitative improvement of the forces of production within the economy.

But despite the going on-stream of the Arzew complex (nitrogenous fertilisers) in 1969 and the Annaba complex (phosphate fertilisers) in 1972, the consumption of fertilisers could not be met by domestic output. Although installed capacity was, at the time of conception (1966), five times the level of consumption, Sonatrach had to rely on imports to meet domestic demand.

Table III.6. Domestic output and import of fertilisers (10³ tons)

| Fertilisers | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 |
|-------------------------------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|
| <hr/> | | | | | | | | | | |
| N Fertilisers ⁽¹⁾ | | | | | | | | | | |
| Production | 77 | 117 | 85 | 109 | 52 | 75 | 67 | 89 | 85.4 | 34.1 |
| Imports | 60.7 | 92.2 | 176 | 59.4 | 110.7 | 152.7 | 120.4 | 87.4 | 78.2 | 117.3 |
| P. Fertilisers ⁽²⁾ | | | | | | | | | | |
| Production | | | 82 | 139 | 91 | 107 | 77 | 113 | 106.3 | 82.7 |
| Imports | 100.7 | 214.5 | 118.5 | 47.7 | 100 | 20.1 | 74.3 | 40.3 | 10 | 6 |

(-27.7)³

(1) Nitrogenous fertilisers (2) Phosphate fertilisers (3) Export

Source: MPAT, service des douanes, Sonatrach, quoted in Molina, I. (1983) "La politique agraire: integration inter-sectorielle et evolutions structurelles", in *Les Politiques Agraires en Algérie, vers L'Autonomie ou la Dépendance*, CREA, Alger, p. 291.

Actual domestic output was well below the theoretical capacity, since both complexes had never gone beyond 50% of installed capacity.

Table III.7. Ratio of actual output to installed capacity

| Year | Ratio Arzew | Annaba | Year | Ratio Arzew | Annaba |
|------|----------------|--------|------|----------------|--------|
| 1972 | 18 | 15 | 1977 | 18 | 37 |
| 1973 | 22 | 48 | 1978 | 17 | 46 |
| 1974 | 10 | 41 | 1979 | 7 | 32 |
| 1975 | 15 | 35 | | | |
| 1976 | 14 | 41 | | | |

Source: Sonatrach, quoted in Bedrani, S., *l'Agriculture Algérienne face au marché mondial*, in *Les Politiques Agraire, .op.cit.*, p.93.

After eight years of "practice", the "collective worker" could not master the production process for reasons that seem to have been beyond its control, in particular:

1. The gigantism of the installation which was supposed to generate economies of scale
2. The inadequacy of the environment at an economic social and technical level

By choosing large complexes, Algerian policy-makers sought to realise economies of scale, but their choice ultimately resulted in the emergence of an experimental field for the concerned transnational firms.²¹ Thus the Annaba complex was at the time of construction one of the biggest of its kind. Its sulphuric acid unit (495,000 t/year) was in fact the biggest²² while its phosphoric acid unit (165,000 t/year) ranked among the eleven largest (of

which 5 are situated in the USA). The same argument would apply to Arzew complex since its ammonia unit (300,000 t/year) had twice the capacity of any other unit built at the same time.²³ These units however never reached their designed capacity.

The gigantism of the installations and the sophisticated technology²⁴ used resulted not in economies of scale but in an increase in the number of breakdowns that could not be handled by Algerian technicians. Besides the technical problems facing the fertilisers complexes, the environment in which they were evolving was not appropriate for an optimal use of the equipment:

- The maintenance of sophisticated equipment generated a flow of foreign technicians (usually from the conceiver or the builder) and of spare parts from abroad that, due to delays (bureaucratic among others) had resulted in chronic stopping of the complexes²⁵
- The high turnover of the domestic labour force on the other hand impeded any building up of know-how and resulted in a quasi-idleness of Algerian technicians.²⁶
- Finally, due to the complete lack of specialised firms in their environment, the complexes had to create and manage activities that were outside their scope: plumbing, electricity, masonry, transportation, labour force training.etc

The complexes have actually been built along "advanced" economies criteria whereas the Algerian scene lacked the appropriate environment. To reach

their optimal level, these complexes might have needed to be totally integrated not with the Algerian economy but with the world market and in particular with their conceivers or builders. Direct links between the latter and the complexes would have suppressed the problems mentioned above. This solution however would have put into question the building of the so-called national and independent economy.

Concerning plastic petrochemistry, its aim was:

1. To provide the domestic market with the basic products:

- Olefins (ethylene, propylene, butadiene) and methanol
- Aromatics (benzene, toluene, xylene)

that would serve as feedback for downstream processes (see Appendix III-3)

Whereas methanol and olefins production became effective in 1976 and 1977 respectively, aromatics production only emerged with the going on-stream of the Skikda refinery (1980)

2. To provide feedstocks (from the first objective) for downstream activities.

The second aim was not fulfilled during the period under investigation (1962-1980) and has not materialised during the fifth year plan (1980-1984). Sonatrach was then left with output that could not be absorbed domestically. Only 20% of CPI/Z methanol complex output was utilised by the El-Asnam units whereas the rest (80%) had to find outlets within the world market. Part of ethylene output (the Skikda complex) was exported while polyethylene (48,000 t/year) was used up within the domestic market²⁷. Finally, because no steam-cracking of naphtha had been built, the latter produced by the Skikda refinery was exported whereas as a feedstock it could increase olefin output.

Contrary to fertiliser industry, plastic industry needed more investment in downstream processes in order to complete the petrochemical chain which could emerge through production of (see Appendix III-3):

- Thermoplastics (polyethylene, polypropylene, dystyrene)
- Synthetic fibres (polyester, acrylic)
- Elastomere (synthetic rubber)
- Chemical products (pesticides, herbicides, cosmetics)

Implementation of downstream activities seems, moreover, to have been thwarted by external factors, in particular the market size constraint which implies consideration of two possible alternatives²⁸:

- An internal option: satisfaction of domestic needs
- An external option: satisfaction of domestic needs and export of excess output

The first option implies less investment (14 billion dinars) but higher production costs. Moreover it assumes the possibility of forecasting future domestic demand with a greater reliability. The second option, on the other hand, requires heavier investment (29 million dinars) but lower production costs (economies of scale). Both options nevertheless necessitate borrowing from foreign institutions which may impose restrictions that do not suit Algerian policy-makers.²⁹ Finally the second option poses the question regarding the availability of foreign markets to absorb Algerian output in a situation where excessive capacity in the European petrochemical industry has existed since the early 1970s.³⁰

Thus whereas the fertiliser industry could not respond to domestic demand, the plastic industry was still in the process of being built. The contribution of plastic industry to the integration of the domestic economy and to the materialisation of forward linkages does not, then, seem to be substantial. On the other hand, the fertiliser industry, which was supposed to direct its output towards the agricultural sector, had not been able to respond to domestic demand.

The linkage effects which would stem from meeting the requirement of the domestic market were not, therefore, fully operational. In this context the motivating function assigned to the hydrocarbon industry does not seem to have materialised to the extent that:

- Backward linkages emerge outside the domestic economy and reinforce the Algerian economy dependency on imports of a complex technology
- Forward linkages are hampered by the fact that the fertiliser industry cannot respond to domestic demand despite its theoretical capacity, whereas the plastic industry is still to be fully implemented

If the absence of the first type of linkage seems to have been inherent to the growth strategy adopted by Algerian policy-makers, the second type of linkage, however, may have been domestically dealt with by additional investments in the plastic industry and a more palpable involvement of Algerian technicians in the labour process. For, potentially, Sonatrach exhibited the same ratio of qualified personnel to the total workforce as a comparable oil company³⁰ in the advanced capitalist countries. The involvement of Algerian technicians in the labour process and a direct

confrontation with the imported technology seems, however, to have been hampered by the particular circumstances upon which the Algerian growth strategy evolved (see part C, Ch. II).

2-4. Sonatrach's policy and the domestic market

Availability of hydrocarbons then constituted an asset for the implementation of an integrated industrial framework. Although representing an essential means for spreading the usage of refined products, the adapted price policy had limitations that were neither explicit nor advantageous to Sonatrach as a firm. Prices handled by Sonatrach were set by government decrees and represented "political prices" rather than market ones. In fact Sonatrach was subsidising the rest of the economy through prices set below costs of production. Thus in 1979 total loss due to the price structure imposed by the government amounted to 1168.10⁶ dinars and was split into the following items:

Table III.8. Losses due to low prices (1979), dinars

| Products | Unit | Selling Price | Cost | Loss/Unit | Total Loss |
|--------------|----------------------------------|---------------|------|-----------|----------------------------|
| N.G. | D/10 ³ m ³ | 12.5 | 43.5 | 31 | 103 10 ⁶ |
| L.P.G. | D/ton | 669 | 753 | 84 | 56 10 ⁶ |
| Fuels | D/ton | 882 | 1045 | 163 | 549 10 ⁶ |
| Fertilisers | D/ton | 424 | 1239 | 587 | 478 10 ⁶ |
| TOTAL | | | | | 1186 10⁶ |

Source: Sonatrach, Division PGR 1980, quoted in Mekki-deche, M., *op. cit.*, p. 255.

This situation was furthermore appropriate for a wasting of resources which could have otherwise been exported (thus gaining foreign currency).

According to its "PGR division" Sonatrach was indirectly losing money through an overconsumption of premium petrol and lubricants within the domestic market. Losses stemming from opportunity costs (import of premium petrol and lubricants to satisfy demand) represented a rather important drop in foreign currency earning: 63 million dinars in 1979 and 72 million in 1980.

Instead of exporting these products, Sonatrach had to import some quantities at world prices and sell them at a loss within the domestic market. This situation constituted an obvious wasting of non-renewable domestic resources and a loss of earning for the economy as a whole. On the other hand, the direct loss due to the price structure imposed upon Sonatrach could improve (as De Bernis would argue) the competitiveness of other sectors of the economy and constitute an asset for implementing industries that could not be built in other circumstances.

The low cost of energy and petrochemical products (for agriculture in particular) would have improved the cost structure of downstream activities and brought about the erection of such activities as the first step. The latter would then have been followed in a second stage by the replacement of hydrocarbons as the main export item when downstream activities became competitive (through a process of learning by doing) within the world market. In fact the development of hydrocarbon exports which had soared from 32.48 tce. (tons of coal equivalent) in 1964 to 101.32 tce. in 1980³¹ and investment in hydrocarbon industry (see section 3 below) points to the inability of downstream activities penetrating the world market and reaching a self-sustained accumulation process.

Despite its growing mechanisation and the use of fertilisers, agriculture had not been able to respond to domestic demand, since the import of foodstuffs kept on increasing and absorbed part of the hydrocarbon receipts.

Table III.9. Import of foodstuffs and export of hydrocarbons (10⁹ dinars)

| | 1963 | 1967 | 1969 | 1973 | 1977 | 1980 |
|-----|-------|-------|------|-------|------|--------|
| I | 0.766 | 0.8 | 0.6 | 1.8 | 4.4 | 8.0 |
| X | 2.168 | 2.6 | 3.1 | 7 | 24.4 | 51.379 |
| I/X | 35% | 30.8% | 19% | 25.7% | 18% | 15.6% |

Source: 1963 and 1980: Benissad, M.E. (1982) *Economie de Développement de l'Algérie*, OPU, pp. 189 and 191.
 1967-1977: MPAT, *Synthèse du Bilan... Economique et Social de la Décennie 67-78*, Mai 1980, Alger, pp. 300 and 301.

Furthermore, whereas in 1967, 72% of cereal consumption was met by domestic output, in 1978, the latter satisfied only 34.5% of total consumption.³² The same pattern appears for all agricultural products.

The industrial sector, on the other hand, did not fulfill Algerian policy-makers' expectations. For despite its relatively important share in investment spending (see section 3-1 below) its contribution to GDP kept on declining³³ along with efficiency. (See Table III.10 below).

The incapacity of either the agricultural sector or the industrial one (hydrocarbons excluded) to either meet domestic demand or be competitive within

the world market actually resulted in a relative hypertrophy of the hydrocarbon industry.

Table III.10 Efficiency of capital and industrial output per head of the Algerian industrial sectors (1966-1977) (excluding hydrocarbons and public works) in constant 1969 dinars

| Year | Output (10 ⁶ dinars) | Output/Stock of Fixed Capital | Output/Worker |
|------|---------------------------------|-------------------------------|---------------|
| 1966 | 3289.5 | 0.416 | 35596 |
| 1969 | 3400.0 | 0.364 | - |
| 1973 | 4752.5 | 0.319 | 23409 |
| 1977 | 6363.6 | 0.210 | 21518 |

Source: DSCN - SEP quoted from Palloix, C., *Industrialisation et financement lors des deux plans quadriennaux (1970-77)* in *Revue Tiers-Monde* T.XXI, No.83, p.542.

3. Hydrocarbon industry and the financing function

The productive capacity installed within the hydrocarbon industry, in fact, exceeded and was to exceed demand from the domestic market. The second basic function (financing) is to explain this non-correspondence between supply and domestic demand. Algerian policy-makers had always argued that export of raw materials constituted a basic feature of an under-developed economy.

Export of crude oil had therefore to be disregarded in favour of export of refined products, for in the Algerian policy-makers' view:

"It is by a systematic processing of our national resources, by setting up of a basic industry providing the indispensable foundation of industrial processes... that the complete transformation of national economic conditions will be realised"³⁴

Having taken the hydrocarbon industry as the basic foreign currency earner for the chosen growth strategy, Algerian policy-makers had to devote part of investment spending to this industry in order to:

1. Create the basic industry (motivating function through forward and backward linkages)
2. Maximise foreign currency earning (financing function through a fiscal linkage)

Through its financing function, the hydrocarbon industry became the pillar that would shape the whole Algerian economy.

3.1. The development of the hydrocarbon industry

Having equated development with industrialisation and accepted De Berni's industrialising industries model, Algerian policy-makers had focused on the development of the industrial productive basis (as opposed to agriculture). This development was, however, biased from the very beginning to the extent that industry in general would absorb most planned investment, hydrocarbons attracting most of that investment.

The growth of industry, and of the hydrocarbon industry in particular, followed a trend of growing share in total investment after having been negligible during the colonial era and the first years of independence.

Table III.11. Planned investment (total and in industry) 10⁹dinars

| | 1963-66 | 1967-69 | 1970-73 | 1974-77 |
|----------------------------|---------|---------|---------|---------|
| Total investment (1) | 3.929 | 9.06 | 27.75 | 110.22 |
| Investment in Industry (2) | 0.81 | 5.4 | 12.4 | 48 |
| 2/1 (%) | 20.6 | 59.6 | 44.7 | 43.55 |

Source: 1963-66: De Bernis G.D., Deux strategies pour l'industrialisation du Tiers-Monde, in *Revue Tiers-Monde*, No. 47, Juillet-Septembre 1971, pp. 562 et 563.
1967-77: *Synthèse du Bilan...*, op .cit. pp.7 et 23

The share of industrial investment in total investment rose from 20.6% (1963-66) to an average of 49% during the three consecutive plans whereas the share of agricultural investment dropped from 13.9% in the period 1963-66 to 10.8% in the second four year plan.³⁵ By contrast, from being negligible during the first years of independence, the hydrocarbon industry had monopolised most industrial investment since 1967.

For the three plans, planned industrial investment was to reach 66 billion dinars, of which 26.4 billions (40%) would be invested in the hydrocarbon industry. In fact actual investment amounted to 99.86 billion dinars while the hydrocarbon industry received 48.3 billion (48.4%). (See Table III-12 below).

But while investment spending (in monetary terms) went beyond what was planned, in actual fact it did not generate the expected material base. In order to achieve the different plans 9.06 billion dinars had to be spent for the first plan,

15.68 billion for the second plan and 92.61 billion for the third one. Thus from an expected investment of 66 billion dinars (for the three plans) the completion of the planned projects was to need 217.21 billion dinars. The cost of all the projects included in the different plans represented more than three times the anticipated cost.

Table III.12. Industrial investment (10⁶ current dinars)

| | 1967-69 | 1970-73 | 1974-77 | 1978-80 |
|------------------------|---------|---------|---------|---------|
| Total investment | 5400 | 12400 | 48000 | |
| Planned investment | | | | |
| Invest in hydrocarbons | 2300 | 4600 | 19500 | |
| Total investment | 4890 | 20820 | 74150 | 116735 |
| Realised investment | | | | |
| Invest in hydrocarbons | 2500 | 9800 | 36000 | 38700 |
| Total investment | 35.05% | 57.04% | 44.46% | |
| Rate of realisation | | | | |
| Invest in hydrocarbons | 54.34% | 61.25% | 56.60% | |

Source: Amended from MPAT, *Synthese du Bilan...*, *op.cit.*, p.22
 1978-80: Benissad, M.E. (1985) *Stratégies et Expérience de Développement*, OPU, Alger, p. 192.

Hence the period 1978-80 covered a non-planned period which allowed a partial completion of delayed projects.³⁶ In this period industrial investment

represented 56.1%³⁷ of total investment while investment in the hydrocarbon industry represented 33.2% of industrial investment.³⁸ The discrepancy between planned and actual investment may stem from the fact that Algerian planners had to work with variables that were not in their control and suggests that the planning process lacked coherence.

Among factors that generated cost overrun, the external ones could be synthesised in the major role granted to transnational firms (in conceiving and building projects) and correlatively in the minor role (if any) played by Algerian technicians.

Formulas like "key in hand" or "product in hand" actually covered the disengagement of Algerian technicians from any active process in favour of the full involvement of the transnational firms (see section 3-3 below). The latter had therefore enough leeway to inflate their costs since their Algerian partners were not in a position to control the veracity of their claims. On the other hand internal factors were also at work in the emergence of cost overrun.

Of particular importance was the multitude of projects starting at the same time and creating competition among scarce resources (qualified labour force and some raw materials). This competition penalised (through delays in particular) industries that were not financially strong enough or did not possess the required "capital of relations".³⁹ Furthermore, resort to international indebtedness (guaranteed by hydrocarbon reserves), necessitated by the huge investment programmes, was to push costs up (through payment of interest in particular). In fact the effects of both external and internal factors suggest that the investment programmes of the plans over-estimated the absorptive capacity of the economy.

Investment in the hydrocarbon industry was furthermore disconnected from domestic demand since it basically aimed at the world market. The actual target (the world market) would then explain the unevenness of investment within the industry, since investment on exploration and petrochemical industry went respectively from 24.7% and 14.6% in 1967-69 to 10% and 8.8% in 1974-78. On the contrary investment on the LNG path jumped from 0.3% in 1967-69 to 14.2% in 1974-78.⁴⁰

The LNG path was developed on the assumption that the export of natural gas would gradually replace export of oil as a foreign currency earner. The financing function in this context would be devoted to natural gas whereas the oil industry would be internalised. Investment in the hydrocarbon industry then went beyond the need of the domestic economy and aimed at maximising the financial capacity of the economy.

3.2 On the financing function of the hydrocarbon industry

The investment needed to materialise the growth strategy chosen by the Algerian policy-makers had to be backed by financial resources drawn either from the export of hydrocarbons or international loans. Hydrocarbons have steadily risen from 57.8% of total exports in 1963 to 90% in 1975⁴¹ onward and represented a main source of external financing of the successive plans. On the other hand international loans guaranteed by the existence of hydrocarbon resources constituted the second source of foreign currency.

The share of external financing (hydrocarbon receipts and loans) in the investment structure of the different plans followed the same trend as hydrocarbon exports. During the first four year plan external financing backed

32.7% of total spending while it backed 62% during the second four year plan.⁴²

The growing share of external financing in the investment structure then resulted in the opening of the Algerian economy towards the world market (through the financial and commodities markets). This opening may however represent a contradiction to the claimed aim of building an introverted economy and constitute a new form of dependency which would jeopardise the possibility of an autonomous accumulation process. Due to the investment programmes of the different plans and to the speed with which Algerian policy-makers were implementing the industrial base, Algeria ranked in 1980 among the five most indebted countries of the "developing world".^{42'} With a debt estimated at 20 billion dollars, the debt service monopolised a growing share of export receipts.

Table III.13. Ratio of debt service to exports (%)

| Year | 1967 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 |
|---------|------|------|------|------|------|------|------|------|------|------|------|
| Ratio % | 4 | 8 | 15 | 15 | 14 | 13.7 | 16.1 | 17.1 | 22.3 | 38.3 | 31.4 |

Source: Benissad, M.E.(1982) *Economie du Développement de l'Algérie*, OPU, Alger, p.251
 MPAT, *Synthese du Bilan...*, *op.cit.*, p.286.
 1980: own computations based on MAPT, DGS, *L'Algérie en Quelques Chiffres*, Alger, 1982, p.23; and OECD (1981) *External Debt of Developing Countries*, Paris, p.19.

The ease with which Algerian policy-makers had been obtaining loans from international consortia may suggest that far from being opposed to international capital, the Algerian growth strategy was developing in accordance with the long term strategy of the latter. International loans along with hydrocarbon exports actually constituted the materialisation of a fiscal linkage between the

hydrocarbon industry and the rest of the economy.

The financial contribution of the hydrocarbon industry would then be grasped through a study of the foreign currency balance sheet of the state oil company (Sonatrach).

Table III.14. Balance sheet of the hydrocarbon industry (10⁹ dollars)

| | 1974 | 1975 | 1976 | 1977 | 1978 | Total |
|------------------|-------------|-------------|-------------|-------------|------------|--------------|
| Receipts: | | | | | | |
| Exports | 4.5 | 4.1 | 5.2 | 5.9 | 6.2 | 25.9 |
| Borrowing | 0.9 | 1 | 1.2 | 1.3 | 2.2 | 6.6 |
| TOTAL | 5.4 | 5.1 | 6.4 | 7.2 | 8.4 | 32.5 |
| Spending: | | | | | | |
| Investment | 0.96 | 1.33 | 1.93 | 3.22 | 3.4 | 10.84 |
| Debt service | 0.3 | 0.2 | 0.33 | 0.42 | 0.6 | 1.85 |
| TOTAL | 1.26 | 1.53 | 2.26 | 3.64 | 4 | 12.69 |
| Balance (R-S) | 4.14 | 3.57 | 4.14 | 3.56 | 4.4 | 19.81 |
| S/R | 23% | 30% | 35% | 50.5% | 47.6% | |

Source: Sonatrach, Planning divisions 1980, quoted in Mekkideche, M., *op. cit.* p 324.

The hydrocarbon industry had been obtaining foreign currency through two channels: export and borrowing which added up to 32.5 billion dollars for the period 1974-78. Investment in the hydrocarbon industry, however, kept on increasing throughout the period, since from a share of 23% of total receipts (1974) it monopolised around 50% by the end of the period. Moreover, for the year

1978, out of a total amount borrowed of 4 billion dollars, more than 2 billions were due to finance projects in the hydrocarbon industry.⁴³ This policy led to a relative hypertrophy of this industry since its share in GDP rose from 17.2% in 1967 to 32.1% in 1980.⁴⁴ The whole concept of the hydrocarbon industry as the motivating industry seemed to have covered a self-sustained accumulation within this industry instead of the expected growth of the other sectors of the economy.

Table III.15. Hydrocarbons output

| Products | Unit | 1967 | 1969 | 1973 | 1977 | 1978 |
|--------------------------|--------------------------------|------|------|------|------|------|
| Crude oil and condensate | 10 ⁶ t | 39 | 44.6 | 50.8 | 53.4 | 57.1 |
| NG | 10 ⁹ m ³ | 2.9 | 2.9 | 4.8 | 7.9 | 13.2 |
| LNG | 10 ⁹ m ³ | 1.3 | 1.8 | 2.5 | 4.2 | 6.6 |
| Refining | 10 ⁶ t | 1.9 | 2.0 | 4.7 | 4.1 | 4.4 |
| LPG | 10 ⁶ t | 0.1 | 0.1 | 0.2 | 0.5 | 0.7 |

Source: MPAT, *Synthèse du Bilan ...*, op. cit. p.65.

The growth of the hydrocarbon industry was then reflected in the adopted policy of maximising output, the bulk of it being directed towards the world market. Investment in the hydrocarbon industry could however generate a higher flow of hydrocarbons since idle-capacities constituted a basic characteristic of this industry. (See Table III.16 below).

These sterile over-capacities may suggest that Algerian policy-makers anticipated a higher level of export for both oil and gas. Whereas higher gas

export seemed appropriate with the gas reserves (see section 2-2, chapter II) higher oil exports would signify the end of any oil production in less than 15 years. The actual fact that over-capacities existed must be related to the lack of a long term policy on one hand and poor forecasting on the other.

Table III .16. Idle-capacities in the hydrocarbon industry

| | 1967 | 1978 |
|--------------------|---|---|
| Gas extraction | 16 10 ⁹ m ³ /year | 20 10 ⁹ m ³ /year |
| Gas transportation | 11 10 ⁹ " | 13.8 10 ⁹ " |
| LNG | - | 10 10 ⁹ " |
| Oil transportation | 11 10 ⁶ ton/year | 17 10 ⁶ ton/year |

Source: MPAT, *Synthèse du Bilan...*, *op. cit.* p. 66.

The lack of long term policy is exemplified by the over-capacity in the oil industry. For if all the installed capacity (74 million tons in 1978) were used, by 1990 Algeria would have had to import oil and face the world price of oil instead of a domestic cost. The whole growth strategy would then be put into question. Poor forecasting is related to the optimistic view about the capacity (or the willingness) of "advanced" economies to absorb gas output (in particular liquified natural gas).

The over-capacity present in the hydrocarbon industry actually constituted a loss of resources for other sectors of the economy. The deterioration of the terms of trade⁴⁵ and the "incapacity" (as shown by the state of mono-exporter of the Algerian economy) of the other sectors of the economy to finance their own

investment may partly justify the over-spending on the hydrocarbon industry. Facing this situation and having to fulfill the requirement of the chosen growth strategy, the hydrocarbon industry had to expand through a network (the world market) where conflicting interests had to be dealt with.

3.3 The impact of international relations on the hydrocarbon industry

Due to an apparent deficit in domestic human resources which amounted, according to Sonatrach, to more than 4000 highly qualified personnel (engineers and workers) in 1979 and more than 7000 for the early 1980 decade,⁴⁵ the setting up of the hydrocarbon industry implied the emergence of links between Sonatrach and transnational firms which monopolised the technology and know how. The contractual relationships between Sonatrach and foreign operators went through several stages.

Before 1974 signed contracts were of the type "key in hands" (turnkey contracts) or "product in hand". This type of contract reproduced plants already in existence elsewhere. In both cases the transnational firm would agree on an estimated cost of the concerned project and carry out the investment based on a fixed and non-revisable price. Sonatrach's role was, in this context, reduced to a distant supervision of the whole process. These types of contract however suppressed (for the Algerian firm) the task of managing several contracts but implied the absence of its labour force (in particular ⁵at the engineering level) within the realisation process of a given project. For the transnational firm on the other hand the contracts mentioned above did not make provisions for sudden perturbations within the world market, i.e. the jump of the oil price in 1973. In fact this jump made obsolete both contracts in that forecasting the cost of any projects was no longer possible for the transnational firm (forecasting the trend of a crucial variable (the oil price) seemed no longer feasible).

The "cost plus fee" contract then came into being and ensured a substantial profit to the transnational firm whatever the cost of the project. According to this contract, the foreign operator carries out an investment, recovers its spending and is attributed an agreed fee. To control the foreign operator spending and to avoid inflated costs, Sonatrach then hires a foreign firm to do so.⁴⁶

Being absent from the engineering process and aiming at being competitive within the world market, Sonatrach was reduced to accepting the technology imposed by the foreign operators. The lack of domestic technical skill, on the other hand, made it difficult if not impossible for Sonatrach to control the adequacy of the technology chosen (or more precisely imposed) by the foreign operator.

Furthermore, the need to avoid dependency on one partner pushed Sonatrach into diversifying its relationships but created a multitude of processes which could hardly be mastered over a short period of time by the domestic labour force. In the refining activities eleven processes were utilised while in the liquifying ones four processes existed.⁴⁷

The lack of domestic skills, the type of contracts developed by Sonatrach with foreign operators and the multitude of processes used in the hydrocarbons industry required, for every project, the emergence of a downstream relationship: the so-called technical assistance. This latter took different forms in response to specific problems:

1. From the very beginning of its activities, Sonatrach hired technical assistants on an individual basis. This formula however was worthwhile

neither to Sonatrach nor to the foreign operator. These assistants were not generally skilled for the specific process utilised by the latter and represented a loss of earnings for the foreign operator who would prefer to place its own staff

2. The shortcomings of the above formula resulted in the setting up of a partnership through a mixed management structure. Sonatrach would then create an association with a foreign operator motivated (usually as a customer) by optimal performances of the installation⁴⁸

Although the mixed management formula might ensure an optimal production level, it contradicted (at least in the short and medium term) the financial function assigned to the hydrocarbon industry, for in the above formula the share in management represented a share in the oil rent too. The internalisation of the financial surplus assigned to Sonatrach was therefore partially offset by foreign operators' involvement in the management of the complexes. This involvement through the so-called technical assistance developed through the years instead of declining. For the whole Algerian economy the cost of technical assistance grew from one billion dinars in 1973 to 8.6 billions in 1978 and amounted to 28.8 billions for the period 1973-78. Of the total cost of 28.8 billions, 14 billions were disbursed for the hydrocarbon industry.⁴⁹

Although technical assistance was (or should be) conceived as a momentary phenomenon which would create the conditions of its disappearance it actually surged into every stage of any project from feasibility studies to management of the complexes. The non-existence of co-ordination among Algerian companies generated duplications of identical studies and hindered the capitalisation of know-how by Algerian technicians who were constantly pushed outside technical

activities and into administrative work. The financial ease (based on the belief that the reserves of hydrocarbons were unlimited) and the myth of the foreign expert (who was assumed to know more than any Algerian technician) allowed, then, a constant rebirth of technical assistance.

Although Sonatrach's claimed aim was the domination of the motivating function over the financing one, the incapacity of other sectors of the economy to reach a self-sustained accumulation and the cost of implementing and operating the hydrocarbon productive basis seem to have pushed the hydrocarbon industry outside the domestic economy.

The externalisation of the hydrocarbon industry constituted, nevertheless, a necessity which could not be avoided in view of the requirement of the Algerian growth strategy. This externalisation of the hydrocarbon industry would, however, be beneficial to the Algerian economy only in so far as Algerian policy-makers could:

1. Negotiate their integration into the world market (for oil in particular) and maximise the receipts of hydrocarbons from exports
2. Gradually divert the internationalisation of the capital process (of which peripheral economies in general and Algeria in particular constitute moorings) into a self-sustained accumulation process

Whereas the first condition emphasises the role of the financing function, the second condition favours the realisation of the motivating function. Mastering domestic hydrocarbon resources and appropriating a larger share of the oil rent, represented then the challenge and the essential means for implementing an integrated economy. The integration of the economy, however, goes beyond a

purely economic problem and requires conditions (political conditions in particular) which the very appropriation of the oil rent may oppose (see Part C).

The world market for oil must nevertheless constitute the first battlefield (the second field being the domestic one) upon which the struggle over the appropriation of a larger share of the oil rent would take place.

The struggle over the appropriation of the oil rent, however, started before Algeria's independence and involved the French government and the major oil companies (dominated by US interests) which monopolised Middle-East oil (see Part B). As a petroleum economy, Algeria did not actually constitute another oilfield for the oil cartel but was to evolve at first along with the French government's policy in its search for secure sources of energy.

The first phase of the history of Algerian oil may then be grasped as the history of the erection of an enclave economy oriented towards the French economy. This phase was to spread from the first discovery of oil to the year 1969 when Algeria joined OPEC.

The second phase, on the other hand, actually started in February 1971 when the Algerian government, through Sonatrach, took a majority control over the Algerian oil industry. The latter was then to play a leading role in the implementation of a growth strategy which was assumed to put into question the prevailing international division of labour.

NOTES

1. Mekkideche, M. (1983) *Le Secteur des Hydrocarbures*, OPU, Alger, p.51.
2. Mazri, H. (1975) *Les Hydrocarbures dans l'Economie Algérienne*, SNED, Alger, p.54.
3. Mazri, H. *op.cit.*, p.54.
4. Mazri, H. *op.cit.*, p.55.
5. Mazri, H. *op.cit.*, p.124.
6. Hamel, B. (1983) *Système Productif Algérien et Indépendance Nationale*, OPU, Alger, p.36.
7. Mekkideche, M. *op.cit.*, p.85.
8. Temmar, H. (1974) *Structure et Modèle de Développement de l'Algérie*, SNED, Alger, p.273.
9. Mahiout, R. (1974) *Le Pétrole Algérien*, SNED, Alger, p.186.
10. Sid-Ahmed, A. (1980) *L'OPEP, Passé, Présent et Perspectives*, OPU, Alger, p.125.
11. Mekkideche M. *op.cit.*, p.87.
12. *Petroleum Economist* (1979) Vol. XLVI, No. 3, March, and Mekkideche, M. *op.cit.*, p.89.
13. Mekkideche, M. *op.cit.*, p.90.
14. Mekkideche, M. *op.cit.*, p.62.
15. *Petroleum Economist* (1983) Vol. L, No. 7, July, p.257.
16. Mahiout, R. *op.cit.*, p.144.
17. Mahiout, R. *op.cit.*, p.145.
18. Mekkideche, M. *op.cit.*, p.328.
19. De Bernis, C.D. (1976) Industries industrialisantes et les options Algériennes, *Revue Tiers-Monde*, No.47, Jun-Sept., p.560.
20. SEP (1973) *Plan Quadriennal 1974-77, Hydrocarbures et Petrochimie, Distribution et Moyens Propres*, Fascicule No.8, Alger.
21. The French firm Krebs gained experience by building for the first time the sulphuric acid unit of Annaba Complex, Technip of France did the same with the ammonia unit of Arzew complex.
22. FAO (1983) Rapport annuel sur les engrais 1969 à 1973, quoted in Bedrani S., *L'Agriculture Algérienne face au marché mondial, in Les Politiques Agraires en Algérie, vers l'Autonomie ou la Dépendance*, CREA, Alger, p.101

23. Bedrani, S. *op. cit.*, p.103.
24. Whereas in other economies, each fertiliser unit produces one product, Annaba complex possessed two production lines which could produce four products each.
25. Over the period 1970-1975, the ammonia unit stopped producing for 11 months in 1970, 6 months in 1971, 6 months in 1975 and 30 months over the whole period. The sulphuric acid unit stopped for 10 months spread over the period 1972-75 and the phosphoric acid unit stopped for 10 months as well.
26. In the Arzew industrial zone it is estimated that the rate of turnover of the labour force is situated between 10 and 15%.
27. Mekkideche, M. *p.cit.*, p.338.
28. Sonatrach (1977) *Division Engineering et Développement: Plan de Développement de la Pétrochimie*, Alger
29. In 1966 the World Bank responded negatively to an Algerian request for a loan to finance its fertiliser plants.
30. Mekkideche, M. *op.cit.*, p.109.
31. UN Statistical Yearbook, various issues.
32. MPAT (1980 Synthèse du Bilan Economique et Social de la Décennie 1967-1978, Mai, Alger, p.93.
33. The contribution of the industrial sector (hydrocarbons excluded) to GDP went from 20% in 1966 to 9.7% in 1980.
34. SEP (1970) *Plan Quadriennal 1970-73, Preambule au Rapport Général*, Alger.
35. MPAT Synthèse du Bilan..., *op.cit.*, p.7
36. Half (196.9 billion dinars) of the investment programme of the five year plan (1980-84) concerned delayed projects of previous plans.
37. Pauwels, J.P. (1983) *Reflexions sur les Nouvelles Orientations Economiques et Energetiques du Plan Quinquenal (1980-84) et sur l'Organisation de l'Economie Algérienne*, ENAL, Alger, p.10.
38. Benissad, M.E. (1985) *Stratégies et Expérience de Développement*, OPU, Alger, p.92
39. The "capital of relations" is related to the use of clientalism in order to obtain privileges (finance, raw material).
40. Sonatrach, Division planification, Alger 1980, quoted in Mekkideche, M. *op.cit.*, p.45.
41. Dersa (1981) *L'Algérie en Débat, Lutttes et Développement*, Maspero, Paris, p.103.

42. Palloix, C., Industrialisation et financement lors des deux plans quadriennaux, in *Revue Tiers-Monde*, T XXI, No. 83, p.550.
- 42' OECD (1981) *External Debt of Developing Countries*, OECD, Paris, p.19.
43. *The Oil Daily*, June 1979, quoted in Mekkideche, M. *op.cit.*, p.145.
- 44 Benissad, M.E. (1979) *Economie du Développement*, *op.cit.*, p.53.
45. Petrole et gaz arabes, No.245, June 1979.
45. Mekkideche, M. *op.cit.*, p.127.
46. For GL2/Z, Sonatrach hired EIL (India) to control Pullman-Kellog, the operator.
47. Sonatrach, division PGR, Alger, 1979. Quoted in Mekkideche M., *op.cit.*, p.156, 157.
48. Showa Oil (Japan), TEC (Japan) and El-Paso (USA) with GDF (France) were respectively co-managing with Sonatrach in the refining, petrochemistry and liquifaction plants.
49. MPAT, *Synthèse du Bilan op.cit.*, p.307 and Benachenhou A. (1980) *Planification et Développement en Algérie (1962-1980)*, CREA, Alger, p.87 et 88.

PART B
CHAPTER IV
THE ALGERIAN-FRENCH RELATIONSHIP

The first phase in the history of the Algerian oil industry took place after World War II which constituted the catalyst for starting research in the Sahara desert.

Having realised that control of oil resources represented an objective condition for its economic and military might, the French government could not be satisfied by its dependency on Middle-East oil. Thus in October 1945, the French government set up the Bureau de Recherches Pétrolières (BRP), the task of which was to direct a research programme in the Metropolis and its colonial dependencies.¹

By 1952 the Société de Recherches Pétrolières en Algérie (SN Repal) and the Compagnie Française des Pétroles (CFP) received concessions covering 240,000 km². The conceded surface kept on increasing and reached 600,000 km² in 1954 and 800,000 km² in 1960.² These two companies were joined in 1953 by the "Compagnie des Pétroles d'Algérie" (CPA) controlled by Royal Dutch Shell and the Compagnie de Recherche et d'Exploitation du Pétrole au Sahara (CREPS) controlled by the French government.

As early as 1954 the CREPS discovered a deposit of dry gas at Djebel Berga (South West of In-Salah). Although gas was not what the oil companies were looking for, its discovery nevertheless confirmed the existence of hydrocarbons in the region. In January 1956, the CREPS finally discovered the exploitable deposit of Eddjeleh (near the Libyan border) and other deposits in the same region. In June of the same year joint research between CFP and the SN Repal led to the discovery of the

Hassi-Messaoud deposit (the most important ever discovered). Finally in November 1956 the SN Rejal discovered the important humid gas deposit of Hassi R'Mel.

After a few years of research, the oil companies fulfilled the French government's expectations by reducing the Metropolis dependency on Middle-East oil. To convey oil to its market (the French one), a first six inch diameter pipeline was laid down between Hassi-Messaoud and Touggourt (200 km) from which oil was carried by tank-wagons to the port of Skikda. Meanwhile a second, 24 inch diameter pipeline linking Hassi-Messaoud to Bejata (662 km) was under construction and started carrying oil in November 1959. Finally a third pipeline (24 inch diameter) linking Edjeleh to the Skhirra (Tunisia) (772 km) began conveying oil by September 1960.

The discovery of oil in the "French" Sahara, obviously attracted non-French firms which could not, a priori, carry out the French government policy. To keep the Saharan oil within the French influence (both economic and political) a set of legislation (known as the Saharan oil code of which the ordonnance of the 22nd November 1958³ constituted the basic text), was promulgated.

1. From the Saharan oil code to the Evian Accords

The Sahara oil code⁴ stated in its preamble that:

"Metropolitan France, basically interested in safeguarding security of supply in the Franc zone, hereby wishes to show that she is not interested in a heavy taxation arising from the exploitation of Sahara oil resources."

The code, then, embodied two main objectives:

1. To ensure French administrative control over oil activities in the Sahara.

- 2 To attract capital investment through more favourable terms than those prevailing in the Middle East

At the juridicial level, operating firms had to be constituted under French law and French nationals were to predominate their boards of directors. In the case of conflicts of interests between a company and the conceding authority, the French Council of State was the only body entitled to make a decision. Against this close administrative control, the oil companies were nevertheless confronted by a more liberal fiscal policy than the one prevailing in the Middle East.

Concerning the pricing of Saharan oil, the code (article 33) stated that: "Selling prices (posted prices) of crude or finished products must be the current prices of the international market which are set according to the modalities of the convention type." These were then defined as those prices which allowed Saharan oil to reach the consumption regions at the same level as prices of oil coming from other regions (article C33 of the convention type).

Due to its proximity to the French market, Saharan oil had then to be overpriced to comply with article 33 of the code. The oil companies could then realise a surplus profit that would not be taxed since taxation was calculated on the basis of the "realised price" which was lower than the posted price.

Taxation, on the other hand, amounted to 50% of net profit (article 65). But royalty (12.5% of the value of oil at the field) was not considered as cost to the producer but was actually tax deductible.

Finally, companies were authorised to set up a "provision for reconstitution of the oilfield" (depletion allowance) which amounted to 27.5% of the value of oil at the field. The depletion allowance was tax free for five years but had to be used in exploration expenditure (not necessarily in the Sahara).

The tax system provided by the Saharan oil code, then, offered more favourable terms to the operating oil firms than those confronting them in the Middle East (see chapter V below). On the other hand, the role of the French government as tax collector was marginal. Its policy, however, was to strengthen French oil companies in their competition with the "majors" and to increase the amount of "Franc oil" in France's oil consumption.

The Evian Accords (which led to the independence of Algeria) nevertheless stressed the continuation of the Saharan oil code after Algeria's independence and stated that: "Algeria succeeds France in its rights, prerogatives and obligations as a conceding public power in the Sahara, for the application of the oil and mining legislation".⁵

What the Evian Accords did not mention was the fact that the Saharan oil code was greatly revised (especially about the relations between oil companies and the State) a few weeks before the signing of the Accords in order to increase the autonomy of the oil companies *vis-à-vis* the conceding authority i.e. the Algerian State. The main changes to the Saharan oil code were included in two decrees (16 and 17 February 1962)⁶.

The decree of 16 February 1962 suppressed the state's involvement in fixing the oil price, thereby allowing the oil companies to decide upon the level of taxation they should be subjected to. The same decree reduced from four years to one the time given to the tax authorities to question the calculations of the selling prices of oil leaving the field.

The decree of 17 February 1962, on the other hand, authorised companies operating in the Sahara to revalue their assets even if they had been already amortised.

The increased autonomy of the oil companies stemming from the revision of the Saharan oil code meant that the Algerian State's supervision of the oil industry (as implied by the Evian Accords) looked more nominal than actual. In the same context, the Evian Accords developed a discrepancy between Algerian independence and French involvement in the oil industry.

The Accords set up a body called the "Organisme Saharien" wherein French and Algerian interests were equally represented. The Organisme's role was to supervise the development of hydrocarbons and protect the rights of the oil companies as defined by the revised Saharan code (paragraph 9 of the declarations).

Since the Organisme's directorate was shared equally between the two countries, any decision taken by the Algerian authorities had to have the approval of their French counterpart. Furthermore the Evian Accords imposed preferential treatment for French interests in general and French oil companies' interests⁷ in particular:

1. Oil and gas sold to France had to be paid in French Francs
2. For six years (after independence), preference would, subject to tender, be granted to French companies over concession of mining rights
3. Finally, the Evian Accords took away the arbitrational authority of the French Council of State but transferred it to an international arbitration tribunal rather than to the Algerian Supreme Court.

In 1962 and despite Algeria's independence, the oil industry was more connected with the French economy than the Algerian one. While the oil companies kept control over the whole production process and the price level at which they transferred Algerian oil to Metropolitan France, the Algerian State was reduced to a completely passive role in the oil industry.

The confrontation over the appropriation of a larger share of the oil rent had, nevertheless, to be postponed insofar as the Algerian state lacked both the financial and human resources to take over the oil industry. The creation of a state oil company (Sonatrach) in December 1963, and the building of a third pipeline (with the help of a British firm, C.J.B.)⁸ against the provisions of the Saharan oil code⁹, constituted a first step towards a greater involvement of the Algerian State in the oil business. From the Algerian viewpoint, transport of crude oil constituted the weakest link in the hydrocarbon chain and represented a technologically masterable "springboard" for expansion towards other phases of the oil chain.

The calling into question of the Saharan oil code by the Algerian government was again confirmed by the decision of 16th July 1964. The latter stated that companies holding concession titles had to keep at least 50% of their Algerian turnover in Algeria, while foreign service companies could transfer abroad (if

authorised) at most 35% of their turnover.

Having been confined to the role of a tax collector by the Saharan oil code, the Algerian State had no means to set up an oil policy that would realise the objectives drawn up in the official texts. The two decisions mentioned above showed, nevertheless, the Algerian State's commitment towards the appropriation of a larger share of the oil rent and served to speed up negotiations (which lasted eighteen months) with the French State about exploitation of Saharan oil. By July 1965, France and Algeria reached an agreement which set up a new type of relationship between consumer and exporting countries.

2. The 1965 Agreement¹⁰

The 1965 agreement actually constituted an original framework for co-operation between exporting and consumer countries. Its originality basically stemmed from two hitherto unknown clauses¹¹ concerning the oil industry:

1. The agreement was signed by two sovereign states which stated that the former was conceived in order to favour the development of Algeria on the one hand and to ensure France with a continuous flow of oil on the other. A joint body, the "Organisme de Co-operation Industrielle" (O.C.I.), was then set up in order to carry out surveys and implement industrial projects
2. The second clause created a co-operative association (ASCOOP) in which Sonatrach would be fully operational in association with SOPEFAL (controlled by the French firm ERAP). ASCOOP's purpose was to organise exploration and production of oil over an exclusive area (180,000 km²) which included the most promising sites

Within this framework Sonatrach would emerge as an active participant in the oil industry whereas Middle-East countries were still struggling as tax collectors. The active role that Sonatrach was to play could then be backed by two institutes that would respond to Sonatrach's demand for a qualified labour force:

1. The Institut National des Hydrocarbures et de la Chimie (I.N.H.C.) was created in 1964 with the help of the Soviet Union
2. The Institut Algerian du Pétrole (I.A.P.) was part of the 1965 agreement package

Both institutes were to produce engineers and technicians for the different phases of the oil industry.

The tax system, on the other hand, was partially revised in order to meet some Algerian demands. Hence the reference price was no longer set up unilaterally by the oil companies but involved the French and Algerian governments. Taxes would be calculated upon a weighted average of three different reference prices which differed from the posted prices set up by the oil companies.

Table IV-1. Posted and Reference prices in 1965

| | Posted Prices | Reference Prices |
|------------|---------------|------------------|
| Arzew | 2.365 | 2.095 |
| Bejaïa | 2.35 | 2.08 |
| La Skhirra | 2.30 | 2.04 |

Source: Mazri H. *Les hydrocarbures dans l'économie Algérienne*, SNED, Alger 1975 p. 80 and 81

While reference prices were lower than corresponding posted prices, the tax rate on French firms' profit was to increase to 53% for 1965-67, 54% in 1968 and 55% in 1969. Non-French companies were, however, to pay their taxes on the basis of the higher posted prices. The fiscal privileges accorded to the French companies may be related to the credit facilities offered to the Algerian party through the O.C.I.¹² On the other hand the abolition of the depletion allowance and the adoption (by the French oil companies) of a linear depreciation system allowed the Algerian government to appropriate more revenues. In the same context the 1965 agreement recognised the validity of the 16th July 1964 decision (concerning capital transfer). This agreement, then, constituted a new framework for oil exploitation in the Sahara.

On the one hand the French government safeguarded a continuous flow of oil, relatively underpriced and still payable in French Francs. The Algerian State, on the other hand, increased its earnings from oil taxation (see Appendix IV.1) and entered, via Sonatrach, into the oil industry scene. It increased its participation to 50% in SN Repal, which was integrated in ASCOOP, controlled 11.8% of crude oil production and owned 10% of the Algiers refinery.¹³ Although the 1965 agreements emphasised the privileged Algerian-French relationship in the exploitation of Saharan oil and left the non-French oil companies with an uncertain future, Sonatrach set up service companies in association with non-French firms (mostly American) which provided the technology but accepted Sonatrach majority control (see Appendix IV.2). The control of upstream activities and the mastering of the technology involved, then, constituted another step taken by Sonatrach in order to comprehend the oil exploitation process. The abandonment of the rule of parity in the mixed companies' management may,

nevertheless, suggest that the undermining of the spirit of the 1965 agreement on Sonatrach's part was under way.

This undermining, however, avoided a direct confrontation with French interests but concentrated on improving Sonatrach's position with (or against) non-French partners. The latter were gradually nationalised and increased Sonatrach's assets in the oil industry (see Appendix IV.3).

The move against non-French interests, however, took place at the same time as the erection of a totally new type of association between Sonatrach and a foreign partner. In October 1968, Sonatrach and Getty Oil (USA) signed a contract which stated that Sonatrach would control the association (51% share) and be the operating partner.¹⁴ Getty Oil, on the other hand, agreed to invest 7,000 dinars/km² over a five year¹⁵ period and keep 75% of its turnover in Algeria.¹⁶ Finally Getty Oil was to pay a tax of 55% of net profit (royalty being a cost to the producer) based on a reference price of \$2.28/b.¹⁷

The Sonatrach-Getty association actually constituted a breakthrough into the general pattern of association between exporting countries and foreign firms. Moreover it put into question the content of the 1965 agreement which constituted (from the Algerian point of view) a compromise that had to be renegotiated (article 27 and 52 of the agreement) in the light of events taking place in Algeria and within the world oil market.

Events that had taken place in Algeria can be visualised through Sonatrach's development from a marketing company (decree of December 1963) to a thoroughly integrated oil firm. By 1969, through purchase and nationalisation, Sonatrach was to control:

- 56% of the research permits¹⁸
- 25% of total crude oil production
- 52% of the transport sector (pipelines)
- 56% of the refining sector
- 100% of the domestic distribution network
- 20.5% of crude oil export¹⁹

Sonatrach's involvement in the oil industry at Anglo-American expense was furthermore matched by an "on the job" training of previously unskilled workers under Soviet experts' direction. By 1969, the Sonatrach labour force amounted to 8860 individuals of whom more than 20% were qualified engineers or managers.²⁰

Sonatrach's dependence on French firms expertise *vis-à-vis* the exploitation of Saharan oil was no longer absolute. On the contrary the use of rivalries among oil firms (in particular between French and American ones) resulted in the emergence of Sonatrach as an autonomous company which could confront the still dominant French oil companies over the appropriation of the oil rent (see Appendix IV.4)

At the international level, market conditions were to reinforce Sonatrach's claim towards a renegotiation of the 1965 oil agreement.

Due to peculiar events²¹ within the international scene the price of crude oil (in particular the Mediterranean one) started increasing after 1967 (having been stable since 1962). The closure of the Suez Canal (June 1967) favoured all Mediterranean exporters (Libya, Iraq, and Saudi Arabia) except Algeria. Whereas

the former increased the price of their crude by 7 cents (freight differential or Suez premium) Algeria was still bound by the 1965 agreement. The closure of the Tapline, on the other hand, which carried 17% of Saudi Arabia's output to the Syrian port of Sidon in 1969 represented a loss of 25 million tons per year. This closure brought about an increase of 20 cents per barrel for Iraqi crude exported from the Syrian port of Baniyas and the Lebanese port of Tripoli. Finally in September 1969, the Sanoussi Monarchy in Libya was overthrown by a military junta who nationalised the marketing companies a year later (1970), imposed a rate of taxation of 54% (instead of 50%) and raised the posted price of oil by 30 cents.²²

The evolution in the Libyan scene could hardly be overlooked by Algerian policy-makers since the Libyan oil (in terms of quality and proximity to the European market) was very similar to the Algerian one. Sonatrach's relative autonomy and the increase of crude oil prices in the world market constituted an objective reason and an appropriate evolution for the Algerian State to require the renegotiation of the 1965 oil agreement with its French counterpart.

To strengthen its bargaining position Algeria finally joined OPEC in July 1969. The terms of the 1965 oil agreement and the French-Algerian privileged relations could no longer continue. The first contradicted the OPEC system (in particular the taxation system) whereas the second did not prove worthwhile to Algeria's development (see section below). The struggle between Algeria and France over the appropriation of the oil rent became effective by the year 1969.

3. The 1971 nationalisation as the domestic control of the oil rent

In January 1969 the Algerian government notified the oil companies about the provisional character of the reference prices which had to be renegotiated in

accordance with article 27 of the 1965 agreement. Formal negotiations however started at a later date (24 November 1969) but were suspended in June 1970. The Algerian demands during the negotiations can be summarised in four points.²³

1. Posted prices should be increased to their 1962 level, i.e.
 - 2.665 \$/b FOB Arzew
 - 2.650 \$/b FOB Bejaia
 - 2.610 \$/b FOB La Skhirra
2. Taxable profit should be calculated on the basis of the posted price and 55% of net profit should be appropriated by the Algerian state
3. Royalty must be considered as cost to the producer (as in the OPEC system)
4. The above demands should be applied retroactively from January 1969

Not only did the French party not accept an upward revision of the reference price but argued that the latter should be cut by 4 cents/barrel. Later, in January 1970, the French proposed a scheme whereby the reference price would be set at \$2.16 /b for 1969 and gradually increase to \$2.31 /b by 1975.²⁴

In view of the market conditions in general and the pricing of Mediterranean oil in particular, the French offer was rejected by the Algerian authorities, for it implied that the 1975 price of Algerian crude would (in monetary terms) be inferior to its 1960 price (\$2.65 /b).

From the Algerian State's viewpoint the renegotiation of the 1965 oil agreement was to result in an increase in its share of the oil rent. This increase would, furthermore, not only update the taxation structure along with the OPEC system but would bring about an end to the privileged Algerian-French relationship. The

latter through ASCOOP, did not seem to bear the anticipated success in the relationship between an exporting country and a consuming one (at least from the exporting country's viewpoint).

In actual fact ASCOOP did not seem to have responded to the Algerian party's expectations. Over a five year period (1966-1970) ASCOOP had produced less than 10 million tons of oil from a discovered proved reserve of 50 million tons.²⁵ SOPEFAL (the French partner in ASCOOP), on the other hand, had spent an average of 675 Francs/km² over that period,²⁶ These expenditures however represented only one tenth of what "Getty Oil" agreed to invest within its own perimeter.

In this context the Algerian party was to consider that its French partner was not investing enough in the exploration stage but was relying on the already discovered oil (inside and outside ASCOOP perimeter) to respond to the French oil policy of diversification of oil sources. The French companies seemed, then, to have responded to the French Fifth Plan (1966-1970) which envisaged a levelling off of oil imports from Algeria to one third of total imports.²⁷

Hence, whereas the Algerian State's interests lay in a thorough development of the oil industry to back its "development plans", its French partner's goal was to spread its influence over other exporting countries. In this context ERAP expansion had likely been based on Algerian oil exploitation since the latter represented 80% of ERAP total output²⁸ in 1969.

According to Madelin,²⁹ for the period 1966-1970, ERAP profits transferred abroad had been estimated at 750 million Francs while exploration expenditure

outside Algeria amounted to 350 million Francs. ERAP expansion outside Algeria objectively represented a loss of earnings for the Algerian economy in general (lack of linkages) and for the oil industry in particular (stagnation of the output level).

On a comparative basis, the loss of earnings suffered by the Algerian State stemmed not only from the foreign firms' involvement in the oil industry, but from the privileged status accorded to French firms under the 1965 agreement. Thus, whereas the Algerian State's receipts stagnated at 73.5 cents/barrel, other oil exporting states had experienced a substantial increase in their income since 1964.

Table IV-2. Payment per barrel (selected countries) cents/barrel

| Year | Kuwait | S. Arabia | Iraq | Libya | Venezuela |
|------|--------|-----------|------|-------|-----------|
| 1964 | 76.9 | 82.0 | 80.1 | 62.9 | 95.4 |
| 1966 | 78.4 | 83.4 | 81.3 | 87.0 | 95.8 |
| 1968 | 80.5 | 87.8 | 90.7 | 100.7 | 101.4 |
| 1970 | 82.9 | 88.3 | 94.2 | 109.0 | 109.2 |

Source: Petroleum Press Service Vol. 38 (1971) p. 327

The magnitude of the reference price agreed upon in the 1965 oil agreement (\$2.08 /b.) and the position of the royalty as tax deductible, should have (from the Algerian viewpoint) been compensated for by a French involvement in developing the oil industry in general and oil resources in particular. If the latter stagnated because of strategic reasons (cf. French Fifth Plan) the former could not emerge since Sonatrach was requiring a majority control.³⁰ The clauses of the 1965 agreement, then, contributed to a loss of earnings of about 36 cents/barrel (see

Table IV.3 below).

For the period 1965-1968, the loss of earnings (for the Algerian State) stemming from the non-application of the OPEC formula amounted to about 400 million dollars. The recovering of this loss, however, could not result from the fulfilment of Algerian demands which were not accepted by the French party.

Table IV-3. Alternative Earnings of the Algerian State (\$/b)

| 1965 Agreement Formula | | OPEC Formula | |
|------------------------|-------|-------------------------|--------|
| Reference price | 2.08 | Posted price* | 2.65 |
| | | Royalty ** | 0.2875 |
| Cost | 0.75 | Cost + Royalty | 1.0375 |
| Taxable profit | 1.33 | Taxable profit | 1.6125 |
| | | Tax | 0.8062 |
| Earnings of Algeria | 0.735 | Earnings of Algeria *** | 1.0937 |

Source: Mazri H. *op.cit.* p.86

* When Middle-East prices stabilised in 1961 Algeria's oil was posted at \$2.65/b

** Royalty = 12.5% of \$2.30 (price of oil at the field)

*** Earnings of Algeria = Royalty + tax

Hence on the 20th July 1970, the Algerian Energy Minister unilaterally decided to increase the reference price of Algerian oil from 2.08 dollars to 2.85.³¹ The figure \$2.85/b, chosen as the new reference price, actually corresponded to a posted price of \$2.65/b in the OPEC system and was directly related to the price of the Libyan crude (\$2.53/b). While rejecting the Algerian decision, the French government proposed the opening of overall talks between the two governments. The talks started on 5th October 1970 and were to concern not only the oil problem

but Algerian emigration to France, the marketing of Algerian wine and French co-operation in the Algerian educational system.

These negotiations, which were supposed to update the 1965 agreement, could not however produce any compromise, and on 24th February 1971 the Algerian government announced³² that Algiers was taking a majority control (51%) in all oil firms operating in the country (see Appendix IV.3). Sonatrach, as the state operator, was designated as the new majority shareholder. In the same announcement the Algerian authorities proclaimed the complete nationalisation of natural gas fields and of all natural gas pipelines within national boundaries. On the other hand the Algerian government promised an appropriate indemnification to the oil companies concerned (see Appendix IV.5). The 1971 nationalisation then, put an end to the privileged French-Algerian relationship. Hence, while Algeria supplied France with around 30% of its oil import between 1965 and 1970, by 1975 the figure dropped to 5.5%³³.

By recovering control over its oil and gas resources, the Algerian policy-makers could appropriate more of the rent attached to oil exploitation. Hence they had the means to finance and implement the growth process decided upon in 1967 (first year of the planned period). The rent appropriation, however, had to be derived not through a bilateral struggle (French versus Algerian interests) but within the world market for oil where conflicting interests emerge as the continuous struggle over the appropriation of the oil rent by three main actors i.e. the oil exporting States, the transnational oil firms and the States of the consuming countries.

NOTES

1. Mahiout, R. (1974) *Le Pétrole Algérien*, ENAP, Alger, p.110.
2. Mazri, H. (1975) *Les Hydrocarbures dans l'Economie Algérienne*, SNED, Alger, p.44.
3. *Journal Officiel de la République Française (JORF)*, 23 November 1958, Ordonnance 58111.
4. Organisme Saharien (ed) (1963) *Le Code Pétrolier Saharien*, Alger.
5. *JORF* (20 Mars 1962), Déclarations gouvernementales du 19 Mars 1962 relatives à l'Algérie, para. 10.
6. Chevalier, J.M. (1975) *The New Oil Stakes*, Penguin Books, London, p.73
7. Paragraphe 8 of the Déclarations (see note 5).
8. Mekkideche, M. (1983) *Le Secteur des Hydrocarbures*, OPU, Alger, p.80.
9. The code's provisions stated that producing companies were the sole responsible parties for carrying oil to the coast.
10. Ministère de l'Industrie et de l'Energie (ed.), 1965 *Accord Algero-Français du 29 Juillet 1965*.
11. Madelin, H. (1973) *Pétrole et Politique en Méditerranée Occidentale*, Armand Colin, Paris, p.148.
12. Chevalier, J.M. *op. cit.*, p.76.
13. Himberg, H.A. (1984) *Confronting Dependency, French-Algerian Relations in the Post-Colonial World*, University Microfilm International, Michigan, USA, p.37.
14. Mekkideche, M. *op.cit.*, p.6.
15. Himberg, H.A. *op.cit.*, p.159.
16. Mazri, H. *op.cit.*, p.94.

17. Chevalier, J.M. *op.cit.*, p.81.
18. Madelin, H. *op.cit.*, p.175.
19. Himberg, H.A. *op.cit.*, p.160.
20. Himberg, H.A. *op.cit.*, p.158.
21. Chevalier, J.M. *op.cit.*, p.37.
22. Chevalier, J.M. *op.cit.*, p.38.
23. Rifai, T. (1974) *Le Prix du Pétrole, Economie du Marché ou Stratégie de Puissance*, Ed. Technip, Paris.
24. Mahiout, R. *op.cit.*, p.135.
25. Mahiout, R. *op.cit.*, p.131; Himberg, H.A. *op.cit.*, p.155.
26. Madelin, H. *op.cit.*, p.181.
27. Chevalier, J.M. *op.cit.*, p.83.
28. Chevalier, J.M. *op.cit.*, p.166 (Note 66).
29. Madelin, H. *op.cit.*, p.182.
30. SNPA refused to build a petrochemical unit because Sonatrach was asking for a majority control.
31. Chevalier, J.M. *op.cit.*, p.79.
32. Mahiout, R. *op.cit.*, p.143.
33. Himberg, H.A. *op.cit.*, p.123.

CHAPTER V

OPEC STRUGGLE AND THE LOCALISATION OF THE OIL RENT

The 1970s, during which the Algerian growth strategy was fully implemented, witnessed a dramatic increase in the posted price of crude oil.

This apparently unilateral decision of OPEC constituted a turning point in the sharing of the oil rent between the actors concerned in the oil scene. The fourfold increase (from \$2.898 to \$11.651/b) of the posted price of the marker crude as of January 1974 may be understood (as a first approximation) as a deliberate action by OPEC to appropriate a rent which already existed in the price structure of the refined products sold to final consumers (see Part A, Ch. I, Section 3).

The history of OPEC oil may then be grasped as the history of the struggle over the appropriation of the oil rent. The existence of the latter stems from the fact that oil is no ordinary commodity. As a source of energy and in view of the prevailing technology, it has the ability to "unlock frozen labour (machines) at the least cost".

Under these circumstances, the market price of oil depends, not on conditions of supply and demand within the crude oil market, but on conditions reflecting the state of the energy sphere as a whole, and on the relationship of power (*rapport de force*) prevailing among the three main actors on the oil scene, i.e. the oil exporting states, the transnational oil companies and the states of the importing countries

1. The oil industry before the 1970s

To the extent that discovery of oil in the Middle East happened while the region was under colonial rule, the world oil market took shape without any active participation from the oil exporting states. Hence the use of the Sherman Act to dismantle Rockefeller's Standard Oil Company in 1911, and to split it up into thirty-three independent companies, constituted an internal US affair and did not prevent the reconstitution of the oil cartel on a world scale and its domination over Middle East oilfields.

In actual fact, up to the 1950s, seven oil companies (the seven sisters) controlled 98.3% of the oil production supplying the world market² (excluding the Eastern block and the USA). The emergence of the cartel took place through joint venture and tacit collusion whereby the seven sisters were to control the flow of oil (and its price) to major consumer areas. The control of oil on a world scale, then, emerged as the control of Middle East oilfields and the division among the cartel's members of the marketing network for refined products.

a The control of Middle East oilfields and the marketing network

Advocating the "open door policy",² American companies were able to enter into a scene (July 1928) hitherto dominated by British interests. The Iraq Petroleum Company (IPC), formerly shared between BP and Royal Dutch Shell, became a multinational company jointly owned³ by

| | |
|-----------------|--------|
| Exxon and Mobil | 23.75% |
| Shell | 23.75% |
| CFP | 23.75% |
| Gulbenkian | 5% |

After entering IPC, the American companies, however, lost interest in the so-called open door policy which was actually transformed into its opposite. Provisions⁴ were set up in order to ensure that no independent company could receive concessions from the Iraqi Government and no single company from the consortium develop a concession on its own.

Domination of Saudi Arabian oilfields followed the same pattern. Although Socal discovered oil in Bahrain and Saudi Arabia and could have competed, in association with Texaco against Exxon and Mobil, by providing crude oil to independent companies, it was finally forced into entering a joint venture with Exxon and Mobil (1946).⁵ Aramco was then shared among Socal (30%) Exxon (30%), Texaco (30%) and Mobil (10%).

While Saudi Arabia's oilfields came under the cartel domination, Kuwait, which was outside the "red line area", was divided on a fifty-fifty basis (1934) between Gulf and BP which entered into contract to supply crude oil to the rest of the majors (Shell, Exxon, Mobil).

Finally, in 1933, Iran came under the complete domination of BP⁶ which entered into negotiation with crude-short majors (Exxon and Mobil) in order to find outlets for the Iranian source of supply. A set of rules⁷ concerning the marketing of oil was laid down in order to maintain the stability of the world market for oil. After the overthrow of Mossadeq (1952), the Anglo-Iranian Oil Company faced a new shares distribution. While BP kept 40%, Shell received 7%, the five other sisters received 7% each, CFP 6% and American "independents" (Organised as Tricon) received 5%.

The Middle East oilfields were then completely controlled by the oil cartel through joint ventures. Oil supply from the Middle East could then be regulated in order to balance supply and demand on a world scale.

Control over Middle East oil by the cartel was paralleled by an agreement⁸ (the Achnacarry Agreement of 1928) which specified each company's share within the marketing scene ("as is" principle). The principles agreed upon in the Achnacarry meeting amounted to six:⁹

1. Accepting and maintaining as their share of markets the status quo of each member
2. Making existing facilities available to competitors on a favourable basis but not at less than actual cost to the owner
3. Adding new facilities only as actually needed to supply increased requirements of consumers
4. Maintaining for each producing area the financial advantage of its geographical location
5. Drawing supplies from the nearest producing area
6. Preventing any surplus production in a given geographical area from upsetting the price structure in any other area

Through this collusion the oil cartel was able to predetermine the overall growth of oil supply coming from the OPEC countries.

From 1950 to 1972, oil supply from these countries grew at an annual rate of 9.55%.¹⁰ Output from different countries, however, showed a steady rate of increase (Saudi Arabia, Iran), slower rate of increase (Venezuela, Kuwait and Iraq), precipitous rises in some other areas (Libya up to 1970) and occasional decline (Iran 1950-54, Iraq 1957, 1967, 1972, Nigeria 1968).

The cartel strategy therefore considered OPEC members as an oilfield which was to be exploited, not in accordance with the different countries' needs but in relation to the consuming countries' demand. On the other hand the cartel developed a price matching policy which avoided any price war among the companies concerned.

b The prices policy of the cartel

(1) Up to 1944, the Achnacarry Agreement provided a unique price of crude oil within each market. Oil became a homogeneous commodity, the price of which bore no relation to its production cost. Thus the price of oil (whatever its origin) in any market would be determined as the sum of the posted price of Texas crude oil and the transport cost to the market concerned (the system was known as the Gulf plus system). A phantom freight was then included in the Middle East oil price paid by European consumers.

In fact, the Middle East oil price had no market price at all, since the major oil companies were completely integrated and transactions outside their integrated framework were very rare.¹¹

Since Middle East production costs were relatively lower than US costs,¹² the cartel was able to appropriate a surplus profit through its control over Middle East oil. The adopted price policy responded to the interests of both the cartel and the US economy.

By considering the US Gulf as the reference point, the cartel could keep on exploiting its domestic (US) resources which would compete with low-cost Middle East oil on the one hand, and on the other, improve the US security as a

world power.¹³ A high price of oil would then allow investment in exploration (to increase proven reserves) and the survival of marginal producers (to fill in the energy balance).

The high price of Middle East oil, however, did not benefit the host countries which were politically and economically irrelevant to the functioning of the oil industry. Ground-rent was more of a bribery than an integral part of the oil rent. In fact, up to 1950 no framework existed for the payment of the ground-rent to the host country. It was actually left to the cartel to decide upon the level of the royalty.¹⁴

Thus Article 10 of the W. D'Arcy concession of 1901 stipulated that the Iranian Government would receive £20,000 in cash and £20,000 in shares. Saudi Arabian authorities were to receive bonuses totalling £140,000, of which £100,000 would be paid after discovery of oil. The other Middle East countries shared the same fate (but at less expense to the cartel) as Iran and Saudi Arabia.

(2) It was then left to European countries, and in particular to Britain, to challenge the price structure imposed by the cartel. Although the British Government objected to paying phantom freight for fuel purchased by its navy from a Middle East refinery, and asked for its removal, the fact that the British Navy had been mainly supplied by Abadan refinery under British control and that negotiations took place with Aramco, suggests that the British government's initiative (at the end of the war) was actually aimed at preventing American interests from taking over British ones.

While "sterling crude" could easily be developed from Iran and Iraq, where BP was present, "dollar crude" needed (through Aramco in particular) important investments in order to develop oilfields under American influence.¹⁵ Thus, on British initiative, the Gulf plus system was abandoned in favour of a system of two basing points: the Texas Gulf and the Persian Gulf.

By the end of the war, the price of the representative crude (36° API) was set at 1.05 dollars per barrel in both gulfs. Under these conditions, crude oil coming from both gulfs reached the same CIF price near the Italian coast.

The new system was, however, temporary. For after the war, reconstruction of Europe on the one hand, and the deficit in the American oil balance on the other, were to put a heavier burden on Middle East oil production. By 1947, Texas crude was posted at \$2.75/b while Middle East crude was quoted at \$2.22/b. The difference in posted prices pushed the neutral point westward to Southampton (Great Britain).

Finally, as the US oil deficit kept on increasing, the opening up of the US market to Middle East oil required a further drop in the latter's price. Thus in July 1949 the price of Arabian light was set at \$1.75/b.

The new price structure whereby crudes from three different regions (Venezuela, Persian Gulf and US Gulf) reached the same CIF price at New York was to last for a decade (see Appendix V -1).

The relative decline in the price of Middle East crude decided by the cartel may, however, be explained not in terms of an unlikely competitive market,¹⁶

but as an outcome, or more precisely as a compromise, between the search for a maximum surplus profit by the cartel and the long term interests of the American economy in its emergence as a world power.

In the supply of Europe, the Economic Co-operation Administration (ECA)¹⁷ played a leading role. This amounted to saving as many dollars as possible out of the dollar bill paid by European importing countries with US taxpayers' money. Pressures had (directly or indirectly)¹⁸ been put on the cartel to lower its Middle East price.

On the other hand, the latter could not fall beyond the limit which would put the US domestic oil industry into jeopardy. The equalisation at New York of CIF prices of crudes of all origins constituted the ultimate reference for the setting up of various posted prices. Under these conditions the oil companies could increase their surplus profit by supplying a market which was expanding at a rate of 10% annually.¹⁹ European countries could import crude oil at a relatively cheaper price than the USA. Finally, the latter could import Middle East oil to fill in their deficit without damaging their domestic industry.

This price structure was made possible because of two hitherto basic features of the oil industry:

1. The existence of the oil cartel which could regulate the oil market and determine the oil price
2. The convergence of interests between the oil cartel and the US authorities

The emergence of nationalistic feelings in Europe and the oil exporting countries could, however, constitute a challenge to the supremacy of American interests in the world market.

c The erosion of the cartel domination

The 1950s actually witnessed the gradual decline of the cartel domination over the oil market through the appearance of newcomers (state-owned and independent companies). The latter took advantage of the existence of a rent in the price of oil to offer more favourable terms to the host countries.

In France, as early as 1944, the "Institut Français du Pétrole" (IFP) was created. Its aim was to produce oil specialists for all stages of the industry. Then, in 1945, an institution called the "Bureau de Recherche Pétrolière (BRP)" was set up in order to supervise oil activities in France and its colonies. By 1976, finally, oil had been discovered in the Algerian Sahara, which was withdrawn from the cartel influence through a set of legislative measures (see Part B, Ch. IV).

The Italian authorities followed the example of the French and set up a national company, ENI, in 1953. Its first task was to stop Exxon and Gulf from exploiting natural gas discovered in the Po valley. Then, from 1955 onward, ENI became an international company holding concessions in Egypt (1955), Iran (1957) and North Africa (1958). Furthermore, ENI innovated in the sharing of its profit with the host country by replacing the prevailing 50-50 profit sharing rule by a 75-50 in favour of the host country.²⁰ Finally, to circumvent the cartel domination over oil supply, ENI started importing crude oil from the USSR which was accused of dumping its oil at low prices.²¹

Japan faced the same problems as other European countries. To avoid the cartel network, the Arabian Oil Company was set up and received an offshore

concession in the neutral zone under the joint sovereignty of Saudi Arabia and Kuwait. The Japanese party went further than ENI in destroying the traditional profit sharing rule. While offered 57% of the profit attributed to crude oil production, the host governments received the right to buy shares in the company thereby sharing profits coming from downstream activities situated in Japan.²²

Finally, the cartel domination was put at risk by independent US companies looking for cheaper oil outside the USA. The American independents resorted to an aggressive policy after World War II and spread all over potential oilfields. By the end of the 1950s they were present in the Middle East, North Africa and Latin America.²³ The market share of the cartel gradually decreased in favour of non-integrated oil supplied by independent companies.

Table V.1: Percentage market shares of international oil companies in the world market

| | 1950 | 1957 | 1969 | 1972 |
|--|------|------|------|------|
| Largest four (Exxon, Texaco, Gulf, Socal) | 82.6 | 69.5 | 55.8 | 46.7 |
| Largest seven (largest four, Mobil, Shell, BP) | 98.3 | 89.0 | 76.1 | 7.0 |
| All others | 1.7 | 11.0 | 23.9 | 3.0 |

Source: Adelman, M.A. (1972) *The World Petroleum Market*, Johns Hopkins University Press, London, pp. 80-81; Sampson, A. (1975) *The Seven Sisters*, Hodder and Stoughton, London, p. 202.

The Eastern block, on the other hand, kept on increasing its exports to the world market from 1950. Hence, from 10,000 b/d (0.003% of oil internationally traded) in 1950, Eastern block exports reached 36,000 b/d (0.005% of oil

internationally traded) in 1957, and 510,000 b/d (3.12% of oil internationally traded) in 1966.²⁴

Finally, crude oil marketed outside the cartel's integrated framework kept on rising throughout the 1950s. While arm's length crude amounted to 231,000 b/d (6.9% of oil internationally traded) it reached 1.24 mb/d (17.7% of oil internationally traded in 1957).²⁵

The changing structure of the oil market implied the spread of competitive pressures, outside the cartel influence, by independent companies seeking a share in the world oil market. It brought about, on the other hand, the emergence of non-collusive pricing among cartel members in order that each member might sell its surplus oil in the third party market.

In fact, by the mid-1950s, the real price of Middle East oil (arm's length price) started diverging from its posted price. The former fell from \$1.93/b in 1956 to \$1.60/b in 1959 whereas the latter went down from \$1.93/b in 1956 to \$1.90/b in 1959.²⁶ The fall in the real price of oil was neither in the interest of the US economy nor in the cartel's interest. The former was operating relatively inefficient wells and the latter was facing a drop in the rate of surplus profit.

To avoid the collapse of their domestic oil industry, the US authorities then imposed a "mandatory programme" for oil imports on 11 March 1959.²⁷ The US decision, however, meant more downward pressures on the Middle East oil price.

The closing of the US market to Middle East oil implied that the price structure that hitherto equalised all CIF prices in New York could be altered without damage to the US economy (in particular its domestic oil producers). On the other hand, the cartel could reduce the effect of the fall in real price only inasmuch as it reduced the posted price upon which taxes were levied by host countries.

From 1958 onward, all Middle East posted prices started falling and with them the amount of tax paid to host countries by the oil companies. The fall in their revenues triggered the first collective reaction from a set of oil-providing states: OPEC was born in September 1960 in order to stop the decline of the posted price of oil.

2. The emergence of OPEC in the oil industry

On Venezuela's initiative, five oil exporting countries²⁸ gathered in Baghdad in September 1960. This gathering was concluded by the creation of the Organisation of Petroleum Exporting Countries, whose basic aims could be summarised as follows:

1. To stop any further decline of the posted price of oil
2. To appropriate a larger amount of ground-rent through an appropriate taxation policy

However motivated they were, OPEC members confronted a decade (the 1960s) mostly characterised by a trend of falling oil prices. This situation stemmed from two basic factors:

1. A state of excess productive capacity of about 5 mb/d that could be used in case of supply shortages from any area²⁹

2. An increasing quantity of oil offered on the market by an ever-increasing number of oil companies and oil exporting states which could increase their revenues through more exports

The relative excess supply of the 1960s actually forced OPEC to accept a freeze in the posted price of oil (see Appendix V-2) and concentrate mainly on the erection of a new taxation system more favourable to the exporting states.

After three years of negotiation, a new tax system (the OPEC system) came into being and was gradually applied in all oil exporting countries. The main features of the OPEC system amounted to using posted prices as the tax base and considering the royalty as a cost to the producing companies instead of being tax deductible.

The OPEC system did not, however, reduce the oil companies' profit (the American ones in particular) to the extent that the "Golden Gimmick" assured them of a credit against their US tax liabilities.³⁰ The growing demand from oil consuming countries, on the other hand, gave the cartel the opportunity to offset a declining profit rate by bringing more oil onto the market.

Table V.2: Major oil companies' profits

| Year | Net earnings (\$10 ⁶) | production 10 ³ b/d | Net profit/b |
|------|-----------------------------------|--------------------------------|--------------|
| 1963 | 3,335 | 14,393 | 0.635 \$/b |
| 1968 | 4,781 | 21,375 | 0.613 |
| 1969 | 4,116 | 23,055 | 0.49 |

Source: *Petroleum Press Service (PPS)*, Vol. 37, 1970, p.164.

Levying their taxes on stable posted prices, the oil exporting states were (contrary to the oil companies) assured of a steady income despite the decline in the real price of oil (see Table IV.2, Part B, Ch. IV). The fall in the real price of oil imported by consuming countries (OECD mainly) did not, however, trigger a decline in the prices of refined products sold to European consumers. On the contrary, European tax authorities increased the amount of taxes levied on oil products. From 6,181 million dollars (57% of the oil rent) in 1960, the OECD states (excluding the USA and Canada) levied 23,342 million dollars (61% of the oil rent) in 1970.³¹

By the end of the 1960s, therefore, and despite the emergence of OPEC as a new actor on the oil scene, the oil industry structure was still dominated by the oil cartel (see Table V.1 above). Most of the oil rent, on the other hand, was still held by the oil consuming tax authorities. Although the oil exporting states kept on behaving as tax collectors, the premisses for future changes in the oil industry structure started appearing during the 1960s:

- OPEC as an organisation imposed itself by avoiding further drops in the posted price of oil. Thus while the real price was falling on a world scale, OPEC's income did not follow the same pattern. The cartel could no longer behave as if the oil exporting authorities were non-existent
- OPEC succeeded in setting up national companies,³² the long term aim of which was to gradually take control of national resources
- Finally, the energy situation in the USA started deteriorating by the end of the 1960s:

- Unused production capacity which had been maintained at a level of 30-35% dropped to 19% in 1969³³ and was expected to disappear by 1971³⁴
- While imports covered 18% of domestic consumption in 1959, by 1969 they covered 22%

The gradual aggravation of the US energy deficit actually meant recourse to more imports, thereby increasing oil demand on a world scale. On the other hand, the slump in oil supply due to the closure of the Tapline, the reduction in Libyan output and the freight crisis,³⁵ triggered upward pressures on the price of Middle East oil. The old equilibrium whereby the oil exporting states obtained a steady income, the cartel a declining profit rate and the consumer countries' tax authorities increasing revenues, could no longer be sustained. The emergence of the USA as a net importer of oil was to require a new price structure of oil on a world scale.

3. The energy crisis of the 1970s

The relatively low price of Middle East oil benefited neither the oil exporting states nor the oil companies but improved the competitiveness of non-USA OECD countries with respect to the US economy. The gradual opening of the latter to Middle East oil, however, was beneficial only in so far as the price of Middle East oil was brought into line with the US domestic price. The strategic goal of the US authorities could only be achieved through a high price of oil on a world scale.

An increase (a tendency of the early 1970s) in the Middle East oil price would benefit not only OPEC members but the oil companies and the US economy

as well. The oil exporting states (OPEC) could levy higher taxes from oil produced by the oil companies. The oil companies, on the other hand, could revalue their assets which were in the process of being nationalised³⁶ and increase their profit rate which dropped from more than 18% in 1957 to 11-12% from the mid 1960s onward.³⁷

Finally, the USA could reach their strategic goal of independence from imported sources of energy by: (1) exploiting the expensive Alaskan oilfield which stayed idle after its discovery in 1968; (2) giving a new lease of life to stripper wells which were to close at a rate of 20,000 a year (from 1973);³⁸ and (3) by increasing the ratio of US reserves to production which dropped to about ten years.³⁸

The convergence of interests among the three main actors on the oil scene, then, opened the way to a price increase that could have happened without the October 1973 Middle East war.

a The first oil shock

The war, however, constituted the apparent cause of the jump in Middle East oil prices.³⁹ Hence by the 22nd December 1973, the Teheran OPEC meeting decided to set the price of the marker crude at \$11.65/b (instead of the pre-war price of \$2.591/b).⁴⁰ The OPEC decision would then constitute a new feature of the Middle East oil industry to the extent that this organisation could set the price of oil unilaterally. Furthermore, this decision imposed the localisation of a larger share of the oil rent in the price of crude oil.

Table V.3: Cost-breakdown of an average barrel of oil sold to French consumers 1973-1974 (\$/b)

| | 1973 | % | 1974 | % |
|---------------------|-------|------|-------|------|
| Costs | 2.42 | 16.0 | 2.8 | 11.7 |
| Producing state tax | 1.7 | 11.2 | 7.7 | 32.2 |
| French tax | 7.67 | 50.6 | 9.18 | 38.4 |
| Company profit | 3.36 | 22.2 | 4.23 | 17.7 |
| Average price | 15.15 | | 23.91 | |

Source: Chevalier, J.M. *op. cit.*, p. 11.

The increase in the amount of ground-rent from \$1.7/b to \$7.7/b actually increased the oil exporting states' share of the oil rent to 32.2%. The rest was still being divided between the oil companies (17.7%) and the consumer countries' tax authorities (38.4%).

Although OPEC could not capture all the oil rent, the 1973-74 oil crisis nevertheless allowed a more favourable distribution of the rent to the oil providing states. Because of the price rise, however, the increase in ground-rent did not happen at the expense of the oil companies' profits which, in absolute terms, rose from \$3.36b to \$4.23/b. In fact, for the oil companies in general⁴¹ and the oil cartel in particular, the years 1973 and 1974, despite OPEC involvement in the oil industry, constituted a turning point in the level of earnings.

Table V.4: Net profits of the major oil companies (\$10b)

| Year | Exxon | Texaco | Mobil | Socal | Gulf | Shell | BP |
|-----------------|-------|--------|-------|-------|-------|-------|------|
| 1972 | 1,532 | 889 | 574 | 547 | 197 | 282 | 71 |
| 1973 | 2,443 | 1,292 | 849 | 844 | 800 | 730 | 329 |
| 1974 | 3,142 | 1,586 | 1,047 | 970 | 1,065 | 1,161 | 487 |
| % incr. (73-74) | 28.6 | 22.8 | 23.3 | 14.9 | 33.1 | 59.0 | 48.0 |

Source: *Petroleum Economist*, Vol. 32, 1975, p. 183.

In view of the increase in the oil cartel earnings, OPEC action cannot be considered as having been opposed to the cartel strategy. On the contrary, OPEC's decision to increase the oil price, while reflecting an ineluctable reorganisation of the oil industry, was to give the cartel the opportunity to generate more income in order to gradually step out of the first stage of the oil industry in the Middle East and to invest in other sectors of the energy sphere.

Finally, the increase of Middle East oil prices allowed the US authorities to forecast the marginality of imported oil and gas in US consumption by 1985.

Table V.5: US 1985 energy forecasts (10⁶ tons of oil equivalent)

| | 1973 forecasts | New 1974 forecasts |
|-------------|----------------|--------------------|
| Coal | 580 | 1600 |
| Hydraulic | 90 | 2130 |
| Nuclear | 400 | 400 |
| Oil | 590 | 3840 |
| Natural gas | 400 | 750 |
| Imports | | |
| Oil | 880 | (120) |
| Gas | 160 | |
| Total | 3,100 | 42,600 |

1. Including synthetic gas and oil.
2. Most of the increase is due to the development of geothermal energy.
3. Including shale oil.
4. The new prices led to a 15% saving compared with the initial forecast. According to this, the US could be a net exporter of energy in 1985.

Source: Document circulated to the Washington conference (February 1974) quoted in Chevalier, J.M. *op. cit.*, p. 59.

The 1973 oil shock then materialised the converging interests of the three main actors on the oil scene. OPEC's action, however progressive (from the 'developing countries' viewpoint), could have happened only in so far as it was in harmony with the oil cartel strategy and the interests of the US whose closest allies (Saudi Arabia and Iran) were acting as leaders for OPEC demands.

b The second oil shock

Despite the developing world-wide recession (mid 1974) and the decline of world demand for oil, the period 1974-1978 did not witness any collapse of the oil price.

Table V.6: Evolution of the marker crude 1973-1978

| Date | Marker crude price |
|----------|--------------------|
| 16.10.73 | 5.119 \$/b |
| 22.12.73 | 11.651 |
| 10.11.74 | 11.251 |
| 24.9.75 | 12.376 |
| 12.7.77 | 12.700 |
| 12.78 | 12.700 |

Source: Sid-Ahmed, A. (1980) *L'OPEP, Passé, Présent et Perspectives*, OPU, Alger, p. 121, and Seymour, I. (1980) *OPEC, Instrument of Change*, Macmillan, London, p. 192.

On the other hand, taxes levied by the oil exporting states were increased from 55% of net profit (Teheran 15.2.71) to 85% (Abu Dhabi 10.11.74). To the extent that the oil cartel was still involved in the Middle East concessions (see Appendix V-3), a high price of oil constituted the only option (for the cartel) to offset the increase in the level of taxation. In view of the decline in world demand, OPEC and the cartel's interests resided in curtailing output. While world demand dropped by 6.05% (from 46,300 mb/d in 1973 to 43,500 mb/d in 1975), OPEC's output declined by 12.9%.⁴² The decline in OPEC's output was, however, uneven among the members. Saudi Arabia (the dominant OPEC producer) and Kuwait cut their output by a much larger proportion (20% and 18.4% respectively).⁴² The cartel strategy had therefore been implemented, thanks to its closest Middle East partners.

The oil cartel monitoring of the world market for oil, then, resulted in a period of relative price stability (up to the end of 1978) which witnessed a gradual recovery in world oil consumption. This balanced pattern was,

however, to be disturbed by two basic factors:

1. The gradual decline in OPEC surplus (current account surplus)
2. The Iranian crisis which apparently created an oil shortage

OPEC's surpluses actually declined from a peak of 62.5 billion dollars in 1974 to around 5 billion in 1978.

Table V.7: OPEC current accounts (1973-1978), \$106

| | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 |
|---------------------------|------|------|------|------|------|------|
| Exports | 42 | 116 | 107 | 132 | 145 | 146 |
| Imports | -21 | -39 | -58 | -69 | -84 | -104 |
| Net service and transport | -14 | -17 | -22 | -28 | -32 | -37 |
| Current surplus | 8 | 59 | 27 | 36 | 29 | 5 |
| Cumulative surplus | | 67 | 94 | 130 | 159 | 164 |

Source: OECD (July 1980) *Economic Outlook*, quoted in Seymour, I. (1980) *OPEC, Instrument of Change*, Macmillan, London, p. 181.

The decline in OPEC surpluses actually stemmed from different reasons; in particular:

1. The increase in imports which soared from 21 billion dollars in 1973 to 104 billion in 1978
2. The stagnation of OPEC exports which amounted to 31.7 mb/d in 1971, reached a peak of 38.4 mb/d in 1973 and dropped to 29.2 mb/d in 1978
3. Finally, the deterioration of the terms of trade, which actually eroded the price jump of 1974

Table V.8: OPEC terms of trade, base 100, 1974

| Year | Price of oil | Price of imports | Terms of trade |
|----------|--------------|------------------|----------------|
| 1970-72 | 19 | 66 | 28 |
| 1973 | 31 | 84 | 37 |
| 1974 | 100 | 100 | 100 |
| 1975 | 98 | 111 | 89 |
| 1976 | 106 | 113 | 94 |
| 1977 | 114 | 124 | 92 |
| 1978 | 117 | 144 | 81 |
| 4th term | 117 | 153 | 77 |

Source: *World Financial Markets*, June 1979, quoted in Sid-Ahmed, A. *op. cit.*, p. 141.

The relative stability of the oil price meant a loss of income for OPEC members whose action in 1973-74 had been gradually offset by deteriorating conditions within the world market.

The Iranian crisis then came at the right time (at least for OPEC) to disturb the pattern of falling revenues for OPEC countries. The decline in Iran's output (from 6 mb/d in September 1978 to 2.4 mb/d in December 1978)⁴³ had, however, been partially offset by higher production in Saudi Arabia and other countries. OPEC output was, nevertheless, around 4.5% lower in December than it was in September.

The signal of a tight market, however, came not from OPEC, which raised the marker crude posted price to \$13.50/b (+5.5%) (see Appendix V-4) but from the spot market where price increases ranged from 40% for light products to 18% for crude oil.⁴³ This tendency had furthermore been accentuated by a

complete withdrawal of Iran from the world market by the end of December.⁴⁴

The Iranian crisis did not actually create a real oil shortage but disturbed the functioning of the third party market⁴⁵ by preventing the oil cartel from honouring its contracts with independent oil companies. In this context BP suffered an estimated loss of 1.4mb/d, Exxon a loss of 0.4mb/d and Socal a loss of 0.3 mb/d.⁴⁶ These losses had then to be dealt with in the spot market where prices soared to as high as \$34.5/b in May 1979.

The first oil exporting states that followed the spot market trend were not, however, OPEC members but the United Kingdom and Norway, which increased their prices by \$1.50b (+11%) and \$1.65/b (+12%) respectively on 15 January 1979.⁴⁶ It was not until March 1979 (Geneva meeting) that OPEC decided on increasing the marker crude price to \$14.55/b. At the same time, however, the spot market was witnessing a price of \$21.50/b (see Appendix V-4).

From the OPEC viewpoint the substantial difference between official prices and spot prices simply meant that a portion of the oil rent that could be appropriated at source (within the price of crude oil) was being lost to the oil companies and intermediaries.

While the OPEC members were actually losing money, the oil cartel in general and the US majors in particular increased their net income by 75% (from 4,546.2 million dollars in 1978 - first three quarters - to 7,941.6 million dollars - first three quarters - in 1979). The increase in their net earnings in their foreign operations, however, reached 89%.⁴⁷

Throughout the years 1979 and 1980, official prices kept on lagging behind spot prices thereby indicating that OPEC was not a price leader but a price follower. It was only by the third quarter of 1980 that official OPEC prices and spot prices started converging. By that time (August 1980) the marker crude price had increased to \$28/b while the spot market was witnessing a price of \$32/b.

A drift was, however, separating Saudi Arabia from the rest of OPEC members which were using a slightly higher marker crude (see Appendix V-4). A price unification was, however, imposed by Saudi Arabia at the Geneva conference (October 1981) whereby a unique marker crude price (\$34/b) was agreed upon. At that time the marker crude spot price amounted to \$34.26/b.

The relatively high price of oil that stemmed from the peculiar market conditions of the end of the 1970s actually meant that oil exporting states were appropriating a larger portion of the oil rent.

Table V.9: OPEC revenues

| | Net exports (10 ⁶ b/d) | Revenues (10 ⁹ dollars) |
|------|-----------------------------------|------------------------------------|
| 1974 | 29.6 | 90.5 |
| 1977 | 29.4 | 123.6 |
| 1978 | 27.9 | 115.8 |
| 1979 | 28.8 | 195.2 |
| 1980 | 24.7 | 278.8 |

Source: 1977: *Petroleum Economist*, 1982, p. 225; other years: *Petroleum Economist*, 1983, p. 215.

The localisation of a large portion of the oil rent in the price of crude oil may, however, have undermined OPEC strategy in that supply of oil on a world scale could gradually shift from OPEC members to non-OPEC oil exporting states. The latter could then exploit high cost oilfields and create an excess supply at the prevailing price. The signs of a slack market and downward pressures on oil prices actually emerged before the price unification of October 1981.

4. The decline of the price of oil

The emergence of excess supply within the world market actually stemmed from the entrance of new oil exporting states which struggled for a market share that could only materialise at OPEC's expense, in view of the falling oil demand on a world scale.

As in the 1979 oil crisis, the signal of an unbalanced market emerged in the spot market where, after having peaked at \$41/b in November 1980, the marker crude price fell by 8 to 10 dollars by mid 1981.⁴⁸ The year 1981, nevertheless, witnessed the maintaining of a high Saudi output (10.5mb/d) instead of its traditional ceiling of 8.5mb/d. Meanwhile other OPEC members had to curtail their own output in order to avoid a fall in the official price.⁴⁹ Finally, non-OPEC producers followed the spot market trend and cut their official prices in order to compete against the relatively low price of Saudi oil.

Table V.10: Early 1981 official price cuts (selected countries)

| Date | Country | % cut |
|------------|---------|-------|
| April 1981 | Ecuador | -11% |
| 15 April | Egypt | -6% |
| 14 May | USA | -5% |
| 1 June | Mexico | -10% |
| 15 June | USSR | -8% |
| " | UK | -11% |
| " | Brunei | -11% |

Source: Roberts, S. (1984) *Who Makes the Oil Price? Analysis of Oil Price Movements 1978-1982*, Oxford Institute for Energy Studies.

The relative excess supply of 1981, however, turned into a substantial glut during the year 1982.⁵⁰ Thus the spot market price of the marker crude reached as low a figure as \$28/b (6 dollars below the official price). Non-OPEC producers, on the other hand, constantly undercut official OPEC prices:

- The UK price cut (early March 1982) of its "Forties" crude put the latter at \$3.5/b below its equivalent Nigerian crude
- Mexico followed the same pattern in pricing its "Isthmus" crude at \$2.5/b below the marker crude
- Finally, the USSR exported its "Export Blend" at \$5/b below the marker crude

The effects of price undercutting by non-OPEC exporters resulted in a gradual decline of OPEC's market share of the world market for oil. In 1982 OPEC was then producing at 59% of its recorded capacity (1976) while non-OPEC oil had been increasing throughout, despite the decline in world demand.

Table V.11: World crude oil output (10³ barrels)

| Year | (1) Non-OPEC* | (2) OPEC | % of OPEC in total (1 + 2) |
|------|---------------|------------|----------------------------|
| 1970 | 5,478,872 | 8,122,975 | 59.7 |
| 1972 | 5,353,900 | 9,895,034 | 64.89 |
| 1974 | 6,012,790 | 11,216,064 | 65.1 |
| 1976 | 5,968,690 | 11,252,108 | 65.34 |
| 1978 | 6,831,960 | 10,906,665 | 61.48 |
| 1980 | 7,593,300 | 9,838,245 | 56.44 |
| 1982 | 7,981,000 | 6,751,708 | 45.8 |

Source: 1970, 1972: *Petroleum Economist*, Vol. 39, p. 10.
Other years: *Petroleum Economist*, 1984, p. 476.

*excluding Eastern block and China.

After having reached a peak of 65.34% of total world output in 1976, OPEC output fell to 45.8% in 1982. The emergence of non-OPEC oil producers (Mexico, the UK and Norway in particular) by the mid 1970s imposed a new market structure which actually increased competition among oil exporting states. This competition, however, could not be monitored by the oil cartel since, after 1976, the latter was no longer involved in Middle East oil concessions (see Appendix V-3). On the contrary, crude oil being (after 1976) a purchased input, the lower its price, the higher the profits that could be appropriated by the oil cartel.

Thus, whereas the early seventies witnessed a convergence of interests between the oil cartel and OPEC with regard to a high price of oil, the structural change that took place by the mid 1970s transformed an objective convergence of interests into its opposite.

The task of regulating oil supply was no longer a necessity for the oil cartel

which, after having been nationalised, should have aimed at as low an oil price as possible. Being in control of downstream activities, the oil cartel in particular and the oil companies in general could locate their profits in the transport and refining stages.

The oil consuming countries' tax authorities, on the other hand, thanks to their monopoly over their respective national markets, could levy higher taxes on petroleum products sold to final consumers. The major portion of the oil rent would then be relocated (as before 1974) within the price of refined products and appropriated by the oil companies and the oil consuming countries' tax authorities.

In view of the relative stagnation of their domestic oil production (around 3.7mb/d) since 1978 and the level of their domestic consumption which started rising again by the second half of 1983,⁵¹ the USA may confront a contradictory situation.⁵² Strategic goals aside, the US economy would, however, benefit from lower oil prices, since the bulk of exploratory investment had already been realised in the most promising US region (Alaska). To avoid the collapse of the domestic oil industry, an oil import fee could be imposed, thereby allowing the US Government to offset its deficit by appropriating a portion of the oil rent.

Finally, as far as OPEC members were concerned, the decline in the price of crude oil, and the shrinkage of their market share, could only translate into a lower share of the oil rent.

Table V.12: OPEC estimated oil exports and revenues

| | Net exports (10 ⁶ bd) | Revenues (\$10 ⁹) | \$/b |
|------|----------------------------------|-------------------------------|------|
| 1981 | 20.8 | 252.9 | 33.3 |
| 1982 | 16.9 | 201.9 | 32.7 |
| 1983 | 15.4 | 160.4 | 28.5 |
| 1984 | 15.4 | 159.4 | 28.3 |

Source: *Petroleum Economist*, July 1985.

Due to competition among oil exporting states, the oil rent could no longer be integrated within the price of crude oil. Since OPEC members are not involved in downstream activities and national markets are under the control of their respective national authorities, the oil rent can only emerge at the final stage of the oil industry (in the prices of refined products sold to final consumers). The state of excess oil supply that has characterised the 1980s and the competition from non-OPEC exporting countries actually stems from the location of a larger portion of the oil rent within the price of crude oil (price jump of 1974 and 1979). This particular localisation of the oil rent was, however, the consequence of:

1. The convergence of interests between the oil cartel, OPEC and the USA
2. The control of a major part of the world market by the oil cartel which could regulate supply

Whereas the 1970s' state of the energy market created the conditions for OPEC to capture a larger portion of the oil rent, the same conditions (high price of oil) no longer exist in the 1980s. In fact the oil jump of the 1970s and the oil cartel loss of control over the oil market created the conditions for the decline in the price of oil through the emergence of new oil producers. The seller's

market of the 1970s therefore turned into a buyer's market in the 1980s.

In these conditions, OPEC members who basically rely on oil exports to balance their current accounts, are now facing a competitive market for crude oil. Competition among oil exporting states in general, and among OPEC members in particular, then becomes the only feasible path to avoid the collapse of individual economies (some of them heavily indebted). Competition, on the other hand, requires a shrinkage of the oil exporting states' share of the oil rent and a loss of financial earnings to back the drive towards industrialisation.

While the 1970s witnessed implementation of industrial projects in the OPEC countries and the signs of diversification in non-efficient economic activities (thanks to the control over a larger portion of the oil rent), the 1980s may well witness a reverse trend whereby OPEC members might gradually go back to their previous state as enclave economies acting as swing producers within the world market for oil.

NOTES

1. Adelman, M.A. (1972) *The World Petroleum Market*, Johns Hopkins University Press, Washington, p.80.
2. The US Government and American oil companies argued that no area should be closed to free competition.
3. Blair, J.M. (1976) *The Control of Oil*, Macmillan, London, p.33.
4. The provisions were contained in the so-called Red Line agreement.
5. It had been suggested that the deal was reached because the same financial interests were behind Socal, Exxon and Mobil (see Blair, J.M. *op.cit.*, p.39).
6. BP was then known as the Anglo-Iranian Oil Company (AIOC).
7. Blair, J.M. *op.cit.*, p.44.
8. Exxon, BP and Shell signed the agreement; the other sisters joined afterwards (1932).
9. Blair, J.M. *op.cit.*, p.55.
10. Blair, J.M. *op.cit.*, p.99.
11. Rifai, T. (1974) *Le Prix du Pétrole, Economie du Marché ou Stratégies de Puissance*, Ed. Technip, Paris, p.194.
12. Issawi, C. (1972) *Oil, the Middle East and the World*, Sage Publications, London, p.24.
13. It was not until 1948 that the USA started importing oil from the Middle East.
14. Issawi, C. and Yeganeh, M. (1962) *The Economics of Middle East Oil*, Faber and Faber, London, p.126.
15. Rifai, T. *op.cit.*, pp.194 and 195.
16. In 1950, the cartel controlled 98.3% of the world oil market and 100% of Middle East oilfields.
17. Instrument for the implementation of the Marshall Plan.
18. Levy, W.J. (1982) *Oil Strategy and Politics*, Boulder, Colorado, Chs. 5 and 6 particularly.
19. Levy, W.J. *op.cit.*, p.85.
20. Penrose, E. (1968) *The Large International Firm in Developing Countries*, George Allen and Unwin, London, pp.142-43.

21. Penrose, E. *op.cit.*, p.143.
22. Penrose, E. *op.cit.*, p.137.
23. Penrose, E. *op.cit.*, p.138.
24. Adelman, M.A. (1972) *The World Petroleum Market*, Johns Hopkins University Press, Washington, p.90.
25. Adelman, M.A. *op.cit.*, p.90.
26. Blair, *op.cit.*, p.213.
27. A voluntary programme was in effect since 1957.
28. Venezuela, Saudi Arabia, Iraq, Iran and Kuwait.
29. Griffin, J.M. and Teece, D.J. (1982) Introduction, in *OPEC Behaviour and World Oil Prices*, George Allen and Unwin, London, p.6.
30. The piece of legislation known as the "Golden Gimmick" granted oil companies a credit against US liabilities amounting to taxes paid to host governments' countries.
31. Massarat, M. (1980) The energy crisis: the struggle for the redistribution of surplus profit from oil, in P. Nore and T. Turner (eds) *Oil and Class Struggle*, Zed Press, London, p.56.
32. NIOC in Iran (1954), CVP in Venezuela (1960), KNPC in Kuwait (1960), Petromin in Saudi Arabia (1962), Sonatrach in Algeria (1963), INOC in Iraq (1965), Linoco in Libya (1969).
33. Chevalier, J.M. *op.cit.*, p.48.
34. Rifa'i, T. *op.cit.*, p.321.
35. Adelman, M.A. *op.cit.*, p.251.
36. New York agreement (15 October 1972) which sets the pace for the gradual taking over of the oil industry by the oil exporting states.
37. Nore, P. (1980) Oil and the state: a study of nationalisation in the oil industry, in Nore, P. and Turner, T. (eds) *Oil and Class Struggle*, Zed Press, London, p.72.
38. *PPS* (1974) No. 41, p.19.
39. *PPS* (1973) No. 40, p.442.
40. *PPS* (1974) No. 41, p.117.
41. *PPS* (1974) No. 41, p.89.

42. *Petroleum Economist (PE)* (1975) No. 42, p.244 and *PE* (1976) No. 43, pp.271 and 7.
43. Roberts, S. (1984) *Who Makes the Oil Price? Analysis of Oil Price Movements (1978-1982)*, Oxford Institute for Energy Studies, p.11.
44. Export resumed in early March after the overthrow of the Shah.
45. Market that related the oil cartel to companies which did not deal directly with the oil exporting states.
46. Roberts, S. *op.cit.*, p.12.
47. *PE* (1979) p.505.
48. Roberts, S. *op.cit.*, pp.29 and 30.
49. Libya lost 2.4mb/d, Nigeria 1.3mb/d, others 0.7 m/bd, in the first eight months of 1981.
50. *PE* (1983) p.303.
51. *PE* (1984) p.71.
52. *PE* (1986) p.116.1

CHAPTER VI

THE INTERNATIONAL GAS INDUSTRY

Although oil and gas are both hydrocarbons, thus similar in terms of use of values, their "histories" and the usages to which they have been put contain more differences than similarities. In fact while oil and gas often constituted joint products of the same reservoir, the former was directed towards the market whereas the latter, considered as a nuisance (*gaz fatal*) had been extensively flared.

Since the 1950s however, gas has constituted the third tangible energy source. But although it represented around 22% of world consumption of primary energy in 1982,¹ the total international gas trade amounted to only 12% of total world output.² This discrepancy stemmed from the fact that, contrary to oil upon which industrial countries based their growth, gas was not exploited unless its reservoir was economically close to its market.

The ratio of reserve to production of the major gas consuming areas nevertheless suggests that if gas is to keep its share in energy consumption, the international gas trade is bound to grow. To that extent gas exports, as an alternative to oil exports from Algeria, would apparently become feasible and a gas rent (if any) may replace the oil rent as a means of financing the growth of the domestic economy.

The analysis of the prospects for international gas trade as well as the relevance of gas as a replacement for oil may then be undertaken in terms of

the magnitude of the gas material base (on a world scale) as well as the likely strategy of the operators concerned within the gas industry.

1. The gas material base

From 8 tcm (trillion cubic meter) in 1950 the proved gas reserves increased to 40 tcm in 1970 and reached 82 tcm in 1982.³ The bulk of these proved reserves had however shifted from North America, which accounted for 66.3% of world proved reserves in 1950, to Eastern Europe which took the lead with 39.34% of world reserves in 1982.⁴

The general trend of the world gas reserves' magnitude suggests that North America and Western Europe are likely to become more and more dependent on imported gas if no shift in the pattern of energy consumption takes place.

Table VI.1: World gas reserves as of 1 January 1981 (bcm)

| | 1980 | | Proved | | Reserve to Output |
|-----------------|------------|-----|----------|-----|-------------------|
| | Production | % | Reserves | % | Ratio |
| West hemisphere | 720.6 | 43 | 13,018 | 17 | 18 |
| West Europe | 202.0 | 12 | 4,246 | 5 | 21 |
| Mid-East | 121.9 | 7 | 18,396 | 24 | 151 |
| Africa | 71.7 | 4 | 5,906 | 8 | 82 |
| Asia-Pacific | 71.9 | 4 | 4,259 | 5 | 59 |
| CPE's | 507.6 | 30 | 31,752 | 41 | 63 |
| Total | 1695.7 | 100 | | 100 | 46 |
| Of which OECD | 849.7 | 50 | | 17 | 16 |

Source: IEA, Natural gas, prospects to 2000 OECD/IEA, Paris 1982.

Table VI.1 shows that the regions which are likely to run into a deficit in the near future are North America and Western Europe. In this context gas consumption seems to be inversely correlated to the amount of proved reserves. In fact while the bulk of gas consumption has been concentrated in OECD countries (especially the USA), the gradual depletion of the latter's reserves and the technical and economic difficulties facing intercontinental gas transport may translate into a shrinkage of gas consumption on a world scale.

Although uneven, gross gas consumption increased from 194 bcm (billion cubic meter) in 1950 to 1600 bcm in 1980 (see table VI.2 below). Gross production was however far higher than consumption. This fact indicates that an important amount of produced gas has not found its way onto the market. In fact flared or reinjected gas had constituted the bulk of the Middle East and Africa's gross production whereas the opposite holds for the OECD countries.

Table VI.2: Gross Output and Marketed Output (bcm)

| Regions | 1950 | | 1960 | | 1970 | | 1980 | |
|------------|------|-------|------|------|------|------|------|------|
| | G.O. | M.O. | G.O. | M.O. | G.O. | M.O. | G.O. | M.O. |
| N. America | 242 | 179.3 | 444 | 377 | 748 | 685 | 753 | 690 |
| S. America | 22 | 3.7 | 54 | 12 | 94 | 37 | 121 | 73 |
| W. Europe | 0.9 | 0.9 | 13 | 12 | 81 | 77 | 206 | 196 |
| E. Europe | 14 | 10 | 64 | 57 | 252 | 236 | 506 | 488 |
| Africa | - | - | 0.5 | - | 39 | 3 | 116 | 26 |
| Mid East | 12 | 0.1 | 31 | 3 | 90 | 22 | 124 | 47 |
| Far East | 3 | 0.3 | 9 | 4 | 32 | 25 | 102 | 80 |
| Total | 294 | 194 | 615 | 465 | 1336 | 1085 | 1928 | 1600 |

Source: World oil, oil and gas Journal, U.N. quoted in Gadjiev M. ,
"Developpement du gaz naturel, Premier seminaire d'economie du gaz naturel, Boumerdes (1982) p.27

Whereas North America marketed output reached 91% of gross output in 1980 (74% in 1950), Middle East marketed output amounted to 38% of gross output having represented 0.8% in 1950. The discrepancy between Middle East gross output of gas and its marketed position does indicate the position of Middle East (and African) countries in the international division of labour.

During the 1950s and 1970s the oil cartel sought to maximise its profit through oil exploitation while gas (economically worthless from the cartel's viewpoint) was either flared or reinjected to enhance oil recovery. Because of the structure of the world economy (based on oil rather than gas) and the cartel's strategy which focused on profit maximisation, with no regard to the host countries' development, the gas industry could only emerge after the reorganisation of the Middle East oil industry (see Part B, chapter V).

The relative increase in the share of Middle East and African marketed gas, then, suggests that the states concerned have been taking steps towards integrating gas into the economic sphere rather than flaring it.

In the event that no major shift takes place in the energy consumption pattern of the OECD countries and in view of the ratio of reserves to output in different world regions, the Middle East, Africa and the USSR could gradually become the only net exporters of gas by the turn of the century. International gas trade would follow the oil trade in the direction of its flow from the Middle East and North Africa to OECD countries.

2. The peculiarities of the gas industry

In view of the relative proximity of Algeria to Western Europe, the latter ought to be the likely outlet for Algerian gas. The failure of Algerian gas to penetrate the US market (see section 4 below) may actually reinforce Algerian policymakers in their belief that the US market is, for the foreseeable future, closed to Algerian exports.

The development of the Algerian gas industry is therefore highly related to Western Europe energy policy and could not evolve unless Western Europe were willing to depend on Algerian gas supplies in particular and on gas imports in general.

Unlike in America., however, Western European gas consumption only became tangible when the Groningen field (Netherlands) was discovered in 1959. To that extent the Netherlands and Norway are likely to be the European net gas exporters for the rest of the century. The gradual increase in Western European gas consumption (Table VI.2) is however to be partly met by imports from non-OECD countries.

The import requirement of Western Europe actually results in the emergence of gas as an international commodity alongside crude oil. But whereas oil constitutes a world commodity, gas (with which it is often compared) may only qualify as an international commodity linking a few supplying to a few importing countries.

The disparity between oil and gas consumption, apart from historical reasons has mainly been due to the relatively high cost of bringing the latter to

the final consumer.

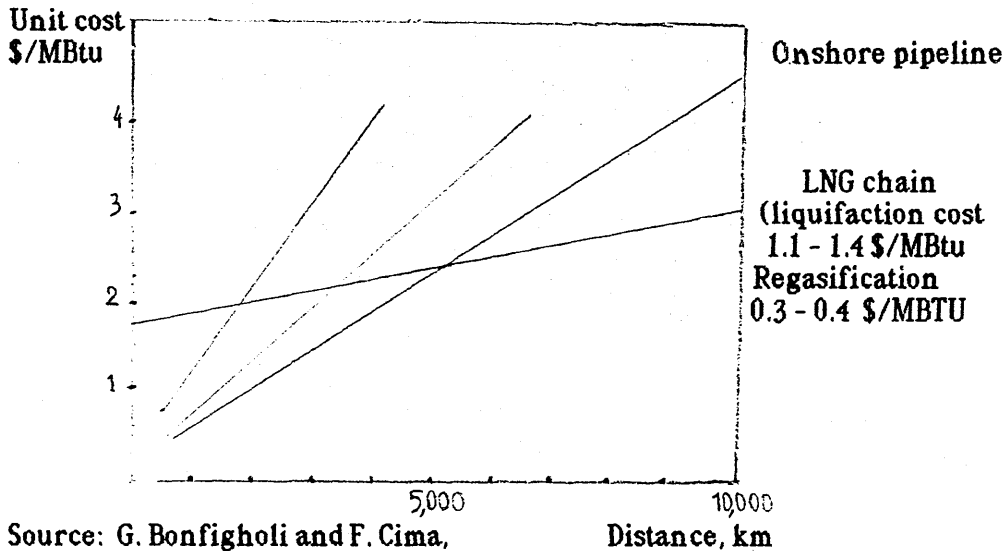
On a thermal equivalent basis, the cost of transporting gas through pipelines has been estimated at roughly twice the cost of transporting crude oil.⁵ By the same token, the cost of transporting gas in LNG tankers was estimated at five times the cost of transporting oil in oil tankers.⁵ Finally for a 10 bcm liquifaction plant the cost of liquifying natural gas amounts to \$5 (1978) per barrel.⁵

The equalisation of oil and gas prices on a thermal basis therefore reduces the gas rent encompassed in the price of gas supplied by exporting states. To supply gas to consumer countries, two means of transportation are competing:

- The pipeline system
- The L.N.G. chain

Although specific project circumstances require a case by case study in order to determine the actual cost of gas transportation (which depends on several variables: size of the projects, port facilities, size of the gas field etc.), a comparison of transportation costs would be visualised through the analysis of a hypothetical LNG and onshore and offshore pipeline system.

Cost of natural Gas transport
Values at April 1980 - referred to the outlet quantities
considering 18 billion m³/year at the inlet
or liquifaction plant



Source: G. Bonfigholi and F. Cima,
 "Economies of Gas Utilisation in Different fields" 1980
 quoted in IEA, op cit. 9125.

The figure above shows that the cost of natural gas transport is highly dependent on the distance between the gas source and the market. Onshore pipelines are the least expensive, provided the distance covered is less than 6500 km. Beyond that point the LNG chain is the best alternative.

On the other hand a submarine pipeline could compete with the LNG chain if the distance concerned is less than 3500 km for conventional submarine pipelines and 1500 km for deepwater ones. Both means of transportation, however, reduce the magnitude of the gas rent because of their relative high cost. Since within OECD countries gas primarily competes with fuel oil and

diesel, its market price is determined and limited by the price of these competing energy sources.

The crucial elements in the determination of the price of gas (as in oil) reside within the energy sphere. However the price of gas is not determined within the world market but depends on conditions peculiar to national markets. Thus, depending on whether the targeted market is the US or European one, Algerian gas would command a different FOB price (\$5.12 /MBtu for the French market and \$3.94/MBtu for the U.S. market in 1982).⁶

Whether gas should command a premium price (as Algerian policymakers argue)⁷ depends particularly on how the former is used:

- In residential/commercial markets gas, because of its material characteristics, may command a premium price. However high distribution costs, which stem from the number of outlets of low volume use and wide seasonal load variance, may more than offset the premium paid for the particular characteristic of gas.

On the other hand, some industrial and electricity generating markets (which may represent the largest share of the gas market) are profit maximisers and ultimately focus on the least expensive Btu with no regard to the material bearer. In fact because of economies of scale and the need to limit the impact of seasonal load variance in the residential/commercial markets, the industrial and electricity generating sector consumption could actually make the difference between a viable international gas project and an uneconomic one.⁸ Since the latter sectors are unlikely to consider a premium price for gas,

the Algerian argument does not seem to be sound.

In fact the argument for high gas prices, in terms of its material characteristics, seems to stem from a confusion between the gas use value and its exchange value. While the latter intrinsically characterises gas as a good, it is however the former that determines the magnitude of the market price of gas as a commodity.

Being within the energy sphere, gas as a commodity must nevertheless compete with other energy material bearers (fuel oil and diesel in OECD countries) and its price ultimately depends on the structural features of each individual domestic market. For historical reasons, gas constitutes a newcomer in world energy consumption. As such it can only increase its market share by conceding a discount on its price vis à vis the price of well established competing fuels.

In view of the energy consumption pattern of Western Europe, the argument for a market premium over competing fuels does not hold. It is in fact the argument for a discount which is likely to prevail.

While from 1960 to 1973, European gas consumption increased at an annual rate of 21%, the period 1973-1980 witnessed the much lower figure of 5.1%. Energy conservation on one hand, and the trend in declining oil prices which has characterised the present decade (1980s) on the other, could likely constitute a strong argument (on the part of importing countries) for a lower

price of gas. In this case the very existence of a gas rent is to be called into question.

3. On the magnitude of the gas rent

While suggesting that gas does not constitute a world commodity, the non-existence of a reference price for gas on a world scale may indicate that the price of this product is largely determined within the market of each gas consuming country. In this instance the magnitude of the price of gas must be such that the latter can compete with alternative fuels at the burner tip if gas consumption is to increase in importing countries.

The upper limit for the price of gas in consumer countries is therefore an indifference price which equalises different sources of energy (on a Btu basis) for the final consumer. The indifference price is actually the maximum price that a buying gas company (from an importing country) could support without damage to its domestic market share.

Although the indifference price is specific to each domestic market, a general formula could be set up in order to consider the likelihood of a gas flow in the international market.

Since in Europe gas mainly competes against fuel oil, the price of both energy sources can be linked by the following formula

$$P_g = k P_f$$

where

P_g : price of gas (C.I.F)

P_f : price of fuel (C.I.F)

k : coefficient and $0 < k < 1$

If k is equal to one, the price of gas P_g is of the same magnitude as the price of fuel and the final consumer becomes indifferent between the two energy sources. On the other hand, if k is smaller than one, gas becomes less expensive than fuel and could increase its market share.

Finally, if k is greater than one, gas becomes more expensive than fuel and the buying gas company cannot compete within its domestic market. From the gas exporting state point of view however a coefficient k of magnitude less than unity is likely to reduce its income (in the form of gas rent), the formula for the rent being set as follows:

$$R_g = k P_f - C_g$$

where

$$R_g = \text{gas rent}$$

$$C_g = \text{cost and fair rate of return on capital invested}$$

A lower limit for k beyond which no export is likely to occur is reached when the rent encompassed in the price of gas is equal to zero i.e.:

$$k_0 P_f - C_g = 0$$

or

$$k_0 = C_g / P_f$$

For international gas trade to be envisaged, the magnitude of the coefficient k must be set within the range $[k_0, 1]$. If k is less than k_0 , a negative rent emerges and the gas exporting state has no incentive to enter the international market.

On the other hand if k is greater than one, the buying gas company has no incentive to import gas since it cannot compete against fuel oil. The struggle over the appropriation of the gas rent between exporting countries and importing ones actually materialises in the bargaining process over the magnitude of the coefficient k .

The closer k is to one, the larger share of gas rent is appropriated by the exporting country, but the closer k is to k_0 , the larger share of gas rent is appropriated by the gas importing company (which may have to share part of the gas rent that accrue to it with the tax authorities of the country it operates in).

The absolute magnitude of the gas rent however depends entirely on the price of competitive fuels which, in the European market, are fuel oils. Although derived from crude oil which is a world commodity with an accepted reference price (the OPEC market crude), fuel oils are not directly priced with reference to the price of crude oil. They can, in fact, be lightly or heavily taxed depending on the energy policy of individual governments.

Taking into account average prices within OECD Europe the IEA nevertheless constructed three scenarios for future gas consumption in the year 2000: a constant volume scenario, a constant share scenario and an increasing share scenario make up the three alternatives envisaged.¹⁰

For the three scenarios the maximum prices at the burner tip which could be accepted by a competitive market were predicted as follows (in 1981 US

dollars).

| | |
|---------------------------|--------------|
| constant volume scenario | 6.08 \$/MBtu |
| constant share scenario | 6.06 \$/MBtu |
| increasing share scenario | 5.79 \$/MBtu |

By estimating capital, operating and storage costs for internal distribution, the IEA arrived at the maximum average C.I.F. price that could be paid by an importing gas company to a gas producing state.

| | |
|---------------------------|--------------|
| constant volume scenario | 4.83 \$/MBtu |
| constant share scenario | 4.51 \$/MBtu |
| increasing share scenario | 4.37 \$/MBtu |

Although these figures are roughly equivalent to 25 \$/barrel, they do not reveal the difference between the cost of producing a barrel of oil and the cost of producing a barrel of gas. In other words they hide the relatively small magnitude of the gas rent.

The latter could however be calculated by subtracting the total cost of producing a MBtu from the maximum border price that could be accepted by a gas importing company.

Table VI: 3: Illustrative infrastructure costs for national gas trade, \$/MBTu

| | Algeria N. Europe | Algeria N. Europe | Arabian Gulf Europe | Arabian Gulf Japan |
|--|----------------------|----------------------|------------------------|-----------------------|
| | pipeline | L.N.G. | L.N.G. | L.N.G. |
| Gas gathering | 0.25 | 0.25 | 0.25 | 0.25 |
| Liquifaction | | 1.10 | 1.10 | 1.10 |
| Transportation | 1.53 | 0.55 | 1.45 | 1.45 |
| Regasification | | 0.40 | 0.40 | 0.40 |
| Total cost | 1.78 | 2.30 | 3.20 | 3.20 |
| Max. border price (Wellhead netbacks) | | | | |
| No growth (1) | 4.83 (3.05) | 4.83 (2.53) | 4.83 1.63 | 6.25 (2) 3.05 |
| Maintain market (1) | 4.51 (2.73) | 4.51 (2.21) | 4.51 (1.31) | - |
| Increase market (1) | 4.37 (2.59) | 4.37 2.07 | 4.37 (1.17) | - |

(1) Scenarios mentioned above.

(2) In the absence of information required to construct this price, the average customs clearance CIF price for Nov. 1981 is used.

Source: IEA, *National gas, prospects to 2000*
IEA, OECD, Paris 1982, p.127 (upper part of the table)
p.59 (lower part of the table)

Since the market price of gas is ultimately set up within the consuming country and transportation costs constitute a high percentage of the gas price, the viability of an international gas project is highly dependent on the distance between exporting regions and consumer ones. Table VI.3 shows that Algeria is relatively well positioned with respect to Europe, whereas the Arabian gulf countries should be expected to export gas to Japan rather than to Europe.

The figures in Table VI.3, however, represent optimum figures for the exporting countries since the wellhead netbacks are derived from maximum border prices which, in the argument developed above, correspond to a coefficient k equal to one.

This coefficient actually constitutes the object of a bargain and can approach unity only insofar as the gas exporting states hold a relatively strong position in the international gas trade. On the other hand, the magnitude of the maximum border price, being highly correlated with the price of fuel oil, basically depends on the price of oil on a world scale.

Thus while the absolute magnitude of the gas rent depends on the price of competitive fuels in each particular market, the gas exporting states' share of the gas rent is basically determined by their bargaining strength with each individual gas importing country (or company).¹¹

As a determinant factor in the price of gas, the price of crude oil becomes the central issue in the prospect for international gas trade. As such the unlikely collusion among gas exporting countries and the very peculiar nature of international gas trade (high investment costs, rigidity in supplies, etc.) suggest that gas exporting states can benefit from international gas trade and increase their share (wellhead netbacks) of the gas rent only inasmuch as they are able (or willing) to appropriate a larger share of the oil rent by imposing a high price of oil.

The Algerian option for gas export came into being when signals for a tight market emerged in the international scene. Algerian policymakers then sought to complement oil revenues by gas revenues in order to speed up the growth strategy decided upon.

4. The Algerian gas export policy

The gas option as an alternative to oil export from Algeria had actually been predictable to the extent that, in view of the composition of its hydrocarbon reserves, Algeria would qualify as a gas economy rather than an oil economy.

The gas policy set up by Algerian policymakers would assume the existence of a potentially important gas market at the international level as well as the possibility of appropriating a substantial gas rent. To that extent a full development of the LNG (liquified natural gas) chain was planned in the 1970s (when the oil market became a seller's market) by the Bechtel Company (USA) which sought to lay down a thorough planning for the evolution of the hydrocarbon industry up to the year 2005.

4.1 The "Valhyd Plan" ¹²

The basic objectives of the Valhyd plan was to extract all known reserves of oil and gas over a period of 30 years (1976-2005). By the end of that period the Bechtel company assumed that the Algerian economy would be diversified enough so that export of hydrocarbons would not be needed any more. Export of gas was particularly stressed in view of the importance of Sahara reserves.

The Bechtel programme was furthermore confirmed by the ideology of the "Charte Nationale", the basic doctrinal text of the Algerian ruling party for the

1970s. That text stressed that:

"Making available the sums (of money) provided by gas valorisation, is giving rise to a means of insuring the financing of the country's development and building a basis for guaranteeing the financial independence of the state" 13

The Valhydplan then considered that annual output of gas would gradually reach 110 bcm (by 1985) to which 70 bcm would be destined for export, 20 bcm for the domestic market and the rest (20 bcm) constituted self-consumption (for equipments and plants) and losses.

To realise this level of output the Valhyd plan set an anticipated investment of 33.4 billion constant dollars covering the whole period of 1976-2005. The bulk of this investment however would be effective by 1985 in that 33 billions would have been invested by that time. Financing this investment, on the other hand, required the availability of 17.4 billion in foreign currency that were to emerge through export of hydrocarbons and international borrowings. The latter would actually amount to 3 billion dollars for the period 1978-1980 (half the hydrocarbon sector income for the year 1978).

Although, concerning the whole hydrocarbon industry, the Valhyd plan mainly focused on the natural gas productive base in general, and the LNG chain in particular, the latter would have been extended by the implementation of more liquifaction plants.

Table VI. 4: LNG complexes (on stream and planned)

| Site | Complex | Builder | Starting year | No. of trains | Capacity 10 ⁹ therm/year |
|---------|-------------------------|-----------------------|---------------|---------------|--|
| Algeria | GL ₄ /Z | Technip (France) | 1964 | 3 | 18 |
| | GL ₁ /Z | Bechtel (USA) | 1978 | 6 | 105 |
| | GL ₂ /Z | Pullman Kellogg | 1980 | 6 | 105 |
| | <u>GL₃/Z</u> | <u>Foster Wheeler</u> | 1981 | 9 | 155.5 |
| | <u>GNL_y</u> | - | 1982 | 3 | 52.7 |
| Skikda | GL ₁ /K | Technip | 1973 | 3 | 37.5 |
| | 1,2,3 trains | | | | |
| | Train 4 | Pullman Kellogg | 1977 | 1 | 14.35 |
| | Train 5,6 | Pullman Kellogg | 1979 | 2 | 31.45 |
| | <u>GNL Est</u> | - | 1982 | 6 | 105 |
| Center | | | | | |
| ISSERS | <u>GNL Centre</u> | - | 1982 | 6 | 105 |

Source: Plan Valhyd, quoted in Mekkideche M., *le secteur des hydrocarbures*, OPU, Alger 1983 p. 306.

_____project cancelled in 1980.

This productive base when complemented by the oil industry would, according to the Valhyd plan, generate an income of 250 billion dollars over the period considered (1976-2005), of which 200 billion represented foreign currency earnings.

The basic hypothesis upon which Bechtel arrived at a magnitude of 250 billion dollars as income for Algeria concerned the anticipated price of LNG: the latter was set at \$1.325/MBTu while the price of crude oil and refined products were respectively priced at \$109.66/ton and \$110.50/ton (Condensate was priced at \$116.08/ton).

According to Bechtel, crude oil would insure an income of around 95 billion dollars, of which 58% would be in hard currency, whereas natural gas would generate an income of 156 billion, 97% in hard currency. Finally, whereas crude oil would realise 46% and natural gas 28% of total income generated for the period 1976-1985, natural gas would take the lead for the rest of the period and realise 45% of total income from 1986 onward.

In view of the price set by Bechtel for crude oil, natural gas was (on a calorific content basis) underpriced by 1.47 \$/MBTu. The latter figure would actually represent a loss of a portion of the gas rent which could be appropriated by the Algerian state if the price of gas was indexed to the price of crude oil (as happened in the 1980s). The underpricing of gas by Bechtel did not however prevent the optimistic forecast about the income generated by LNG exports.

Thus, for the year 1979, Bechtel predicted a turnover of 947 million dollars for LNG exports, whereas the actual turnover could only reach a maximum value of 751 million dollars if the LNG plants were functioning according to design. ¹⁴

Although the international oil market (and thus the international energy market) had been a tight one for the whole of the 1970s, Bechtel had been over

optimistic with regards to LNG export results. In fact Bechtel's analysis failed to consider three basic constraints:

1. Bechtel had actually confused the Algerian environment with its counterpart in a developed economy. Whereas, in a developed economy, a plant could reach its optimal production level, the analysis of the Algerian scene does not militate in favour of the likelihood of attaining the designed capacity (see Part A, ch. III).

Cost overrun has, in fact, been a constant feature of the Algerian industrialisation process.

2. A second feature of the Algerian experience had been totally missed by Bechtel's analysis. This relates to important delays in the implementation of the productive basis.

Concerning the LNG chain, Bechtel did not anticipate delays (at least 2 years) in the building of the No. 4, No. 5 and No. 6 trains of the Skikda complex (GL1/K).

3. Finally the price of gas (1.325 \$/MBtu) envisaged by Bechtel did not materialise in 1979 since the negotiations between El-Paso and Sonatrach ended up with a price of 1.15 \$ /MBTu in July 1979.¹⁵

Besides the basic constraints mentioned above, the Bechtel analysis (set up at Sonstrach's request) had ultimately missed the fact that the hydrocarbon industry was part of the national economy. In this instance the evolution of the former had not been directly connected with the rest of the economy. On the contrary, the level of exports envisaged by Bechtel stemmed from the expected demand at the international level and did not consider the burden (on the national economy) of the important investment required to implement the Valhyd plan.

On the other hand, setting up a gas productive basis materialising a total output of 110 bcm/year reduced the ratio of reserves to output to around 30 years. This short life span implied by the Bechtel corporation, could have firmly been imposed on the Algerian economy since the rigidity of the LNG chain would not have allowed a reassessment of the level of export.

Furthermore, in a relatively unstable market as the energy one, envisaging a 30 years plan, through a rigid productive basis as the LNG chain, implicitly, assumed the non-emergence of downward pressure on the price of oil (hence on the price of gas) which could jeopardise the whole export policy.

Algerian policymakers may actually have avoided a crisis by calling into question the Valhyd plan which was put aside by the early 1980s. Although the Valhyd plan was called into question and the former export policy officially criticised, export of natural gas as a hard currency earner was not cancelled. On the contrary, the change from the previous era (Pr Boumediene's) only amounted to abandoning the LNG option, which was considered too costly, and focusing on the pipeline option which required less investment and generated a higher rent (netback value). The gas option as such was still alive despite the energy market conditions of the 1980s.

4.2 Prospects for gas exports

The pipeline system as an alternative to the LNG chain nevertheless emerged at a time (1983) when the oil market was witnessing a state of excess supply on a world scale.

The increase of gas exports on a world scale in general and from Algeria in particular had actually been hampered by the state of the oil market which constituted the ultimate reference for the price of gas. Thus European customers (Belgium, France and Italy) agreed upon a relatively high price of gas which was equated with the oil price on a FOB basis. American customers (El-Paso in particular) decided to cancel their contracts with the Algerian company Sontrach.

Thus by early 1981, El-Paso (U.S.A.) cancelled its El-Paso-I 10 bcm/year contract which started operating in 1978 and was reviewed in July 1979.¹⁶

Panhandle/Trunkline (U.S.A.) on the other hand, at first accepted a price of 3.92 \$/MBtu in its deal with Sontrach (September 1982) but after claiming a 30% fall in profits, decided upon a unilateral suspension of its contract by January 1984.¹⁷

Finally the last U.S. company (Distrigas of Boston) to deal with Sontrach, claiming financial problems, stopped importing Algerian gas as well.¹⁸ By the end of 1985, the withdrawal of U.S. companies as importers of Algerian gas, left Sontrach dealing with four European partners.

Italy started receiving Algerian gas through the "Transmed" pipeline by June 1983. The flow of Algerian gas exported to Italy then rose from 2.13 bcm/year in 1983 to 6.56 bcm/year by 1984.¹⁹ LNG exports however fell to 12.04 bcm in 1984 whereas they amounted to 15.67 bcm in 1983. The fall in LNG exports actually stemmed from the cancellation of US deals and the spreading out of deliveries to France.²⁰

"Gaz de France", however, was expected to import 9.3 bcm/year at a price agreed upon in 1982. The latter agreement could nevertheless be called into question since France achieved price reductions from its Netherland and Soviet suppliers.²¹

Belgium, on the other hand, had been expected to lift 5 bcm/year in its 1981 contract with Sontrach. The flow of gas had, however, been rescheduled downward, thus slowing down deliveries.²² Finally, the year 1985 witnessed the settlement of a long standing dispute between Algeria and Spain.²³ Whereas the 1973 agreement required Spain to lift 4.5 bcm/year, of which no more than 1.5 bcm/year had ever been taken, the new agreement arranged for 60 bcm of gas to be imported by Spain over the years to 2004.

The price agreed upon (\$3.90/MBtu) was of the same magnitude as the price paid by France and Belgium and resulted in an increase (+\$1.01/MBtu) in the netback value appropriated by Algeria. Furthermore the price of gas was indexed against a basket of OPEC crude oil prices. Although the Algerian policy of reaching full (or almost full) parity between the price of gas and the price of oil seemed to have materialised with its European customers, the amount of gas exported by Sontrach does not show any steady trend.

Table VI.5: Algerian export of LNG* (bcm)*

| | Amount | % Change |
|------|--------|----------|
| 1978 | 6.4 | |
| 1979 | 11.4 | +78% |
| 1980 | 6.6 | -42% |
| 1982 | 9.2 | +35.9% |
| 1983 | 15.67 | +57.9% |
| 1984 | 12.04 | -23% |
| 1985 | 12.67 | +5% |

* LNG Liquefied Natural Gas

* bcm billion of cubic metres.

Source: 1978 to 1981, Petroleum Economist, 1983, p.454.

1982 to 1984 Petroleum Economist, 1985, p.431.

1985 Petroleum Economist December, 1986, p.437.

Thus, whereas contracted volumes with its LNG European partners amounted to 18.6 bcm/year, Sontrach had not been able to export the latter figure. On the other hand Sontrach was facing an excess capacity in its LNG plants since installed capacity amounted to 30.5 bcm/year.²⁴

The choice currently facing Algerian policy makers seems to be straightforward: they either stick to a price of gas equivalent to the price of oil and gradually lose their customers, or renounce the previous formula and set the price of Algerian gas at a competitive level against other sources (the Netherlands and the USSR). In both policies, however, the price of Algerian gas is bound to move to a lower level than the one agreed upon in 1982 (with the European importers).

If the 1970s witnessed a state of "Euphoria" on the part of Algerian policymakers as far as gas exports were concerned (cf. Valhyd Plan), the conditions characterising the 1980s may require an opposite attitude towards gas exports.

The basic problem facing gas exporting states in general stems from the non-existence of a world market of gas as such. In this context any deal with any importing country constitutes a specific deal with no general validity. The price of gas on the other hand has not shown any uniformity. Thus depending on the targeted market, a gas exporting country could realise several gas prices (hence different netback values).

In 1979, for instance, the Netherland faced CIF prices ranging from 1.25 to \$3.65/MBtu in five different markets. The USSR on the other hand sold its gas at prices ranging from 1.15 to \$2.70/MBtu.²⁵

The two countries mentioned above actually constitute the main competitors for Algeria, the latter however confronts a higher production cost since its gas must be carried either by LNG tankers or submarine pipelines. In this context the magnitude of the gas rent that could be appropriated by Algeria can only be lower than the one appropriated by its competitors.

The prospects for Algerian gas exports in general and the appropriation of a gas rent that could gradually replace the oil rent may therefore be highly questionable.

Two basic factors seem to hinder the realisation of a gas price encompassing a substantial rent (a coefficient k close to unity):

1. The trend of declining oil prices that has characterised the 1980s
2. The non-existence of a world gas market upon which gas exporting countries could decide on a collusive strategy

The indexation of the price of gas against the price of crude oil actually represented a breakthrough from the gas exporting states point of view in so far as it increased the magnitude of the gas rent appropriated by the latter. The gas exporting states' action however took place (in 1980) when the oil price was still relatively high (\$30/b on average) thus implying a price of gas of about 5/MBtu and a netback value of around \$2.50/MBtu (see Table VI.3).

Although relatively smaller than the oil rent, the gas rent encompassed in the early 1980s gas price constituted an important improvement on what had been happening during the 1970s. In these years, instead of appropriating a potential rent, the Algerian state actually lost 290 million dollars (up to December, 1979) in its LNG sales to the US market because of the low price (\$0.305/MBtu) agreed upon with its LNG customer, El-Paso.²⁶

The year 1979 nevertheless witnessed a small improvement since Algeria could net around \$1.25/MBtu which represented about one third of the rent derived from oil exports.²⁷ The 1970s and the early 1980s however were favourable years for gas exporting countries since the oil market in particular had been a seller's market. The present market conditions (1980 onward), on the other hand, while imposing downward pressure on the price of oil are likely to damage the economics of gas exports.

Within the indexation policy, the current price of oil (around \$15/bl) actually implies a price of gas at a level of \$2.5/MBtu which, according to Table VI.3, is of the same magnitude as the cost of liquifying gas and leaves around 60 cts/MBtu as gas rent for piped gas.

The likelihood of a price of gas in the neighbourhood of its production cost may in fact be on the agenda for the negotiations that Algeria is currently (1986) holding with its European partners.²⁸ This magnitude of the gas price would however call into question the whole gas export policy. The latter, as a means of financing economic growth within the whole economy, would at this stage be reduced to repaying the cost of implementing the gas productive basis.

The claim about the replacement of oil export by gas export for the financing of the Algerian growth strategy would be unsubstantiated and may stem from a misapprehension of the functioning of the energy market.

Beyond the state of the oil market, the ability of gas exporting states to appropriate a substantial gas rent may reside upon a collusive strategy (of the OPEC type) that would reduce the bargaining power of the importing countries. This aspect (the collusive strategy) is however unlikely to emerge since:

1. The non-existence of a world gas market separates the interests of different exporters:
Japan's suppliers (Alaska, Brunei, Indonesia, Malaysia and Abu Dhabi) face an economy more dependent upon gas than Western Europe or USA suppliers.²⁹

2. On the other hand, Western Europe, the objective market for Algerian gas, is much less dependent on imported gas since it is 80% self-sufficient.³⁰

In this instance Western Europe would remain a buyer's market for the foreseeable future and a collusion between the two main European suppliers (the Soviet Union and Algeria) is unlikely to emerge, not least because of their different level of development and the perceptions they may have of gas exports in their overall economic development.

The prospects for gas exports, and the appropriation of a substantial gas rent by Algeria in particular, seem therefore to depend ultimately upon an improvement of the price of oil on a world scale. The 1980s do not, however, show any trend towards such an improvement and the price of gas is likely to remain at the level of its cost of production. In this case, export of gas cannot be used by Algeria as a means of financing the lagging sectors of the rest of the domestic economy.

NOTES

1. See Part A, Ch. I, Table I.1.
2. Gadjiev M. (1982) *Développement du gaz naturel*, Premier séminaire d'économie du gaz naturel, Boumerdès, p.27.
3. Gadjiev and others, *op.cit.*, p.21.
4. Gadjiev and others, *op.cit.*, pp.21 and 24.
5. Ait-Laoussine, N. (1980) Gas, recent developments and problems of supply in Mabro R. (ed), *World Energy, Issues and Policies*, Oxford University Press, Oxford, p.56.
6. IEA (1982) *Natural Gas, Prospects to 2000*, OECD, Paris, p.105.
7. Ait-Laoussine, N. *op.cit.*, p.39.
8. Jensen, J.T. (1980) World natural gas reserves and the potential for gas trade, in Mabro R. (ed), *op.cit.*, p.57.
9. IEA, *op.cit.*, p.44.
10. IEA, *op.cit.*, p.49.
11. Japan, for instance, pays more for its imported LNG because of the need to reduce pollution.
12. Plan Global de développement des hydrocarbures en Algérie, *El-Hindiss*, No. 3, Jan.-Feb. 1979, Alger.
13. Charte Nationale, Titre VII, Section II, p.167, 1976 Alger.
14. Mekkideche, M. *op.cit.*, p.289.
15. *Petroleum Economist* (1983) p.347.
16. *Petroleum Economist* (1983) p.259.
17. *Petroleum Economist* (1984) p.42.
18. *Petroleum Economist* (1985) p.432.
19. *Petroleum Economist* (1985) p.432.
20. *Petroleum Economist* (1985) p.90.
21. *Petroleum Economist* (1985) p.432.
22. *Petroleum Economist* (1985) p.90.
23. *Petroleum Economist* (1985) p.432.

24. This situation means that costs overrun are likely to occur.
25. *Petroleum Economist* (1980) p.373.
26. *Petroleum Economist* (1980) p.377.
27. Ait-Laoussine *op .cit.*, p.34.
28. *Petroleum Economist* (1986) p.61.
29. *Petroleum Economist* (1985) p.431.
30. Reid, R.G. (1987) A view of European oil and gas issues, in Rees, J. and Odell, P. (eds), *The International Oil Industry*, Macmillan Press, London, p.82.

CHAPTER VII

THE OIL RENT AND THE AGRICULTURAL SECTOR STAGNATION

If the gas rent does not seem to have been substantial, the oil rent, however, constituted the bulk of the Algerian state-foreign currency earnings. The appropriation of the oil rent, however important, could only be grasped as, the first stage in the development process which was supposed to take place within the Algerian scene. The use of the oil rent or, in other words, the process which transforms money capital into productive capital, was to constitute the second stage in the integration of the economy.

However, in view of the content of the successive plans, the increase in the portion of the oil rent appropriated by the Algerian state seems to have gradually pushed the hydrocarbon industry towards the world market, therefore limiting the emergence of productive capital outside the hydrocarbon sphere.

The impact of the oil rent may, however, be considered as a negative one to the extent that, contrary to what had been constantly claimed, the motivating function assigned to the hydrocarbon industry had in effect been replaced by a financing function directed towards inefficient sectors of the economy. By giving substantial leeway to the Algerian state, the appropriation of the oil rent actually impeded the implementation of a radical policy that would have tackled the essential problems facing the rest of the economy. Inefficient industries had been implemented with no regard to conditions prevailing either domestically or on the world market (see chapter VIII below).

The agricultural sector in particular faced constant pressures, with no means for responding to domestic demand (thereby putting a substantial burden on the trade balance).

1. The "1971 agrarian revolution": causes and objectives

Despite the official view which emphasised the necessary link between the development of industry and the development of agriculture, the actual evolution of the latter went in the opposite direction of what had been officially planned.

The period 1962-1971 (see Part A, ch. II, section 2.1) witnessed a tangible decline of the state controlled sector and a thorough lack of policy concerning the private sector which evolved within the same framework as that of the colonial era. The state policy, or more precisely the lack of policy towards the agricultural sector would actually constitute a source of impediment since the necessary connection required by the adopted growth strategy (see Part A, ch. I, section 5) could not take place without a restructuring of the agricultural sector in general and its privately owned part in particular.

The restructuring of the agricultural sector would nevertheless happen at the expense of the "national solidarity" which constituted the official political slogan since 1965. To implement the restructuring of the agricultural sector, some social groups had to be confronted and eliminated from the agricultural scene. In this confrontation, however, the Algerian state felt confident enough, for the nationalisation of the hydrocarbon industry (February 1971) not only strengthened its economic base but re-enhanced its political power: the struggle against an external enemy was still on the agenda, while the

internal struggle against large landowners and absentees could still be presented as an original act of "national solidarity": wealthy Algerians would donate part of their wealth - land in this case - to the poor.

The nationalisation of the hydrocarbon industry and the so-called 1971 agrarian revolution may then be considered as two complementary conditions for the realisation of an integrated economy. The agrarian revolution, as a response to the agricultural sector crisis, took shape via a distribution of public and nationalised privately owned land to small and landless peasants.

What had characterised the agricultural sector up to 1971 was the continuation of a colonial policy without the French colonists: while the colonists' sector came under the Algerian state's control under the guise of a self-managed sector and followed the production pattern (see Appendix VII.1) it has been subjected to during the colonial era, the private sector kept on being marginalised with respect to the growth strategy.

This marginalisation would, however, constitute a source of disequilibrium (both economically and politically) since the main feature of the privately owned agricultural sector would emerge as a highly skewed land distribution.

Table VII.1: Structure of the agricultural private sector, 1971

| Size of area | Number of farms | % in total area |
|---------------|-----------------|-----------------|
| 0 - 5 hectare | 308995 | 8.8 |
| 5 - 10 ha. | 114275 | 13.8 |
| 10 - 50 ha. | 147043 | 50.8 |
| + 50 ha. | 16590 | 26.6 |

Source: Benissad M.E., *Economie du developpement de l'Algerie, sous-developpement et socialisme*, Economica, Paris, 2nd edition, 1982, p.94.

While 2.9% of large landowners controlled 26.6% of the privately owned agricultural sector, 61.7% of small peasants (less than 10 hectares) had to survive on 22.6% of the land. Due to the colonisation process, these small peasants were however confined to less fertile lands and responded rationally to their peculiar environment by selling their labour force either to more affluent peasants or in non-agricultural activities in order to sustain their reproduction.

Added to 500,000 landless peasants, the 425,000 small peasants would therefore put pressure on non-agricultural activities which, because of the adopted growth strategy, could not adequately respond to this supply of labour force.

The rationality behind the so-called agrarian revolution would therefore stem from a number of premisses of which the most important could be synthesised as follows:

1. Due to the skewed distribution of the land, a large portion of the peasantry was excluded from the industrial market because of a lack of adequate income
2. While the small peasantry could not accumulate (because of its narrow material base), large landowners did not invest in agriculture but acted as rent collectors investing in non-agricultural activities
3. The stagnation of agricultural output since independence and the growing share of imported agricultural products in domestic consumption would create inflationary pressures and limit the impact of the oil rent upon the accumulation process

The agrarian revolution, then, sought to eliminate the negative impact of these premisses upon the industrialisation process. By arguing that the agrarian revolution aims first of all at modernising the agricultural sector by intervening as much on the size of the farms as on the techniques of production, Algerian policymakers assumed that a redistribution of land in favour of the small and landless peasants and at the expense of large landowners was all that was needed to move out of the crisis. Hence the "Charte de la revolution agraire (1971)" stated that "the modernisation of agriculture and a higher living standard in the rural world will widen the domestic market and favour the growth of industry. The creation of production units using modern methods of cultivation will increase demand towards chemical and mechanical industries. Finally the reorganisation and growth of agricultural output will develop around the production zones a whole network of processing industries".²

To the extent that the agricultural crisis was seen as a technical problem, the direct participation of the peasantry in its formulation was not required. Hence the agrarian revolution emerged through two phases³ which had successively been carried out by the state:

1. The first phase concerned the distribution of public land to small and landless peasants who were generally gathered into co-operatives
2. The second phase, however, dealt with large landed property and land owned by absentees

The result of the two phases carried out by the state bureaucracy can then be seen from the table below.

Table VII:2 Redistribution of land under the agrarian revolution

| | No. of beneficiaries | No. of co-operatives | Area (ha.) |
|------|----------------------|----------------------|------------|
| 1973 | 46,910 | 2,600 | 630,000 |
| 1975 | 78,700 | 4,903 | 894,000 |
| 1977 | 83,606 | 5,859 | 1,119,054 |
| 1980 | 97,955 | 6,029 | 1,337,815 |

Source: 1973 and 1975, Benhouria T., *l'economie de l'Algerie, Maspero*, Paris, 1980, p. 201.

1977, SEP, DSCN, *L'Algerie en quelques chiffres Alger*, 1978.

1980, Commission nationale de la R.A. (22.5.80) quoted in Bedrani S., *L'Agriculture algerienne depuis 1966*, OPU, Alger 1981, p.397.

By 1980, 97955 small and landless peasants were involved in the agrarian revolution sector which covered 1337815 hectares. While the latter figure approached the total amount of land recouped by the state (which amounted to 1463499 hectares)⁴ the first figure (number of beneficiaries) fell far short of

the magnitude of the set of small and landless peasants (more than one million).

Thus despite the agrarian revolution the bulk of the peasantry would continue playing the role it had been confined to since the colonial era, i.e. a reserve army that would be called upon when needed either in the agricultural sphere (as seasonal labour force) or in non-agricultural activities.

The agrarian revolution did not therefore tackle the problem of unemployment which could become more acute in view of the capital intensive industrialisation process taking place within the Algerian scene. Its main objective, however, was a rationalisation of the agricultural sector, in the sense that a market for industrial commodities had to emerge with an effective demand deriving from the restructuring of the agricultural sphere.

That restructuring on the other hand was to imply a higher productivity hence a higher level of output, that would reduce the impact of food imports on the accumulation process financed by the oil rent.

2. The performances of the agricultural sector

Despite the use of the phrase "agrarian revolution" for characterising the state's actions towards the agricultural sector from 1971 onwards, the actual restructuring of the sector concerned touched upon a small portion of the latter. In fact, whereas the privately owned part had hardly been transformed, the "self-managed" sector was not affected at all, although it had been in a state of gradual decline since independence (see Part AII.2.1). Finally, a large part of the agrarian revolution sector covered infertile land that could hardly respond to the objectives of increasing the level of output.⁵

In this context the agricultural sector of post-independence Algeria actually retained ... the same physical structure as it had been during the colonial era (See Appendix VII.1). The constant and important share of fallow land from the end of the colonial era to 1977 may, then, point to a state of under-equipment both in terms of means of production and intermediary products (fertilisers in particular).

The fact that the physical structure of the agricultural sector had not been changed by the agrarian revolution suggests that the impact of the latter on production and productivity of labour within the agricultural sector would be insignificant unless the portion of the agricultural sector which was actually cultivated witnessed a high productivity of labour. The high productivity of labour could then compensate for the lack of new cultivated land. The actual level of agricultural output would not however militate in favour of the previous argument.

Table VII.3: Agricultural output, 1963-1980 (1000 quintals)

| Year | Hard wheat | Soft wheat | Dry veg. | Vegetables | Citrus fruits |
|---------|------------|------------|----------|------------|---------------|
| 1963-64 | 12280 | 3215 | 390 | 6105 | 4836 |
| 1967-68 | 10630 | 4707 | 439 | 7088 | 4316 |
| 1972-73 | 6985 | 4595 | 416 | 9304 | 5071 |
| 1974-75 | 11810 | 6668 | 744 | 12473 | 5000 |
| 1978-79 | 7104 | 3725 | 532 | 11669 | 4550 |
| 1979-80 | 8892 | 5640 | 522 | 11990 | 3600 |

Source: Benissad M.E. *op. cit.* p.106.

The fluctuations in the level of output of different products over the years suggest the non-mastering of the production process in the agricultural scene on the one hand, and the high impact of natural conditions as explanatory variables on the other hand.

Despite a better mechanisation and greater use of fertilisers, the yield per hectare of different products could not even reach the level experienced during the colonial era (see Appendix VII.2). The overall picture of the agricultural scene had in fact been marked by either stagnation or decline. In this instance the fast growing population (which doubled between 1962 and 1980) could only be fed by importing foodstuffs with revenues derived from hydrocarbon exports. In this instance the ratio of agricultural exports to agricultural imports witnessed a gradual decline from independence onward, with no sign of a change in direction.

Table VII.4: Algeria International Trade in agricultural products
(Million dinars)

| | Import | Export | Export/Import (%) |
|---------|--------|--------|-------------------|
| 1963 | 766 | 1151 | 150 |
| 1966 | 713 | 931 | 131 |
| 1967-69 | 731 | 717 | 98 |
| 1970-73 | 925 | 736 | 80 |
| 1974-77 | 4049 | 612 | 15 |
| 1978 | 5028 | 584 | 12 |
| 1979 | 5174 | 467 | 9 |
| 1980 | 7781 | 496 | 6 |

Source: 1963: Benissad, M.E., *op. cit.*, pp.189, 191
 1966-1973: SEP, *Annuaire Statistiques de l'Algérie 1970-1975*
 1974-1977: SEP, *Statistiques du Commerce Extérieur, 1977*.
 1978-1980: MPAT, *L'Algérie en Quelques Chiffres, 1982*.

Whereas, up to 1969, the agricultural sphere was self-sufficient in terms of foreign currency earnings, by 1974, 85% of agricultural imports had to be paid by means other than via agricultural exports. Furthermore, whereas Algeria imported a yearly average of 618.4 thousand tons of cereals (index 100) for the period 1967-69, it imported a yearly average of 1642.6 thousand tons (index 265) for the period 1974-77 and 1952 thousand tons (index 316) for the year 1980. An identical trend had been present for all agricultural products (Appendix VII.3).

In this context the burden of food imports on the balance of trade could only be faced by using hydrocarbon exports as a financing means since the latter had constituted the bulk of Algerian exports since independence.

Imports in general and agricultural imports in particular witnessed a stagnation, then a slight increase from 1963 to 1973. The year 1974, however, constituted a turning point vis à vis the Algerian imports policy (food imports jumped from 1042 million in 1973 to 3507 million dinars in 1974).⁶

At first sight, the decline (if not the stagnation) of the domestic agricultural sector may, apparently, be explained in terms of the Dutch disease discourse. The latter would argue that the resource boom (a higher share of the oil rent appropriated by the Algerian state) resulted in de-agriculturation. However the premisses upon which Dutch disease economics develops the argument of de-agriculturation does not hold for the Algerian scene. For within the Dutch disease model (Part A.I.4) de-agriculturation would emerge if the agricultural sector belonged to the traded good sector. In the Algerian context agricultural output was mainly directed towards the domestic market.

Hence the agricultural sector would rather qualify as a non-traded good sector and should thrive under a resource boom. What seems to have stopped the Algerian agricultural sector from behaving like the non-traded good sector of the Dutch disease model can only be the Algerian state's policy of administrative prices for the major component of agricultural output. Under these circumstances and despite an increase in demand for agricultural products (as a consequence of the spending effect) the prices, set artificially low by the administration, hampered a potential resource movement effect but responded to the state's policy of keeping wages down (thus favouring the industrial sector) and limiting the social tensions which may have risen because of high food prices.

The 1974 oil crisis would then give the Algerian state not only the possibility of speeding up the accumulation process but would constitute a means (for the Algerian state) to stick to a policy of low food prices (despite an excess demand with respect to domestic output), fill in the agricultural deficit and finally avoid the question of a radical transformation of the agricultural sphere. Thus, by 1980, the quantity of imported cereals amounted to 24 million quintals which represented 138% of domestic output produced that year".⁶

In this context the oil rent contributed indirectly to the continuation of the agricultural crisis and, in so doing, hindered achieving the claimed goal of building an independent and national economy.

This use of the oil rent could, in this instance, be interpreted as the easiest (in terms of social and political costs) means in confronting the crisis in Algerian agriculture. Although usually analysed as a deficit problem with

respect to cereal demand on a national scale, the crisis may to some extent be rooted outside the economic sphere but within the political scene.

3. The crisis of agriculture and the peasantry strategy

At the quantitative level, the crisis in agriculture could be understood as the sector's inability to feed the Algerian population in general and the urban population in particular.

In the context of building an independent and national economy, however, this particular dependency on the world market could:

1. Jeopardise the Algerian state's will to implement a growth strategy which was (at least officially) opposed to the prevailing international division of labour
2. Affect the rate of investment by diverting a substantial portion of the oil rent towards final consumption (through imports of foodstuff)
3. Accentuate the magnitude of rural exodus which would create economic and social tensions in both rural and urban areas

In this instance the growth strategy adopted by the Algerian state had not responded to the agricultural sector's need for an appropriate investment programme (see Part C.IX.3). On the other hand, the state's lack of policy regarding the agricultural sphere in general and the privately owned part of it in particular, brought about an almost complete demobilisation of the peasantry with its different components:

- The emphasis in the official discourse and in the investment policy on the state sector implicitly assumed that the privately owned agricultural sector

had no opportunity to accumulate and expand

- The agrarian proletariat and the reserve army (see section 1 above), on the other hand, had no material base and did not receive any incentive (from the state) to provide their livelihood

At a high level of abstraction the behaviour of these two social groups on the one hand, and the state strategy on the other, could explain the state of the agricultural sector.

The first social group which could be called the agrarian bourgeoisie ⁷, has actually remained outside the market of means of production controlled by the state. The latter had as a main target the state sector, which received the bulk of the agricultural equipment ⁸.

The state's credit policy, on the other hand, brought about a distinction within the agrarian bourgeoisie (between large and small landowners). Whereas large landowners could receive loans from the banks and buy equipment, small landowners were not considered as worth lending money to. To that extent the depreciation of agricultural labour on a national scale (which stemmed from the emphasis on industrial development) pushed large and small landowners into developing appropriate counter-strategies. This behaviour may be qualified as rational from the viewpoint of the landowners but irrational within the state's growth strategy.

Due to a lack of agricultural equipment within the private sector, large landowners gradually moved away from the productive sphere to invade the

service sector thereby limiting (by their move) the increase in the agricultural output on their own land. Finally because of the state's control over cereal prices, both large and small landowners had no incentives to continue producing wheat (the basic produce in the Algerian diet), but were forced to invest in vegetables (table VII.3), the output of which went to urban middle and upper classes who would pay non-controlled prices.

The privately owned part of the agricultural sector then became more and more involved in speculative activities (taking advantage of the discrepancy between supply and demand for certain products) and less and less in productive labour which was less rewarding within the Algerian context.

The agrarian workers, on the other hand, although objectively divided in two social groups (depending on whether they relate to the state sector or the private one) nevertheless faced the same fate within the domestic economy.

Since independence, agricultural workers in state farms faced relatively lower wages than their counterparts in other activities.

Table VII:5 Evolution of the daily minimum wage in agriculture and industry (Dinar/day)

| Year | Wage in agriculture | Wage in Industry |
|--------|---------------------|------------------|
| 1961 | 7.06 | 9.66 |
| 1970 | 7.54 | 10.88 |
| 1972 | 9.80 | 13.84 |
| 1974 | 12.25 | 16.64 |
| 1976 | 15.30 | 19.20 |
| 1978 | 24.00 | 33.68 |
| 1980 * | 33.00 | 33.68 |

Source: 1961-1974, Bedrani S., *op. cit.* p. 131
 1976-1980, M.P.A.T., *L'Algerie en Quelques chiffres Alger ed 1982*.

* in an attempt to reverse the trend of rural exodus, the minimum wage in agriculture was equated with its counterpart in industry.

Confronting lower wages, the state sector workers, deprived of any autonomous organisation (which would defend their interests) had no alternative but to expand their working hours and (or) hire members of their families as seasonal workers. The magnitude of the output however was not affected since neither total output nor the yield per hectare had actually improved since independence.⁹

The workers of the state sector then responded to their lack of autonomy vis à vis the state's institutions by acting as rentiers waiting for a monthly wage bill, the magnitude of which bore no relation to the output generated within state farms.

- Workers of the private sector, on the other hand, faced lower wages than workers of the state sector, for no minimum wage could be guaranteed to

them.

Although no statistical data on their income are available,¹⁰ the existence of around one million occasional workers and the magnitude of rural exodus (5% per year for the 1970s decade)¹¹ suggest that downward pressures on the wage rate of workers in the private sector must have been substantial.

Furthermore, the emphasis on industrial development (since 1967) accentuated the mobility of the agricultural labour force (in particular the qualified one) towards urban areas and resulted in:

- A hypertrophy of the urban areas which could not be fed by an agricultural sector in decline
- An increase in the average age of agricultural workers as the younger workers had fled the countryside
- A contempt on the part of the rural population towards agricultural labour which was seen as degrading when compared to industrial and service activities

The agricultural sector's decline therefore seemed at first sight to stem from a lack of commitment on the part of the Algerian state to allocate an appropriate amount of investment to that sector.

The crisis of Algerian agriculture could not however be confined to a technical problem (lack of resources) but may be interpreted as a direct consequence of the state's conception (mis-conception to be precise) of the peasantry as a homogenous social class.

On the side of the state sector, the thorough control (upstream and downstream) over the state farms was coupled with a heavy rhetoric about self-management and workers' control over the labour process. These two contradictory aspects actually resulted in the "transformation" of the workers of the state's sector into state rentiers with no motivation for increasing output.

On the side of the private sector, the large landowners who benefited from bank credits and equipment loans from the state pulled out of the productive sphere and entered the low-risk area of the services.¹² Finally small landowners supplemented their agricultural income by revenues generated through non-agricultural activities.¹²

In this context the crisis of Algerian agriculture could be comprehended as a direct response of the peasantry (in its different components) to its own crisis, the latter being the result of state policy (the root of the crisis could nevertheless be traced to the colonial era).

This state policy did not however lead to an explosive situation thanks to the oil rent which constituted the means by which imports of foodstuffs (cereals in particular) was made possible, and questions about the nature of the state's social project could be left aside.

4. The agricultural sector crisis and the oil rent

Although the particular use of the oil rent by the Algerian state contributed to a deepening of the agricultural crisis, the latter actually emerged as a consequence of the French government's colonial policy towards Algeria (especially during the 1950s). In this context the reconstruction of the French

economy on the one hand, and the radicalisation of the Algerian struggle for independence¹³ on the other, imposed a new strategy on Metropolitan France.

In order to decrease the discontent of the Algerian population and open up the Algerian market to French industrialists, the French government set up a development programme, the basic feature of which would be constituted by a more important involvement of the French metropolitan authorities within the Algerian scene (see Part A.II.1.4).

From 1954 onwards the involvement of French metropolitan capital became substantial and responded to three fundamental aspects which had characterised the Algerian scene:

- The year 1954 witnessed the start of the independence war which the French government fought (aside from the use of guns) by trying to bring about the emergence of a third force (through some kind of development) which would oppose the FLN's call for independence.

The third force, in this context, would take shape in the form of a hypertrophy of the service sector which represented 47% of GDP by 1958.¹⁴

- The discovery of gas and oil in the same year as the beginning of the war required a new strategy on the part of the French government which had to involve itself in the oil industry in order to prevent the major oil companies from controlling this new source of supply and to secure controllable flows of oil to Metropolitan France.¹⁵

- Since an increase in the level of taxation on the Algerian population was neither economically nor politically feasible, the French government adopted the unique option of financing the Algerian economic growth by using

French taxpayers' money.

However, while responding to the French state's long term interests, the adopted policy constituted the essential premiss which would shape the future of post-independence Algeria.

In this context the flow of money capital from an external source, and with no productive labour counterpart within the Algerian scene, imposed a trend which would develop after Algeria gained its independence in 1962:

- At the economic level, the consumption pattern of the dominant social groups would reach a standard unrelated to the level of the forces of production existing within the Algerian economy.

- At the political level, on the other hand, the external flow of capital would bring about the emergence of a middle class taking the form of a relative hypertrophy of the service sector (in particular the state administration¹⁶), the size of which would bear no relation to the performances of the productive spheres (industry and agriculture).

It is, then, upon these colonial features that the Algerian state seemed to have based its so-called strategy of building an independent and national economy.

The Algerian state's use of the oil rent would therefore represent a linear continuation of the French colonial power policy with much more emphasis on the injection of money capital (the oil rent) into the Algerian economy. In the context of post-independence Algeria, the oil rent had actually replaced the

flow of money capital from Metropolitan France without calling into question the structural features of pre-independence (colonial) Algeria.

In the case of the agricultural sector, the peculiar use of the oil rent actually reinforced the trend which emerged during the 1950s under the colonial rule. Two main features would then be emphasised.

1. The appropriation of the oil rent by the Algerian state allowed it to develop the industrial and service sector independently of the performances of the agricultural sector.

The emphasis on the former sectors (industry and service), however, meant as a consequence the decline of the agricultural sector in both its parts (state and private land):

- Concerning the state's sector, the discrepancy in the levels of income between agricultural workers and industrial and service workers resulted in a demobilisation of the former which were indirectly pushed aside from the adopted growth strategy.

The state's focus on the state sector (as opposed to the private one), despite its decline, could however be grasped as a highly political act in the sense that the very existence of the former (the state sector) required state intervention in the agricultural sector and justified the magnitude of the state bureaucracy surrounding it.

In view of the performances of the agricultural sector, however, the state bureaucracy¹⁷ existed only insofar as it was paid by the oil rent. Furthermore the institutional structure, within which the state sector had been inserted,

constituted one of the main obstacles facing an improvement of productivity and production (see section 3 above). In this instance, the oil rent, by allowing the existence of state institutions controlling the agricultural sector, hindered greater involvement of the direct producers in the running of their farms.

- The state's lack of policy towards the private sector, therefore, pushed it towards adopting strategies which were opposed to the goal of the official growth strategy.

Thus, instead of intensifying cereal production in order to lessen the burden of food imports on the trade balance, the private sector adopted two complementary strategies:

- * Part of it (large landowners) pulled out of the agriculture sphere and invested in the service sector.
- * The rest oriented the production pattern towards produces ,the price of which were not controlled by the state.

The two strategies, mentioned above, would be characterised as speculative activities that stemmed from the fact that the private agricultural sector had no space within the adopted growth strategy. In this instance the non-development of the agricultural sector as a whole constituted a feasible path only inasmuch as the oil rent could be used to overcome the economic and social tensions that had to occur within the Algerian scene.

2. The second feature which evolved within the adopted growth strategy materialised in the form of more absorption of industrial commodities (means of production and intermediary products) by the agricultural sector. This sector

had, however, been witnessing a high level of unemployment and under-employment¹⁸ that could only be increased by the state's policy of mechanisation.

This mechanisation had actually been made possible only inasmuch as the appropriation of the oil rent by the Algerian state sustained the injection of industrial products into the agricultural sector and inhibited the search for alternative production systems. The latter would however have required questioning the structural features of the agricultural sector (land ownership and relations between the state, the state and private sector).

The lack of support from the peasantry (section 3 above) for the imposed state policy would then result in a stagnation of agricultural output, the negative effects of which would nevertheless be minimised by imports of foodstuffs (see section 2 above) financed by the oil rent.

Within this framework the oil rent and its particular use by the Algerian state could, then, be interpreted as a straightforward continuation of the 1950s' colonial policy which sought to develop the Algerian economy without the active participation of the Algerian population.

The oil rent appropriated by the Algerian state seemed therefore to have served as a basis, not for the growth of the domestic economy, but for the spread of the domination of the state administration which controlled a source of income (the oil rent) beyond the reach of the productive sphere.

The "autonomous" life of the service sector (and the state administration in particular) would actually generate the ideology of the rentier upon the whole Algerian social formation and inverse the traditional value of labour being the source of wealth into the current dominant value of a thorough contempt for productive labour.

The rentier mentality would not be confined to the agricultural sphere but became an integral part of the process of implementing the industrial base and may partly explain the lack of performance of the latter.

NOTES

1. Benissad, M.E. (1982) *Economie du développement de l'Algérie, sous-développement et socialisme*, *Economica*, 2nd edition, Paris, p.95.
2. Charte de la Révolution Agraire, MARA, *Revue Algérienne, (RASJEP)*, No. 1, Mars, p.196.
3. A third phase was to concern the limitation of the size of the livestock privately owned, but its implementation does not seem to have actually happened.
4. Bedrani, S. (1981) *L'Agriculture Algérienne depuis 1966*, OPU, Alger, p.397.
5. Before being limited, large landlords had the opportunity to give up the parcel of their choice; they would obviously keep the best land for themselves.
6. Bedrani, S. 1983, *L'Agriculture Algérienne Face Au Marche Mondial*, in *Les Politiques Agraires...*, *op. cit.* p.78.
- 6'. Molina, J. (1983) La politique agraire: intégration inter-sectorielle et évolutions structurelles, in *Les Politiques Agraires en Algérie, vers l'Autonomie ou la Dépendance?* CREA, Alger, p.306.
7. The agrarian bourgeoisie is, however, differentiated to the extent that large and small landowners do not necessarily have the same strategy.
8. Bourenane, N. (1983) Les causes structurelles de la crise de l'agriculture algérienne, in *Les Politiques Agraires... op.cit.*, p.153.
9. The yield in cereal cultivation dropped from 8.1 q/ha in 1967-69 to 8.0 in 1978-80 and in vegetables from 71.3 q/ha to 44.8 p/ha.
10. In some areas, workers are paid in kind.
11. Benissad, M.E. *op. cit.*, p.291.
12. Benachenhou, A. (1983) Rente minière et développement agricole, in *Les Politiques Agraires... op. cit.*, p.8.
13. In 1945, clashes between the Algerian population and the French Army resulted in thousands of Algerian deaths (45,000, according to Algerian sources).
14. Molina, J. *op. cit.*, p.356.
15. Investment in the hydrocarbons industry amounted to 8.5% of total investment in 1954 and reached 40% in 1959.
16. Molina, J. *op. cit.*, p.361.

17. Various institutions with overlapping prerogatives surrounded the agricultural sector: OFLA, OAIC, CAPCS, COFEL, SEMPAC.

18. The rate of under-employment had been estimated at 63% in 1976-77.

CHAPTER VIII

INDUSTRIALISATION AND THE OIL RENT

The adoption by Algerian policymakers of the theoretical framework developed by De Bernis and Amin, while stemming from an apparent rejection of the colonial features of the Algerian economy, assumed the possibility of implementing a complete productive system. The latter would be defined as the one which would minimise the dependency of the Algerian economy vis à vis the world market.

The accumulation process which would realise the independent and national economy was to require, as a first priority, the implementation of heavy industries which would motivate the creation of downstream activities (thus "blackening" the inter-sectoral matrix).

Implementation of heavy industries would, however, require imports of means of production as a starting point in the accumulation process. In the Algerian context, exports of hydrocarbons was to be the essential means by which the Algerian growth strategy would be realised. Even though presented as temporary, the opening of the Algerian economy to the world market (both in terms of exports and imports) may, nevertheless, face constraints which were not explicit in the official discourse; in particular:

- The contradictions between the spread of capitalist social relations (due to the Algerian economy's integration into the world market) and the socialistic rhetoric developed by the state ideological apparatus and
- The likely relationship between Algerian policymakers' apparent will to

implement an introverted economy and the process of internationalisation of capital supported by transnational firms.

In this framework, the Algerian growth strategy's success and the consequent state social project seem, at first sight, to be intimately tied to the magnitude of the oil rent appropriated by the Algerian state.

1. On the implantation of the industrial productive base

Since the financing of the Algerian growth strategy has been based on hydrocarbon exports, the reduction in the magnitude of the oil rent appropriated by the Algerian state during the present decade may certainly call into question the rationale behind the adopted strategy and require a rethinking of the 1970s investment policy (Part A, ch. III).

With the magnitude of the oil rent appropriated by the Algerian state during the 1970s, any growth strategy could have been implemented: exports of hydrocarbons and the difference between their actual cost of production and their price on a world scale (the oil rent) may be used to hide any inefficient policy. Thus the 1970s offered no ground for testing the viability of the Algerian growth strategy.

On the contrary, the 1980s may constitute an appropriate historical period for assessing the growth path chosen and implemented by Algerian policymakers. In the Algerian context, the building of an independent and national economy assumed a gradual withdrawal from the world market through the implementation of an integrated productive system.

The latter would reduce the dependency of the Algerian economy by internalising the conditions of the production of:

- The subjective element (labour force) and
- The objective element (means of production) of the labour process

In view of the performances of the agricultural sector and the share of foodstuffs in total imports (ch. VIII), the reproduction of the subjective element of the labour process had actually been based on imports financed by the oil rent. In terms of the basic goal of the Algerian growth strategy, the incapacity of the Algerian economy to feed its own population would stem from the Algerian policymakers' failure to implement the conditions for an autonomous reproduction of the Algerian labour force, and, more generally, the Algerian population.

The existence of the oil rent would, however, allow the Algerian state to disregard the agricultural sector and avoid the question of a radical restructuring of that sector. On the other hand, the conditions for an autonomous reproduction of the objective element of the labour process may not be realised unless the technology imported to implement the productive apparatus could be mastered, then reproduced internally, by Algerian technicians.

Implementing an autonomous productive system upon imports of technology controlled by transnational firms, then, constituted a contradiction, the overcoming of which would necessitate a dynamic consumption of that technology.¹

Having rejected direct foreign investment, Algerian policymakers sought formulas whereby transnational firms were excluded from direct ownership as such, but were called upon to realise plants and complexes for Algerian domestic firms.

For the planned period 1967-1977, three basic formulas linking Algerian domestic firms to foreign operators emerged, with different weights at the beginning and at the end of the period.

Table VIII.1: Types of contracts with foreign firms (1967-1977)

| Industry | Formula | | | Decomposed | | | Turn key | | | Product in hand | | |
|--------------------|---------|----|----|------------|----|----|----------|---|----|-----------------|---|---|
| | A* | B* | C* | A | B | C | A | B | C | A | B | C |
| Hydrocarbons | 10 | 10 | 3 | 4 | 18 | 24 | 0 | 0 | 1 | | | |
| E.M.S.I. ** | 14 | 18 | 13 | 1 | 6 | 5 | 0 | 1 | 7 | | | |
| Building Mat. | 0 | 9 | 2 | 1 | 3 | 12 | 0 | 0 | 2 | | | |
| Chemical | 5 | 2 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | | | |
| Mining, Energy | 17 | 10 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Light industry *** | 18 | 16 | 7 | 0 | 0 | 11 | 0 | 0 | 6 | | | |
| Total | 64 | 65 | 37 | 6 | 27 | 58 | 0 | 1 | 16 | | | |

Source: YACHIR F., *Technologie et industrialisation en Afrique, O.P.U., Alger 1983, p. 326.*

* A, B and C, first plan (67-69), Second plan (70-73) and third plan (74-77)

** Electrical, mechanical and steelwork industries.

*** Textile, food and wood industries.

The gradual decline of the number of decomposed contracts and the increase in the number of turnkey and "product in hand" contracts constitute the most noticeable trend emerging from the above table.

The transition from the first to the second plan does not, however, appear to be of the same nature as the transition from the second to the third plan. Whereas the first transition witnessed a higher number of turnkey contracts, the number of decomposed contracts remained of the same magnitude.

The second transition, however, saw a fall in the number of decomposed contracts but an important increase in the number of turnkey and product in hand contracts. Thus, whereas the first transition stressed the fact that domestic means of conception and realisation (being fully stretched) had to be complemented by foreign intervention in order to realise the second plan (1970-73), the second transition suggest a non-capitalisation of know-how during the previous period and a greater involvement of transnational firms in the transformation of the Algerian scene (hence a withdrawal of domestic firms).

These particular features of the second transition can only impede the emergence of domestic skill that would gradually replace foreign operators. Although the implementation of some industries (petrochemical, mechanical and electrical industries in particular) may have required the use of turnkey and product in hand contracts, the emergence of the latter in the light industries (food and textile in particular) cannot be explained in terms of the complexity of the processes.

Indeed, if for the first group of industries the complexity of the processes involved, and the degree of their monopolisation and homogenisation on a world scale, left no other choice (for Algerian policymakers) than turnkey and

product in hand contracts, the second group of industries, having already existed in the Algerian scene and being less subject to monopolisation, could have been implemented with more involvement on the part of domestic firms.

The transition from decomposed contracts supervised by a domestic firm to turnkey and product in hand contracts entirely controlled by a foreign operator seems to stem from two basic features: 1) the lack of national policy towards the problem of imported technology² and 2) the financial ease which stemmed from the oil crisis of 1974.

The first feature resulted in non-controlled (by the Ministry of Planning) decisions taken by individual domestic firms which imported technologies without reference to the productive system as a whole. This situation led to highly integrated plants (Appendix VIII.1) characterised by an autonomy with respect to the domestic productive system but highly dependent on the services of the foreign conceiver or builder.³

In this context each domestic firm used specific means of production and devices, the specifications of which were completely alien to other domestic firms. Thus, the reproduction of each domestic firm's productive structure required a constant link with a foreign operator but no tangible relationship with other domestic firms.

If the first feature resulted in the implementation of autonomous (from the rest of the economy) industrial complexes which could not motivate the creation and development of upstream or downstream activities (thus favouring a process of learning by doing), the second feature emphasised the

autonomisation process which stemmed from the first one.

The second transition (from the 2nd to the 3rd plan) actually emerged at the same historical period as the oil crisis, which allowed the oil exporting states to appropriate a higher share of the oil rent. In the case of Algeria the oil crisis allowed Algerian policymakers to revalue the 3rd plan investment programme which jumped from 54 billions to 110 billions dinars.⁴

That jump, however, could only be realised through a greater involvement of transnational firms within the Algerian scene. The financial ease confronting Algerian policy makers, then, emphasised the autonomy of individual domestic firms which, instead of checking the domestic market as a first step, tended to rely heavily on transnational firms for the implementation of their particular productive base.

In this framework, the appropriation by the Algerian state of a higher share of the oil rent inhibited the search for domestic alternatives to formulas (turnkey and product in hand) which left no room for the Algerian labour force to confront (in order to master) the process of implementing the domestic industrial base. By the end of the 1970s the latter emerged as a set of autonomous industrial plants, the reproduction of which depended entirely on imports while their contribution to new industrial investment would only qualify as marginal.

Table VIII.2: Estimation of the contribution of domestic output to new industrial realisations (1978)

| Category | Origin of Resources | |
|----------------------|---------------------|-------------------|
| | Import (%) | Domestic output % |
| Engineering Studies | 70 | 30 |
| Mechanical equipment | 90 | 10 |
| Electrical equipment | 90 | 10 |
| Frame | 80 | 20 |

Source: Thierry S.P. Les biens d'equipement dans l'industrie algerienne, seminaire du Crea Oran, Mai 1979, p.12.

The high degree of integration of each individual project, while impeding an inter-sectoral integration, could not favour technological exchange among domestic firms. Having been excluded from the engineering and realisation processes of their own projects, the Algerian firms could neither comprehend nor memorize the rationality of their own productive apparatus. Thus the reproduction of their own means of production (the objective elements of the labour process) could not be internalised. On the contrary, the formulas adopted by the Algerian firms insured the quasi-idleness of the Algerian labour force but favoured the involvement of transnational firms in shaping the Algerian productive system. The technology policies of Algerian firms seem then to have contradicted the claimed goal of the Algerian growth strategy.

The discourse advanced by the Algerian state did not however envisage the confinement of the domestic economy to this position (a non-integrated economy). On the contrary, the ultimate aim being the building of an independent and national economy, Algeria would not, according to the official

view, evolve towards a "banana republic".

The implementation of a set of industrialising industries would then be undertaken on the grounds that only these industries were capable (according to the official view) of transforming a disarticulated economy and filling in the inter-sectoral matrix. Thanks to the oil rent, an objective constraint (the required financial resources) could apparently be overcome.

Hence the implementation of De Bernis' model basically became dependent on the Algerian state's political will to carry out the process to its ultimate goal (the building of an independent and national economy). In this context the Algerian experience of the 1970s may be questioned at two levels: 1) the conformity of this experience with the theoretical model and 2) the theoretical pertinence of the model with respect to the Algerian conditions (political in particular).

2. The Algerian growth strategy and the integration of the economy

According to the De Bernis' model (Part A.I.5.2), within the set of industrialising industries, the "global sector" which produces means of production (industrial equipment, machine-tools, engines, etc.) appears as the industrialising agent par excellence. By favouring forward linkages with the rest of the economy, this sector would directly participate in the filling in of the inter-sectoral matrix. Its pre-eminence should then have emerged in the industrial investment structure which characterised the 1967-77 planned period.

Table VIII.3: Industrial investment spending (planned and actual)
1967-77 (10⁶ current dinars and %)

| Sectors | 1 st plan 1967-69 | | 2 nd plan (70-73) | | 3 rd plan (74-77) | |
|--------------------------------|------------------------------|------|------------------------------|-------|------------------------------|-------|
| | P | A | P | A | P | A |
| 1 Hydrocarbons | 42.6 | 51.1 | 37 | 47 | 40.6 | 48.6 |
| 2 Heavy industries | 40.7 | 32.3 | 42 | 36.1 | 45.6 | 38.4 |
| - Steel | 23.5 | 22 | 17.3 | 16.5 | 13.3 | 13.5 |
| - EMMI * | 3.9 | 1.6 | 11.6 | 8.8 | 14.1 | 10.1 |
| - Chemicals | 11.3 | 7.9 | 4.6 | 4.9 | 9 | 5.7 |
| - Building material | 2 | 0.8 | 8.5 | 5.9 | 9.2 | 9.1 |
| 3 Mining and Energy | 7.4 | 9 | 11.3 | 10.5 | 5.4 | 6.2 |
| 4 Light industries | 9.3 | 7.6 | 9.7 | 6.4 | 8.4 | 6.8 |
| Total (10 ⁶ dinars) | 5400 | 4890 | 12400 | 20820 | 4800 | 74150 |

Source: M.P.A.T. *Synthèse du Bilan de la Décennie 1967-78*, Alger, 1980, p.22.
Ecrément, M. *Indépendance Politique et Libération Economique*, OPU, Alger, 1984, p.81.

* Electrical, Mechanical, Metallurgy industries.

The set of heavy industries (which covers the global sector mentioned above) appears pre-eminent at the level of the drawing board (within the planned investment structure). However, the actual investment structure exhibits a distortion towards higher (than planned) investment in the hydrocarbon industry which seems to draw resources from all other sectors of the economy.

Importantly, the discrepancy between planned and actual investment in heavy industries does challenge the implementation of De Bernis' theoretical model. To the extent that these heavy industries were presented as having the potential to fill in the inter-sectoral matrix and bring about linkage effects, the loss of priority, which emerged in the actual investment structure, put a question mark on the relation between the actual Algerian experience and De Bernis' model.

Furthermore, within the set of heavy industries, steel industry held the major share of investment spending and was the least affected by the distortion in the investment structure. Insofar as the bulk of this industry's output was directed toward the hydrocarbon industry (tubes for pipelines and steel sheets for fuel tanks), its motivating effect on the rest of the economy becomes rather questionable.

The E.M.M. (Electrical, Mechanical and Metallurgy) industries, on the other hand, which encompassed the machine-tools industry, seem to have been the least favoured by the shift in the investment structure towards a higher share of the hydrocarbon industry in overall investment. The marginal share attributed to the E.M.M. industries, in planned investment and stressed within the actual investment structure, emerges as a paradox when it is related to the claimed objective of implementing an autonomous productive system.

This "paradoxical" situation does, however, indicate that the industrial productive base was dependent on the world market for its erection as well as its reproduction. Hence the Algerian productive system appears as the

"juxtaposition of a sector of valorisation of hydrocarbons and a sector of intermediary goods (steel, building material, energy)" ⁵. These two sectors did, however, evolve outside De Bernis' model to the extent that the quasi-non-existence of a sector producing means of production leaves the likelihood of its supposed snow-ball effect untested.

At a global level, then, the sector producing means of production appears to have been marginal whereas, in theory, it was to constitute the core of the Algerian growth strategy (by ensuring the reproduction of the objective elements of the labour process). The hydrocarbon sector, on the other hand, does not seem to have exhibited any of the virtues attached to the industrialising industries' concept. The implementation of this sector's base took place through imports of means of production and produced backward linkages outside the Algerian economy. Its output being mainly directed towards the world market, the emergence of forward linkages remains limited and becomes problematic when the industries (the fertiliser industry in particular) oriented toward the domestic market cannot operate at normal capacity (see Part A.III.2.3.).

While the investment structure does not support any substantial relation between De Bernis' model and the Algerian experience, the evolution of the input-output matrix does not show any clear trend towards integration of the economy.

Table VIII. 4: Gross output, import and export of industrial branches.

| Branches | | Gross Output 10 ⁶ dinars | Available resources * 10 ⁶ dinars | Import/AR | Export/AR |
|---------------------------|------|--|---|-----------|-----------|
| Hydrocarbons | 1969 | 3502 | 443 | 13.5 | 704 |
| | 1974 | 22879 | 4653 | 8.0 | 400 |
| | 1979 | 46900 | 11657 | 4.3 | 307 |
| ESMMI | 1969 | 1256 | 3576 | 68 | 3 |
| | 1974 | 2786 | 11575 | 78 | 2 |
| | 1979 | 8623 | 27962 | 69.6 | 0.5 |
| Chemicals and plastics | 1969 | 493 | 1061 | 56 | 2 |
| | 1974 | 1396 | 3420 | 62 | 2.5 |
| | 1979 | 2010 | 4602 | 59 | 2.5 |
| Building Material | 1969 | 310 | 381 | 19 | 2.6 |
| | 1974 | 510 | 1038 | 51 | - |
| | 1979 | 2158 | 2849 | 24.3 | - |
| Light Industries | 1969 | 5504 | 5930 | 21.5 | 1.4 |
| | 1974 | 9050 | 11803 | 24.6 | 1.3 |
| | 1972 | 21112 | 26592 | 20.8 | 0.2 |

Source: S.E.P., MPAT, *Tableaux Entrees - Sorties* 1969, 1974, 1979.

* Available resources (A.R.) - Gross output + (Import-Export).

Apart from the substantial increase in gross output of all branches and the major role of hydrocarbons in the export sector that the table exhibits, the striking feature which emerges from the latter, is the minor role played by the ESMM (Electrical, Steel, Metallurgy and Mechanical) and chemical industries in supplying the domestic market.

Imports, had then, apparently represented two thirds of the industrial equipment supplied to the domestic market for the years 1969, 1974 and 1979. Thus at first sight, one third had been supplied by the domestic industry. The weight of the steel industry (which does not appear in this aggregate figure)

which produced tubes and steel sheets would, however, inflate the magnitude of domestic output and cover the quasi-irrelevance of the domestic sector which produces means of production (as noticed from the investment structure).

The chemical industry, on the other hand, exhibits the same pattern as the ESMM industries. Imports had constituted the major supply source for the rest of the economy. Hence the core of De Bernis' model (1. a global sector producing means of production and 2. the chemical industry) does not seem to have been given priority despite the claimed goal of reaching an autonomous accumulation process.

While the Algerian experience does not seem to constitute the appropriate testing ground for De Bernis' model, the absence of the basic sector of the model, i.e. a sector producing means of production, may be related to three main causes:

The first cause appears as the spread of turnkey and product in hand contracts (Part C.VIII.1) which did not favour the emergence of a demand for domestically produced means of production.

The second cause, of the other hand, emerges as a lack of co-ordination among various domestic operators which dealt directly with the world market instead of at first investigating the domestic market.

Finally, the third cause relates to the strategy of international capital which tended to favour the development of export oriented industries (hydrocarbons in particular) through its willingness to accord credit facilities for the implementation of these particular industries. These three causes seem,

nevertheless, to be ultimately linked to the appropriation of the oil rent by the Algerian state and to the appropriate strategy of international capital to recoup most of it.

3. Industrialising industries, oil rent and the Algerian experience

In terms of the internationalisation of capital, the Algerian experience may constitute a remarkable example of transnational firms benefiting from an apparently nationalistic state which had rejected foreign ownership within its boundaries.

1. At the level of the implementation of the industrial base, delays in the realisation of projects had constantly been present.

Table VIII.5: Delays in the completion of projects engaged in 1973.

| Delay | 1 to 1.5 years | 2 to 2.5 years | 3 years | 4 years |
|-----------------|--|----------------------------------|------------------------------------|-------------------------------------|
| No. of projects | 8 | 7 | 4 | 2 |
| Branches | Steel, Metallurgy Electrical Construction | Steel Mechanical Construction | Metallurgy, Mech. Construction. | Electrical Mech. Construction |

Source: Yachir F., *op cit* . p.266.

Although all branches experienced delays, the latter seem more pronounced in those branches that relied heavily on turnkey and product in hand contracts (electrical and mechanical construction). Delays in these kinds of projects can only bring about a longer involvement of foreign firms and higher investment costs supported by Algerian firms.

2. At the macro-economic level, implementation of the three successive plans would cost 217.21 billion dinars instead of the anticipated cost of 66

billions.

3. Finally the productive apparatus which had been plagued by cost overruns could not even produce the level of output implied by the design.

Table VIII.6: Ratio of actual output to installed capacity (1978)

| Sector | Rate of utilisation % ¹ |
|----------------------------------|------------------------------------|
| Mining industry (Sonarem) | 56.67 |
| Steel industry (SNS) | 71.6 |
| Metallurgy industry (S.N. Metal) | 44.3 |
| Mechanical industry (Sonacome) | 59.2 |
| Electrical industry (Sonelec) | 59.2 |
| Hydrocarbon industry (Sontrach) | 55.5 |
| Light industries ² | 78.8 |

Source: Benachenhou A., *Planification et développement en Algérie*, GREA, Alger 1980, p. 61, 62, 63.

1. average for various plants

2. average for various branches.

The outcome of these three factors would emerge as a non-competitive industrial productive system which can neither envisage producing for the world market nor confront international competition in the domestic market.⁶

The non-competitiveness of the Algerian productive base would however benefit transnational firms to the extent that:

- Their technical assistance would be called for, hence the possibility of collecting more profits
- Algerian firms cannot compete in the world market, thus the

impossibility for them to disturb transnational firms market shares

- Finally, the Algerian accumulation process can only be supported by a continuous flow of hydrocarbon exports, hence ensuring transnational firms' in particular and international capital in general a supply of a strategic commodity

The appropriation of part of the oil rent (by the Algerian state) through the export of hydrocarbons thus made possible the implementation of a productive base, the inefficiency of which could be hidden by further export of hydrocarbons.

As in the case of agriculture, this particular use of the oil rent constituted a means of divorcing an (investment) decision from the economic consequences (profitability in particular) of that decision.

The oil rent, then, served:

- To finance the implementation of a productive system, the inefficiency of which pushed the Algerian economy towards a greater specialisation in hydrocarbon exports
- To finance the internationalisation of capital which took the shape of a flow of commodity sets (turnkey and product in hand plants) which, because of their particular form of penetration, had been supplied at monopoly prices and could not be reproduced internally

Specialisation in hydrocarbon exports and the lack of integration among domestic firms may signify that the building of an independent and national economy as a social project represented more of an ideological rhetoric (by

Algerian dominant social groups) than a palatable reality.

The magnitude of the oil rent during the 1970s coupled with the possibility of obtaining loans (guaranteed by hydrocarbon reserves) then sustained:

- At the economic level, the fiction of a possible withdrawal from the international division of labour
- At the political level, the spread of the populist ideology which negated internal class contradictions while emphasising the so-called anti-imperialist struggle

Thus, contrary to the claimed goal of implementing Amin's autocentred model, Algerian policymakers seemed to have produced neither that model nor the extroverted one. Indeed the only palatable connection that emerges from the Algerian scene is the one that relates the export sector (the hydrocarbon sector) to the rest of the economy. The latter can efficiently produce neither luxury goods (as in the extroverted model) nor mass-consumption goods (as in the autocentred model).

The autocentred model, however, required a necessary connection between a sector producing capital goods and a sector producing mass-consumption goods. This connection appears essential to the existence of an autonomous accumulation process whereby external relations become subject to the logic of the internal accumulation.⁷

The non-emergence of this connection in the Algerian accumulation process may, then, to a certain extent mean that the Algerian experience had

not been supported by an autonomous decision-making process. On the contrary, this process may have materialised a variant of the extroverted model with one special feature: the export oriented sector (hydrocarbons in this case) had generated a surplus profit (the oil rent) of such a magnitude that the connection between this sector and the rest of the economy could take any shape chosen by the operator (the Algerian state in this case) controlling the oil rent.

Thus, at variance with the extroverted model, where an export sector is connected with a luxury goods sector (hence materialising an articulation of various domestic sectors supporting and supported by a specific classes-alliance), in the Algerian case, the straightforward connection emerges as the one which links (but officially opposes) the export sector (hydrocarbons) with international capital. In this context the (Algerian) export sector provides international capital with hydrocarbons while transnational firms (the apparent form of international capital) provides the export sector in particular and the rest of the economy in general with the required commodities (for the reproduction of both elements of the labour process).

At first sight, the tight connection between the Algerian hydrocarbon sector and international capital suggests that the variant of the extroverted model implemented upon the Algerian scene would favour a greater insertion of the domestic economy into the world capitalist market. Within this context, the Algerian state (as the manager of the export sector) would have little autonomy and could not envisage the implementation of an independent and national economy. Hence the connection mentioned above would "normally" bring about a necessary alliance between international capital and the social

groups dominating the Algerian state.

The appropriation of a substantial share of the oil rent by the state would, however, give Algerian policymakers enough leeway to appear to be confronting international capital over Algeria's position within the international division of labour. Thus the existence of the oil rent would apparently allow the Algerian state to advance an "anti-imperialist" discourse while, at the same time, relying on international capital for the building of an autonomous (from international capital) or autocentred economy.

To overcome this paradox would nevertheless require, besides the objective condition, i.e. the oil rent, an essential ingredient: the political will (on the part of the state) to implement a social project which was to negate its very premisses (the necessary link with international capital).

The Algerian experience does not however exhibit any trend towards the emergence of an autonomous accumulation process. On the contrary, the Algerian economy has become more dependent (for the reproduction of both elements of the labour process) on the world market, and to that extent the Algerian state's claim of building an autocentred economy remains at the rhetorical stage.

Hence while Amin's autocentred economy still belongs to the future (if it ever emerges), De Bernis' model does not seem to have been implemented. The discrepancy between the social project advanced by the Algerian state and the actual Algerian experience ought, then, to be questioned as a first step, in terms of the pertinence of the concept of industrialising industries for the Algerian

social formation.

On a global scale, the implementation of De Bernis' model remains ultimately dependent on two basic conditions: 1) the first, i.e. that priority is given to heavy industries, stems from the assumption that these industries would motivate the filling in of the inter-sectoral matrix and bring about an autonomous accumulation process. Implementing the industrialising industries- productive base, however, requires imports of means of production. Thus, at the beginning, rather than limiting Algeria's dependency on the world market, these imports would translate into the so-called technology transfer and reinforce transnational firms involvement in the domestic economy. 2) To overcome this dilemma calls for the second condition, which emerges as the omnipotent role taken by the state. The latter would act as the main entrepreneur, ensure the mobilisation of funds (the oil rent in this case) and co-ordinate (at least in the abstract) the process of implementing an autocentred economy.

The requirement that the state be wholly involved in the economic sphere does, nevertheless, appear as less problematic than the first condition which involves a non-passive agent i.e. the transnational firm.

Under these circumstances, the first condition (the implementation of the industrialising industries-productive base) emerges as the one which may be used to test the realisation of De Bernis' model and to assess the Algerian state's involvement within the Algerian scene.

In view of the structural features of the investment programme as well as the input-output matrix (section 2 above), the core of De Bernis' model does not appear as a leading component. Hence the answer as to what impeded the emergence of that core (despite the existence of the oil rent) may partly reside in the Algerian state's understanding of the development process.

At first sight, De Bernis' model has some resemblance with the strategy Soviet policymakers implemented by the end of the 1920s. In both cases the stress is put on the development of heavy industries as a top priority. But whereas the Soviet policymakers' argument stems from a political will to master the "commanding heights" (the strategic sectors) of the economy and to reduce the effects of a clearly hostile environment (capitalist encirclement), De Bernis exhibits a model whereby the process of industrialisation appears to be determined and motivated by some types of industries with no particular regard to the social and political environment.

Hence, while in the Soviet case the political will and the class struggle aspects are emphasised, in the Algerian experience the dynamism of the social formation remains dependent on the virtue of the so-called industrialising industries. To that extent, De Bernis' model, as implemented in Algeria, exhibits the same economic view as the one developed by other seemingly opposite discourses (industrialisation by substitution of imports, and export led growth, in particular). While the latter put forward the role of the so-called market forces, the former develops the mechanistic argument about the inner dynamism of particular industries.

Within these various approaches, however, the particular internal conditions (the class structure especially) are not taken into account; and rather than being the outcome of conflicting interests among various social groups, industrialisation appears as a neutral process potentially beneficial to the whole society.

At the concrete level, however, the Algerian growth strategy seems to have missed its claimed goal of building an independent and national economy. Hence the feasibility of De Bernis' model (which is technically similar to the Soviet model) may reside, not in its internal logic (the snow-ball effect of the industrialising industries) but on political parameters reflecting the class nature of the state.

Under this assumption, the illusion developed by the state ideological apparatus (about the gradual implementation of an autocentred economy) would be explained by the existence (and its appropriation by the Algerian state) of the oil rent. The latter would, in the Algerian context, have been used to erect industrial segments without the political will to gradually separate their functioning from the dynamic of the capitalist system on a world scale.

Hence, apart from the lack of political will which must stem from internal conditions (ch. IX below), the non-implementation of De Bernis' model may be comprehended as the outcome of external pressures generated by the process of internationalisation of capital on a world scale.

4. Internationalisation of capital and the AGS

The growth strategy chosen by Algerian policymakers seemed to reflect at its beginning an opposition to the prevailing international division of labour in general and to the process of internationalisation of capital supported by transnational firms in particular.

The building of an integrated economy in essence contradicted the ideology of comparative advantage and apparently represented a challenge to the imposed international division of labour.

The path chosen by Algerian policymakers, however unorthodox, seemed to have anticipated a new type of international division of labour. The latter would emerge as a delocalisation of some segments and types of industries (steel and petrochemical) towards peripheral economies.

In this context, industrialisation of peripheral economies in general and of Algeria in particular, would be interpreted as a new stage in the relations between central and peripheral economies. This new stage would then be characterised by the centre's specialisation in engineering studies and new industrial activities (electronics, computers, etc.) and the periphery's industrialisation through implementation of obsolete industries.

The obsolescence of some industrial segments and the ascendancy of the development ideology over the ruling classes of peripheral countries had therefore been responsible for the redeployment of these segments towards the periphery. Hence delocalisation of industrial activities which used to be

concentrated in central economies, allowed transnational firms to sell their technology (and to experiment with it in the case of Algeria) and maintain a supply of primary products (in a more elaborate form) from the periphery.

Algerian policymakers seemed to have taken advantage of the delocalisation process in order to implement industrial activities. Their strategy (contrary to the official claim) could not (at its early stages) contradict the transnational firms' policies. On the contrary, both sides seemed to fulfil their aim: maximising profits and guaranteeing hydrocarbon supply on the one hand, implementing industrial activities on the other.

However, Algerian policymakers claimed aim of building an integrated economy went beyond transnational firms' strategy. Algeria's economic opening to the world market, from their viewpoint, constituted a temporary period and represented a necessity which could not be avoided. Implementation of particular industrial segments therefore, represented a possibility to utilise a new form of dependency (technological and financial) to create an integrated economy by a dynamic consumption of technology.

The integrated economy would, in these circumstances, emerge as a consequence of the snow-ball effects of these industrial segments which belong to the so-called industrialising industries.

Paradoxically these industrialising industries seem to be the ones that tend to be exported by transnational firms towards the periphery.⁸ The process of internationalisation of capital and the industrialisation process taking place in Algeria could, therefore, be understood, not as two contradictory aspects of the

same unity but as one aspect reflecting the process of capitalist development on a world scale.

This process seems to have been accentuated by the economic slowdown of the central economies during the 1970s. Thus, whereas the 1970s witnessed stagnating central economies, the opposite seemed to hold true for the peripheral economies which experienced an increase in the flow of foreign investment.

Table VIII. 7: Private foreign direct investment and bilateral portfolio investment flows from D.A.C. * countries to developing countries (U.S. \$ billion)

| Year | Private Foreign Current \$ | Direct investment (F.D.I.) Constant \$ ¹ | Bilateral Portfolio Investment (\$ current) |
|------|----------------------------|---|---|
| 1960 | 1.77 | 4.69 | 0.63 |
| 1962 | 1.49 | 3.78 | 0.15 |
| 1964 | 1.57 | 3.77 | 0.854 |
| 1966 | 2.17 | 4.90 | 0.48 |
| 1968 | 3.03 | 6.50 | 0.91 |
| 1970 | 3.69 | 7.11 | 0.70 |
| 1972 | 4.23 | 6.96 | 1.99 |
| 1974 | 1.10 | 1.40 | 3.81 |
| 1976 | 7.68 | 8.35 | 10.21 |
| 1978 | 11.26 | 9.65 | 21.05 |
| 1980 | 9.47 | 6.81 | 11.70 |

1: Calculated in 1977 dollars using the G.N.P. deflator

Source: OECD, DAC estimates, quoted from Oman C., *New forms of international investment in developing countries*, OECD, Paris 1984, p. 28

* D.A.C: Development Assistance Committee of OECD.

While increasing in absolute terms, foreign direct investment did not grow at the same rate as the flow of financial capital flowing towards peripheral economies. The 1970s then, witnessed a change of emphasis (on the part of international capital) from direct investment to portfolio investment which encompassed, along with traditional bank loans, new forms of investment such as joint ventures, licencing agreements and turnkey contracts. The emergence of these new forms of investment alongside foreign direct investment actually constituted a noticeable feature in the extractive industries (in particular the oil industry).

The growing importance of these new forms of investment during the 1970s could then be comprehended as the materialisation of a convergence of interest between two essential forces within the world capitalist system:

1. Transnational firms which had to respond appropriately to the economic slowdown that plagued the central economies during the 1970s and to the nationalistic rhetoric developed by some peripheral ruling classes during the same period.

2. Some peripheral ruling classes which would legitimise their power only insofar as they appear to control the accumulation process taking place within their respective social formation.

Depending on the internal conditions of the host country, transnational firms would engage in direct investment or adopt formulas which allowed some form of involvement on the part of the host country. Whether the host country's involvement constituted a second best alternative for transnational

firms, however, becomes irrelevant as long as the monopolistic control over technology is not called into question by the widening of its world market through diverse formulas.

Thus, whereas direct foreign investment does not seem to expose transnational firms to a loss of control over their activities, the new forms of investment may be comprehended as stemming from an updated and appropriate strategy on their part (the T.N.C.) to hinder the emergence of any non-controlled production process. Consequently, the new forms of investment, while responding to nationalistic attitudes on the part of some peripheral ruling classes would:

- Reject part (if not all) of the cost of a particular project on the host country's operators (public or private)
- Limit, for transnational firms, the financial risk of being nationalised
- Ensure, for the same firms, a market for a technology at the upstream level and create the conditions for an uninterrupted flow of commodities coming from the peripheral economies at the downstream level

The extreme case of transnational firms' apparent withdrawal from ownership of projects implemented in peripheral countries could be exemplified by OPEC countries in general and Algeria in particular (where turnkey and product in hand contracts have been widely used).

The withdrawal of transnational firms from ownership of plants implemented in Algeria may be apprehended as the second alternative (the first one being F.D.I.) left to them to widen the market for technology.

If turnkey and product in hand formulas exclude foreign control over domestic output, they do transfer to transnational firms (engineering firms in the Algerian case) the decision process over the choice of equipment and their combination in the production process.

That transfer of prerogatives could constitute the basis upon which transnational firms would create a captive market in terms of maintenance, renewal and extension of the installed productive apparatus. Furthermore, firms involved in the Algerian scene could charge monopoly prices to their Algerian customers without risking the loss of the market.¹⁰

In terms of financial returns, turnkey and product in hand formulas may then, be as rewarding for transnational firms as F.D.I. (Foreign Direct Investment). Moreover, these formulas may constitute the appropriate response of transnational firms to the emergence of nationalistic movements in peripheral countries and to the economic crisis that spread over the central economies in the 1970s:

- The withdrawal of transnational firms from direct ownership but their real control over the production processes implemented in peripheral economies would apparently, reduce their involvement to a technical level (the so-called transfer of technology) which stands as politically more acceptable to some peripheral ruling classes
- While ensuring export of equipment by transnational firms to peripheral countries, turnkey and product in hand projects do not need to be viable from the foreign operator's viewpoint. On the contrary, the less viable these projects are the more rewarding they become for the

transnational firms which can perpetuate their involvement in the peripheral economies concerned.

In this context the reluctance of transnational firms to commit themselves to entering joint ventures in "friendly" countries such as Saudi Arabia and Iran¹¹ (before 1979) could support the argument about the non-profitability of oil related industries (in particular the Petrochemical Industry) implemented in the oil exporting countries.

The 1973 oil crisis and the increase in the magnitude of the oil rent appropriated by the oil exporting states had furthermore allowed transnational oil firms to redefine their strategy towards the former:

- Firstly, the price increase would allow transnational oil firms to revalue their assets and claim higher compensation against their gradual nationalisation, secondly, the same event pushed the oil exporting states towards prevailing their development plans, hence opening up a wider market for transnational firms¹² and increasing their absorptive capacity (for fixed assets formation as well as the capacity to consume goods and services).

Table VIII.8: National expenditure of six capital surplus oil exporting countries* 1973-1978 (billion U.S. current dollars)

| | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | Average growth rate |
|--------------------------------|------|------|------|-------|-------|-------|---------------------|
| Total GDP | 50.9 | 84.4 | 95.4 | 117.1 | 132.9 | 138.9 | 22.2 |
| Non oil GDP | 14.6 | 22.5 | 31.5 | 42.2 | 53.5 | 63.6 | 34.2 |
| Investment | 5.8 | 11.7 | 20.2 | 26.4 | 35.1 | 41.1 | 47.2 |
| Consumption | 16.1 | 25.2 | 36.0 | 45.8 | 59.2 | 63.7 | 31.7 |
| Investment as % of Non oil GDP | 19.7 | 51.8 | 64.2 | 61.6 | 65.6 | 64.6 | - |
| Investment growth rate | - | 102 | 73 | 31 | 33 | 17 | - |

Source: World Bank estimates, quoted in *Development prospects of the capital surplus oil exporting countries*, World Bank Staff, working paper No. 483, August 1981, p.12. *Iraq, Kuwait, Libya, S. Arabia, Qatar, , UAE.

Thus, the accumulation process financed by the oil rent not only pushed the investment/GDP ratio in the non-oil economy to unprecedented records but was coupled by an important increase in consumption:

- The first aspect materialised the process of internationalisation of capital under the control of transnational firms and under the fictitious ownership of the states concerned

- The second aspect, on the other hand, would develop a consumption pattern which bore no relation to the state of the forces of production prevailing in these countries and would accentuate the features of a rentier economy depending on external resources to sustain its living standards

- Finally, the oil crisis permitted transnational oil firms to offset the increase in costs due to higher oil prices and excess capacity in central economies by exporting plants - refineries and petro chemical complexes and services rather than investing in obsolete industries. Furthermore, while the whole cost of particular projects had been supported by the host country

(thanks to the oil rent), their viability remains questionable insofar as they would compete with industries (situated in central economies) owned and controlled by the very transnational firms which implemented these projects

Consequently the viability of the projects implemented in the OPEC countries had been questioned, although the OPEC states benefited at the time (1970s) from an apparently comparative advantage (relatively low cost of feedstock).

The fall of the oil price in the present decade would then suppress any clear comparative advantage for the oil exporting states. The latter must, however, continue exporting hydrocarbons because the installed capacity cannot stay idle and some states must repay their debt. Hence contrary to De Bernis' presentation of his model, international capital (through its apparent form, the transnational firm) develops a counter-strategy towards those (some peripheral ruling classes) who would, apparently, try to call its hegemony into question.

Algeria's state as a mono-exporter of hydrocarbons and the non-emergence of an autonomous accumulation process would, then, reflect international capital's success in keeping the Algerian economy within the appropriate (for international capital) international division of labour.

Thus, as an external cause the strategy developed by international capital may (partly) explain the current state of the Algerian economy. However the failure of the Algerian state to move away from the apparently imposed international division of labour (despite the oil rent) may stem from an internal cause which belongs to the political sphere rather than the economic one. As such, the comprehension of the Algerian experience would ultimately depend on an analysis of the emergence of the Algerian state.

NOTES

1. The dynamic consumption of technology would emerge as: (1) mastering the imported technology; (2) reproducing it as a second step, and (3) innovating upon that technology.
2. Criticism developed by the new leading team (after President Boumédiène's death in 1978) in its analysis of the 1970s.
3. Sonatrach, for instance, refuses to buy some steel pipes produced by SNS because they do not meet (according to Sonatrach) international standards.
4. Benissad, M.E. *Economie du Développement de l'Algérie...op. cit.*, p.46.
5. Palloix, C. (1980) Industrialisation et financement lors des deux plans quadriennaux (1970-77), in *Revue Tiers-Monde*, Tome XXI, No. 83, Jui.-Sept., p.541.
6. The flow of imports being controlled by the state, domestic firms do not face any competition from the world market.
7. Amin, S. (1980) *Class and Nation, Historically and in the Current Crisis*, MPR, London, p.132.
8. Oman, C. (1984) *New Forms of International Investment in Developing Countries*, OECD, Paris, p.77.
9. Yachir, F. (1983) *Téchnologie et Industrialisation en Afrique*, OPU, Alger, p.257.
10. Yachir, F. *op. cit.*, p.268.
11. Turner, L. and Bedore, J.M. (1979) *Middle East Industrialisation: A Study of Saudi and Iranian Investments*, Saxon House, London, p.57.
12. In the case of Saudi Arabia and Iran see Turner, L. *op. cit.*, pp.7 and 26.

CHAPTER IX

THE ALGERIAN STATE'S SOCIAL PROJECT(S)

In 1954 the FLN (Front de Libération Nationale) proclaimed that:

"Our renovation movement presents itself under the name: Front de Libération Nationale, hence it moves away from all likely compromising and offers the opportunity for all parties and purely Algerian movements to join the liberation struggle without any other consideration."¹

By calling for independence with no other consideration, the FLN 1954 declaration ensured that the independence war would involve the majority of the Algerian population. To that extent, the principal contradiction emerged as the one that linked and opposed the indigenous population (grasped as a non-contradictory unity) to the French colonisers. Hence various Algerian political parties could take part in the war against the French without renouncing their essential political tendencies.

Under these circumstances the FLN, which emerged primarily from one party the MTLD (Movement pour le Triomphe des Libertés Démocratiques), enlarged its base through the rallying of other political parties. The widening of its base increased the quantitative strength of the FLN, but at the qualitative level, the FLN's discourse was reduced to a single slogan, calling for independence from France.

1. The emergence of the Algerian leadership

Since its foundation in 1926 (under the name of "Etoile Nord Africaine" - ENA -) the MTLD, as the main component of the FLN, had always vindicated independence

for Algeria. However, in view of the colonial system, the gaining of independence through legal means did not appear realistic to some members of the MTLD. Consequently the FLN call for armed struggle and the insurrection of November 1954 (while surprising both the French authorities and the other Algerian parties) sealed the fate of any peaceful means for changing the Algerian society.

Unlike the MTLD, the three Algerian parties which rallied the FLN after 1954, had not been asking for independence. On the contrary, the main requirements of their discourses appeared to be a closer collaboration between Algeria and France and the abolition of any segregation between Algerians and Frenchmen.

The first of the three parties, the Oulamas (a religious organisation founded in 1931), had been putting the stress on an Islamic revival which would safeguard the "Muslim and Arabic personality" of Algeria. Hence the Oulamas organisation vindicated the autonomy of Algeria but within some form of union with France. To this extent, the Oulamas do not seem to have had any social project apart from a return to an idealised Muslim past. In terms of its social structure, on the other hand, the Oulamas' organisation had represented the traditional bourgeoisie² (wholesale merchants, landowners and some literate "nobility") which had been witnessing its gradual destruction by the penetration of the capitalist mode of production into the Algerian social formation.

The French colonisation, however, brought about the emergence of an Algerian upper middle class (doctors, pharmacists, solicitors) which came to be politically represented by the UDMA (Union Démocratique du Manifeste Algérien, founded in 1943). This party which appears to have represented another wing of the same class position² as the Oulamas, had developed a similar discourse and intended to struggle for some kind of autonomy within a larger union with France.

Finally the Algerian communist party (PCA), which was founded in October 1936,³ had suffered from its close links with the French communist party as well as its European membership. To that extent the "national question" had not been properly understood by the Algerian party which found itself outside the leadership of the national movement. The Algerian communists, however, participated in the liberation war but suffered (physically and politically) from the historical mistake of their party.

Thus the heterogeneous composition of the FLN organisation could operate under the simplest common denominator - the struggle for independence - and postpone to a later date the definition of any social project. Under these circumstances the common denominator constituted the strength of the FLN as well as its weakness.

By sticking to the simple requirement of independence for Algeria, the FLN (with its heterogeneous composition) proved its correct assessment of the principal contradiction of the moment (the contradiction between colonised and coloniser) and projected the image of a monolithic organisation. This apparently monolithic organisation however, reflected essentially the aspirations of two distinct (if not opposed) social categories.

The petty bourgeoisie which led the independence war faced a division of labour according to the origin of its components. Consequently, the urban petty bourgeoisie tended to concentrate on the political structure (FLN and provisional government) whereas its rural counterpart would dominate the military structure.

The large masses, on the other hand, mainly of peasant origin, constituted the backbone of the liberation movement and represented the ultimate force of the anti-colonial struggle. Because of their rejection by the colonial system, these masses represented the most radical category in terms of overthrowing the colonial rule. Their radicalism, however, remained of a superficial nature to the extent that no autonomous organisation existed to synthesise their basic aspirations. Hence the peasantry bore the liberation war but its deepest aspirations could hardly materialise with the departure of the colonists.

The two social categories which formed the national liberation movement were, consequently, united in their confrontation with the colonial ruler. Independence would, in this context, bring about change for both categories. However, whereas the need for political change emerged as a theme of unity, the question of social change could not be raised during the independence war. For social change could not have covered the same meaning for the various categories struggling under the FLN umbrella.

The frontist nature of the FLN would indicate the existence of various political tendencies (see the FLN composition above) within the leadership; and among these tendencies, a bourgeois tendency which would aim at replacing the French colonists by an indigenous bourgeoisie (the UDMA and the Oulamas would represent this tendency).

At the other extreme and still within the petty bourgeois leadership, a socialist tendency showed its existence through the production of the wartime official discourse. Hence as early as 1956, Ben M'Hidi would claim that the Algerian people were struggling "for a socialist system involving, in particular, revolutionary and deep agrarian reform, for a decent material and moral life and for peace in the

Maghreb".⁴

Ben M'Hidi's message would again re-emerge within the "programme de Tripoli" (June 1962) which was elaborated by "left wing" intellectuals⁵ and unanimously accepted by the ruling body (conseil national de la révolution Algérienne, CNRA) of the FLN. The programme would advance the notion of "a popular and democratic revolution" defined as "the conscious building of the country in the framework of socialist principles and of power in the hands of the people".⁶ The programme would also envisage the setting up of heavy industries as a priority.⁷

However, the socialist discourse of the war period remained limited in its class analysis of the Algerian society. Hence it kept silent about the likely contradictions which would emerge in post-independence Algeria. Under these circumstances, the socialist rhetoric appears (in retrospect) as the dream of some intellectuals rather than the outcome of the "concrete analysis of a concrete situation".

In this respect, the large masses (of which the majority were of the peasantry) who might have (in theory) responded positively to a socialist message, were ideologically one step behind. For the massive participation of the small and landless peasantry in the liberation war did not aim at destroying the essence of the colonial system (the reproduction of capitalist social relations of productions), but concentrated on a more concrete (apparent) goal, i.e. the repossession of the "stolen" land.

The mobilisation of the large masses around the objective of repossessing the "stolen" land, could hardly be replaced by a more abstract (the socialist ideology) discourse. For those who advanced socialist themes were outside the battlefield (the Algerian territory),⁸ and the isolation of the Algerian territory (brought about by

the erection of a barricade of electrified barbed wire and minefields at the Tunisian and Moroccan borders) could not favour the spread of a radical ideology from abroad.

Under these circumstances, the FLN commanders of the six military districts, which covered the Algerian Territory, became more and more autonomous from the national leadership and from each other as well.⁹ The relative autonomy of the military districts consequently favoured and reinforced the ever-present pre-bourgeois (tribalism and regionalism, in particular) ideology among the masses. To that extent, and despite the socialist rhetoric of some members of the leadership, the socialist discourse had little impact (if any) on the large masses which bore the liberation war. These masses, however, witnessed the gradual rise of the district commanders as supreme chiefs of their respective areas.¹⁰

The lack of co-ordination among the various military districts as well as the quasi-autonomy of these districts from the national leadership, would, to some extent, create a new factor of division among the Algerian leadership (the first factor being the frontist nature of the FLN). The consensus around the call for independence could, under these conditions, last as long as the duration of the liberation war. The end of the war, however, would exhibit the basic weakness of the FLN.

Insofar as the large masses had not been mobilised for the implementation of a particular social project and to the extent that the FLN remained a "multi-headed" (or headless) organisation, the withdrawal of the colonisers would move the principal contradiction back inside the national formation.

Independence meant a crisis¹¹ inside the Algerian leadership whose various parts started struggling in order to dominate the newly independence state. The power vacuum that followed the French withdrawal would, then, show the ideological deficiency of the FLN and reveal the absence of a strong social class capable of imposing its hegemony (in Gramsci's sense) on the rest of society. Hence the FLN, as an organisation which led the independence war, collapsed after the French departure from Algeria.

To the extent that no other political organisation existed outside the FLN, the collapse of the latter meant that a vacuum had to be filled at the leadership level. In this context, the period 1962-1965 (Ben Bella's years as president) may be interpreted as an interlude in the process of the state's consolidation under the control of the "army of the frontiers".

2. Development ideology and the rentier state

Constituted, at the beginning of the war by various independent units of the frontier districts, the army of the frontiers¹² (mostly based in Tunisia) gradually moved towards the model of a conventional army, with a central command led by Colonel Boumediène. Compared to the interior units which confronted the fire power of the French army, the army of the frontiers faced a rather quiet situation. Being isolated from the Algerian territory by the various barbed wire barrages, Boumediène's army could hardly claim to have participated in the war.

Thus, while the units of the interior had been gradually decimated by the successive military operations¹³ of the French army, Boumediène's army, being outside the danger zone, benefited from the recruitment of ex-French army officers (of Algerian origin) who deserted from the colonial army during the years 1959 and

1960.¹⁴ Well-trained and well-equipped, the army of the frontiers had not performed its logical task (the war against the French army). It did, however, intrude into the political scene by producing its own populist discourse and presenting itself as the "guarantor of the revolution".¹⁵

At the end of the war, the self proclaimed guarantor of the revolution emerged as the only organised (and armed) force left among the various contenders for power. The army of the frontiers started its war by crushing dissident units¹⁶ of the interior and moved closer to power by supporting Ben Bella in the race for the presidency.

To the extent that Boumediène was not known as a national figure, its alliance with Ben Bella represented the appropriate springboard for the control of post-independence Algeria. Ben Bella, on the other hand, lacking a power base, could envisage a tactical alliance with Boumediène in order to eliminate other contenders for power.

Hence, both men, being rejected by an important part of the leadership,¹⁷ used the military might of the army of the frontiers (and the national stature of Ben Bella) to gain power after the departure of the French colonists. The alliance between the two men took shape when Ben Bella was "elected" president in September 1962 thanks to the support of Boumediène.

The honeymoon between the two men was, however, shortlived to the extent that Boumediène coup d'etat (19 June 1965) put a halt to Ben Bella's reign. By attempting to undermine the power of the army (and of Boumediène in particular) through the revival of the FLN and the creation of a popular militia,¹⁸ Ben Bella

became a *de facto* adversary of Boumediène.

The coup d'état accelerated the militarisation process of the regime and favoured the constitution of the army as a dominant group controlling the state and using the moribund party (the FLN)¹⁹ as a tool for propaganda. The seizure of power by the army, then, saw the emergence of a new political structure, i.e. the "conseil de la révolution" (C.R.) which was to replace all other previous institutions (the national assembly and the political bureau of the FLN, in particular). The "conseil de la révolution" as the supreme authority was composed of 26 members of which 24 were (or had been) army officers.²⁰

The C.R., however, faced the same dilemma as the FLN to the extent that, coming from various social origins, the C.R.'s members could only agree about the removal of Ben Bella. Hence some form of minimal programme had to be implemented in order to justify the military coup.

Under this constraint, the military regime would develop an essential (and apparently neutral) theme, i.e. the building of the state apparatus at the political and economic levels. In this context, Ben Bella's populist rhetoric was played down while the reconstruction of the economy, under the state's control, became the means by which the new regime would seek its legitimacy.

Dominating the state's apparatus and controlling the basic sectors of the economy (through the creation of various state's firms) the military group could, then, claim to be pursuing the anti-imperialist stance. The political complexion of the military regime could not, however, be other than populist. For in view of the burden which was supported by the large masses during the war, the only appropriate ideology (to maximise the number of allies) had to place the people at

the centre of any discourse.

Consequently, using the same device as Ben Bella, the military regime developed a public sector and took decisions in the "name of the people". The "people", however, had been completely absent from the decision-making process. Nevertheless, the building of an independent and national economy would apparently respond to the people's aspirations and increase the welfare of the majority (if not the totality).

Under these circumstances, the priority given to the heavy industries, would be interpreted as stemming from nationalist parameters (the rejection of the essential feature of the colonial economy) and the simplistic understanding²¹ of the world economy as a reality divided between industrialised and non-industrialised countries.

The building of an independent and national economy, which was equated, in the official discourse, with a transition towards a socialist society, would, however, emerge without reference to an internal class struggle. The only recognised struggle remained the one that the Algerian society, as a whole, was waging against "imperialism". In this context, even the domestic bourgeoisie was called upon to contribute into transforming the Algerian economy.²²

Building a "socialist society" without a leading socialist party but with the help of the domestic bourgeoisie would, at first sight, constitute a challenging paradox indeed. The historical development which characterised the Algerian society suggests, to some extent, that the socialist rhetoric had been strongly correlated with the amount of oil rent appropriated by the Algerian state.

Hence the (theoretical) paradox mentioned above loses (in practice) its paradoxical feature insofar as an appropriate use of the oil rent could (i) strengthen the state and the military under cover of a populist discourse and (ii) allow the emergence and consolidation of a domestic bourgeoisie under cover of national solidarity.

The strengthening of the state emerged, in the Algerian context, as the process of its autonomisation from civil society (in Marx's sense). The appropriation of the oil rent by the state would, to that extent, create the illusion of a political power above all social classes. This same appropriation would put forward the entrepreneurial destiny of a nationalist state which could function outside and, to some extent, independently of the inner logic of the economic structure. Consequently, the state did not need to create the conditions for the appropriate exploitation of the labour force (in order to produce a surplus and ensure the reproduction of the system). On the contrary, the oil rent (understood as a transfer of value from outside the domestic economy) would ensure an accumulation process without the exacerbation of the conflictual relation between capital and labour.

However, the autonomisation of the rentier state might be seen as one aspect (the phenomenal form) of a more complex (and contradictory) reality. Another aspect of this reality would be reflected in the exteriorisation of civil society from the historical development to which the Algerian social formation was subject. Under these conditions the rentier state became the (apparent) active agent, and civil society the passive one.

Consequently, the rentier state performed not only the task of the entrepreneur but used and created a multitude of institutions in order to permeate and control

civil society. Hence direct control was maintained by the conventional police, the "gendarmerie", "the military security" and the party machine (whose members acted more like informers than an ideological vanguard). The indirect control, on the other hand, emerged through the creation (initiated by the state) of various 'unions' (workers, lawyers, economists, doctors, peasants, etc.) under the control of the FLN. These unions, however, did not act as conventional unions (by defending their members' interests) but were geared towards selling the policies of the supposedly infallible state to their "audiences".

This one-way movement (from the state to civil society) did, to some extent, create the illusion that civil society could be nothing but the passive recipient of the various state policies. The rentier state emerged, in this context, as the ultimate performer in terms of developing the Algerian economy.

Under these conditions (the apparent passivity of civil society, in particular), development would be visualised as a process of importing from the "industrialised countries" the "modern technology" in order to transform the Algerian economy, and the success of this transformation appears totally dependent on the so-called transfer of technology.

However, this understanding of development of the Algerian state (as a rentier state) precluded any decisive role for the direct labourers (the Algerian technicians) in the production process and in mastering the imported technology. For the direct involvement of the labourers would create a potentially new type of performer (apart from the rentier state) who could claim its autonomy from the rent and compete for power with the dominant social groups (those who distribute the rent).

Hence, the rentier state tended to rely on foreign technology as well as foreign technicians for the reproduction of the productive base. The rentier state, did, through the same movement, downgrade the potential role of the domestic technicians (and the working class, in general) who became attracted by administrative functions (i.e. those functions which were closer to decision centres) and ended up as rentiers participating in the sharing of the oil rent.

To ensure the reproduction of the system under its domination, the rentier state tended to downgrade productive labour and reduce the labourer to the mere recipient of a salary. The labourer's salary, however, remained completely disconnected from the result of his labour and as such, part of it may be visualised as a portion of the oil rent. At the economic level, the labourer appeared as a rentier benefiting from the state's kindness while, at the political level, the same labourer became a "client"²³ of the rentier state.

In this context the rentier state produced the populist discourse as an effective means for the (political) control of those (the direct labourers) who were objectively rejected by the rentier system.

Through the same movement, the populist discourse tended to hide the convergence of interest between the rentier state and the domestic bourgeoisie (as a class in the process of being constituted). For the process that created the state sector under the military group command, produced a domestic bourgeoisie which entered into a patron-client relationship with the social groups dominating the state.

Hence, while the military group focused on the strengthening of the state sector, increased the number of its clients (by distributing the oil rent) and

advanced its populist discourse, the domestic bourgeoisie quietly, accumulated by privately appropriating part of the oil rent (through subsidies and "gifts" accorded to ex-FLN or army members and members of their extended family, to start businesses, overevaluation of contracts with the state, inflated prices, etc.)²⁴

The objective alliance and convergence of interests between the rentier state and the domestic bourgeoisie could not however emerge within the political scene. For the independence war could not result (from the large masses' viewpoint) in the replacement of the French colonists by "indigenous colonists". The manufacturing of a populist discourse as well as the emphasis on the building of an independent and national economy would, consequently, serve as compensatory devices for the rejection of the direct producer from the decision-making process and the presence of the domestic bourgeoisie within the state apparatus.

However, insofar as the domestic labour force did not fully confront the labour process (and the foreign technology, in particular), and to the extent that the rentier state would not perform its own suicide (by reintroducing productive labour as the central category), the question of implementing an independent and national economy seemed to have no answer within a rentier economy. That question nevertheless remained an ideological slogan which could enhance the legitimacy of the rentier state and provide a scapegoat, i.e. the imperialist conspiracy, for the fiasco of the state's policies.

The illusion of building an independent and national economy as well as the transition towards a socialist economy would have stemmed from the appropriation of the oil rent by a state which did not carry any coherent social project. The reduction of that rent in the 1980s would then require a reformulation of the

Algerian growth strategy at the economic level, and the manufacturing of a new ideological discourse at the political level.

3. Rent reduction and the "new" growth strategy

The reduction in the magnitude of the oil rent appropriated by the Algerian State would necessarily put an end to the latter's role as collector and distributor of that rent, and under these circumstances two interrelated aspects must be confronted.

At the economic level, the internal and external conditions of the accumulation process must be reappraised and adapted to a situation where the existence of industries must stem from their viability as economic units.

At the political level, on the other hand, the disappearance of the oil rent can only result in a re-activation of the internal contradictions of the Algerian social formation. In particular the populist ideology developed during the 1970s would become obsolete, hence requiring the production of a new discourse to justify and legitimise a new set of actions.

The accumulation process which was financed by the oil rent, could no longer be sustained in the present decade. In this context the slowing down of the investment programme started materialising as early as 1980.²⁵ Thus, out of a planned investment expenditure of 400 billion dinars (1980-1984 plan), only 30% had actually been spent²⁶. Although not completed, the 1980-84 plan nevertheless developed a new perspective in terms of sectoral distribution of investment.

Table IX-1. Sectoral distribution of investment, successive planned periods, billion dinars

| | 1967-69* | 1970-73* | 1974-77* | 1980-84** | 1985-89** |
|-------------------------------|----------|----------|----------|-----------|-----------|
| Hydrocarbons | 27.5 | 26.9 | 29.7 | 15.7 | 7.2 |
| Industry (ex hydrocarbons) | 26.1 | 30.4 | 31.5 | 22.7 | 24.4 |
| Agriculture + irrigation work | 20.5 | 12 | 7.4 | 11.7 | 14.4 |
| Others | 25.9 | 30.7 | 31.4 | 49.9 | 54 |
| TOTAL | 9.16 | 36.31 | 121.12 | 400.6 | 550 *** |

* actual investment: ** planned investment: *** constant 1984 prices

Source: 1967 to 1977, MPAT *Synthèse du Bilan Economique et Social de la Décennie 1967-1978*, Alger 1980 p. 7
 1980-1984, MPAT, *General Report on the 1980-84 Five Year Plan*, Alger 1985, p. 41
 1985-89, MPAT, *Deuxième Plan Quinquenal 1985-89, Rapport Général*, Alger 1985, p. 135

The second five year plan, on the other hand, emphasised the trend towards more investment in sectors other than the industrial sector in general and hydrocarbons industry in particular. This new feature of the investment programmes may have meant that the industrial sector in general, and the hydrocarbon industry in particular, reached an "optimal" phase in terms of the size of their productive base.

However the lack of integration of different sectors of the economy (see chapter VIII), the state of mono-exporter of the Algerian economy²⁷ and the incapacity of the industrial sector to ensure its autonomous reproduction would suggest that the reassessment of the Algerian growth strategy constituted more

than a mere continuation of the process which started with the first plan in 1967. In fact a fundamental shift in the growth strategy seemed to have taken place by the end of the 1970s.

While at the economic level the Algerian growth strategy seemed to go far away from its goal of building an independent and national economy, at the political level the Algerian scene witnessed the emergence of the domestic bourgeoisie²⁸ (which up to then was not involved in the growth strategy).

The absence of the domestic bourgeoisie in the Algerian growth model and the 1970s official discourse did not however mean its non-existence in the Algerian reality. On the contrary, the domestic bourgeoisie seemed to have been present in the economic sphere since 1962 onward. Although ignored in the political discourse, the Algerian bourgeoisie had nevertheless managed to accumulate²⁹ in branches outside the so-called strategic ones. Thus, by 1980, its contribution to gross domestic production became rather substantial.

Table IX-2. Share of the private sector in GDP (1980) (Million dinars and percentage)

| | Output | % of Private Output |
|--------------------------------|----------|---------------------|
| Agriculture | 10178.33 | 78.8 |
| Industry (except Hydrocarbons) | 3989.1 | 25 |
| Hydrocarbons | 9551.0 | 18.6 |
| Building and Public Works | 5338.6 | 26.4 |
| Transportation | 1630.3 | 24.0 |
| Communications | - | 24.0 |
| Trade | 12418.9 | 65.4 |
| Services | 4733.2 | 80.0 |
| TOTAL GDP | 47848.4 | 36.0 |

Source: ONS, *Annuaire Statistiques de l'Algérie 1983-84*, ed. 1985, Alger, p. 318

Hence 36% of the Algerian gross domestic production in 1980 had been provided by the private sector although the latter had no defined role in the Algerian growth strategy.

The effective role of the private sector however emerged within a particular domestic division of labour stemming from the Algerian growth strategy. Since the latter emphasised the need to implement a set of heavy industries (the so-called industrialising industries), necessarily under state control, the domestic bourgeoisie oriented its investment towards final consumption branches thereby:

- Positioning itself at the downstream level of the state sector and

- Facing a market in rapid expansion due to the distribution of the oil rent by the State

Table IX-3. Turnover of the private sector according to activity (1980)
(million dinars)

| Branch | Total Turnover of the branch | Private Sector turnover | % |
|-------------------|------------------------------|-------------------------|-------|
| EMMSI* | 8000** | 2000** | 25 |
| Building Material | 3506.215 | 460.554 | 13.11 |
| Food Industry | 8170.285 | 1056.167 | 12.9 |
| Textile Industry | 4529.938 | 2837.185 | 62.6 |
| Leather-shoes | 1187.689 | 487.998 | 41.1 |
| Chemistry | 2096.965 | 901.018 | 42.9 |
| Wood and Paper | 2250.527 | 741.572 | 32.9 |
| TOTAL | 29741.619 | 8484.494 | 28.5 |

Source: MIL., ML. quoted in Liabes, D., *Capital Privé et Patrons d'Industrie en Algérie 1962-1982*, CREA, 1984 p. 425.

* Electricity, mechanics, metallurgy, steel industries; in this case they comprise, metal frames, sheet metal work, nails and screws production, automobile accessories etc

** Estimation of the Ministry of Heavy Industries (ML).

Thus, despite its being officially excluded from the Algerian growth strategy, the private sector managed by 1980 to dominate the agricultural sector, the textile industry and the trade and service industries. However, contrary to the state enterprises which confronted non-mastered "territories" (modern technology in particular) and faced losses (partly because of administratively imposed prices of their output),³⁰ the private sector activities seemed to have been rather efficient.

Table IX-4. Evolution of profit in the state and private sectors (million dinars)

| Branch | 1969 | | | 1974 | | | 1978 | | |
|---------------|-------|---------|-------|-------|---------|-------|-------|---------|-------|
| | State | Private | Total | State | Private | Total | State | Private | Total |
| EMMSE | -2 | 73 | 71 | -275 | 474 | 159 | 359 | 62 | 421 |
| Building Mat. | 38 | 3 | 41 | -27 | 45 | 18 | 75 | 20 | 95 |
| Chemical Ind. | 10 | 37 | 47 | 51 | 54 | 105 | -89 | 74 | -15 |
| Food Ind. | 69 | 55 | 124 | 135 | 42 | 177 | -255 | 370 | 114 |
| Textile Ind. | 15 | 53 | 68 | -67 | 133 | 66 | 112 | 259 | 371 |
| Leather Ind. | 1 | 26 | 27 | -8 | 46 | 38 | 53 | 57 | 110 |
| Wood Ind. | 15 | 37 | 52 | 20 | 37 | 57 | -80 | 41 | -39 |
| Others | 7 | 1 | 8 | 9 | 1 | 10 | 5 | 14 | 19 |
| TOTAL | 153 | 285 | 438 | -162 | 832 | 670 | 180 | 897 | 1077 |

Source: Comptes économiques 1967/1978 quoted in Liabes D. *op.cit.* p. 428

It is, then, upon this apparent profitability of the private sector and the apparent inefficiency of the state sector that the 1980s witnessed the emergence of a discourse acknowledging the existence of the former and developing the argument about the necessity for the State to integrate the private sector within the growth strategy³¹. The reduction in the magnitude of the oil rent appropriated by the State and the apparent efficiency of the private sector would, then justify a shift in the economic as well as political aspects of the State's presentation of the growth of the Algerian economy.

In this context, the private sector was presented as antagonistic to the state sector (charte d'Alger 1964), then tolerated within the so-called "non exploitive

ownership"³² (charte nationale 1976); finally in 1981 the private sector was congratulated by the ruling party (the FLN) for its role in the economic development of the Algerian scene and recognised as an equal partner to the state sector.

The state shift (in the official discourse) towards a new presentation of the domestic bourgeoisie's role as complementing the state sector may, however, be comprehended:

- Firstly as an implicit recognition of the failure of the state's industrial base to reach the goal of building an independent and national economy; hence the calling into question of the Algerian growth strategy as implemented during the 1970s
- Secondly as an explicit end to the populist rhetoric developed by the state apparatus thanks to the oil rent
- Finally as a first step towards the transformation of the Algerian economy from a "distribution economy" to a "production economy": in view of the apparent efficiency of the private sector, this transformation would give more weight to the domestic bourgeoisie in the decision making process

This new comprehension of the Algerian growth strategy in general, and the role of the domestic bourgeoisie within it, may then constitute the ideological veil under which the abandonment of the strategy of building an independent and national economy (the implementation of Amin's autocentred model) would proceed and be replaced by a more orthodox policy within the prevailing international division of labour. The emphasis, in the 1980s official discourse,³³ on increase of

output and productivity within all sectors of the economy with no reference to the beneficiaries of that increase, would suggest that the domestic bourgeoisie is being called upon to gradually play a leading role in the growth of the Algerian economy on one hand, and in the export market on the other.

In this context the building of an independent and national economy through implementation of a set of industrialising industries would become a slogan of the past, which is already being superseded by an appeal to the domestic bourgeoisie and to international capital:

- The appeal to the domestic bourgeoisie would then emphasise the weight of light industries and the agriculture sector (the private sector domains of specialisation) which may replace the hydrocarbon sector as export sectors³⁴
- Although the government experienced a setback³⁵ when it tried to introduce legislation allowing foreign firms to own a majority stake in joint ventures, the very fact that such a legislation had emerged, points to the need (from the Algerian State's viewpoint) for a greater involvement of international capital in the evolution of the Algerian economy

The Algerian State seems, then, to have declared the failure of the 1970s growth strategy by rejecting some economic (the particular virtue of some set of industries over others) and political (the virtue of State over private ownership of the means of production) dogmas. The success of the alternative approach (outlined above) would, however, depend on international as well as internal parameters.

At the international level, the export of commodities other than hydrocarbons must face international competition which neither the State nor the private sector have ever been in touch with (because of the State monopoly over international trade and the limitations imposed upon imports of foreign commodities).

At the internal level on the other hand, after twenty years of socialistic rhetoric (supported by the oil rent), the implementation of the more "pragmatic" approach advanced by the State may require measures:

- To restore confidence to the domestic bourgeoisie in a state that keeps on claiming fidelity to "irreversible options"
- To mobilise³⁶ the labour force around the new growth strategy (hence the slogan "work and rigour to ensure the future") which, in accordance with the 1970s one, keeps on avoiding the question of the political and social implications of the development of the forces of production

The neutralisation of economic development in the Algerian official discourse may, then, be considered as a sign of the presence of the domestic bourgeoisie within the State which remains a stake for various social groups (holding various social projects).

The reduction in the magnitude of the oil rent appropriated by the State would, however, require the production of a more radical discourse. This process seems to have been on its way since 1980: the rehabilitation of the domestic bourgeoisie may constitute the first step towards the affirmation of the latter as the leading force within the Algerian social formation.

The continuation of this process would thereafter, signify that the problem of introverting the domestic economy and the realisation of an autonomous accumulation process would become an emptiness to be filled by the search for an optimal (from the domestic bourgeoisie's viewpoint) integration into the world market in alliance with international capital.

NOTES

1. Proclamation du 1er novembre, 1954, p.2.
2. Harbi, M. (1975) *Aux Origines du FLN, le Populisme Révolutionnaire en Algérie*, Christian Bourgeois (ed), Paris, p.68.
3. Tegua, M. (1982) *L'Algérie en Guerre*, OPU, Alger, p.56.
4. Tegua, M. (1982) *op. cit.*, p.221.
5. Yefsah, A. (1982) *Le Processus de Légitimation du Pouvoir Militaire et la Construction de l'Etat en Algérie*, Anthropos, Paris, p.56.
6. Chikh, S. (1981) L'Algérie en armes ou le temps des certitudes, *Economica*, Paris, p.358.
7. Hamel, B. (1983) *op. cit.*, p.76.
8. By July 1957, the political leadership of the FLN moved outside the Algerian territory.
9. For details see Tegua, M., *op. cit.*, pp.494-500.
10. Jackson, H.F. (1977) *The FLN in Algeria: Party Development in a Revolutionary Society*, Greenwood Press, London, p.52.
11. On the 1962 crisis see Tegua, M., *op. cit.*, pp.574-597; Yefsah, A., *op. cit.*, pp.51-66.
12. The army of the frontiers comprised 15,000 men in 1960 and 35,000 men in 1962.
13. Tegua, M., *op. cit.*, pp.419-440.
14. Chikh, S., *op. cit.*, p.393.
15. Chikh, S., *op. cit.*, p.394.
16. Tegua, M., *op. cit.*, pp.574-597.
17. Boumédiène was dismissed as the head of the army (30th June 1962) by the provisional government of Algeria (GPRA) headed by Ben Khedda. Ben Bella, on the other hand, was not accepted as leader by most of the GPRA's membership.
18. Jackson, H.F., *op. cit.*, pp.176-202.
19. The acronym FLN remained the symbol of revolutionary action.
20. Quandt, W.B. (1969) *Revolution and Political Leadership: Algeria, 1954-1968*, MIT Press, p.241.

21. Ministère de l'Information et de la Culture (ed) (1971) *Le Choix Industriel de l'Algérie*, quoted in Temmar (1974) p.199, Alger.
22. The 1966 investments code gave wide prerogatives to the domestic bourgeoisie.
23. For a study of the Algerian society in terms of a patron-client relationship, see Etienne, B. (1977) *L'Algérie, Cultures et Révolution*, Seuil, Paris; Roberts, H. (1983) The Algerian bureaucracy, in Asad, T. and Owen, R. (eds), *The Middle East*, Macmillan, London, pp.95-114.
24. Liabes, D. (1984) *Capital Privé et Patrons d'Industrie en Algérie 1962-1982*, CREA, Alger, p.89.
25. The cause of the showdown was more related to a physical exhaustion of the reserves than to the state of the market.
26. *Middle East Economic Digest (MEED)*, Vol. 29, No. 28, 3 - 9 May 1985.
27. In 1985, hydrocarbons accounted for 98% of total export.
28. The emphasis on heavy industries, and the populist rhetoric developed by the state, may explain the non-appearance of the domestic bourgeoisie in the growth strategy.
29. Amirouche, A. (1985) Présentation empirique du stock d'équipement en matériel des entreprises industrielles privées en Algérie, *Revue du CENEAP*, No. 2, Alger, juin, p.67.
30. For details see Benachenhou, A. (1980) *op. cit.*, p.109; Amirouche, A. (1985) *op. cit.*, p.68.
31. Resolution of the 6th session of the FLN central committee in December 1981.
32. The notion of exploitation does not, however, stem from any theoretical framework and remains undefined.
33. Zitouni, M., Minister of Light Industries, advanced Teng Hsio Peng's story about the irrelevance of the cat's colour as long as it catches mice.
34. The year 1986 witnessed a vigorous campaign by the domestic media developing the virtue of agricultural exports.
35. The National Assembly voted against the government's proposals concerning the subject in summer 1986.
36. The mobilisation of the labour force is likely to be brought about by some form of repression.

CONCLUSIONS

After twenty five years of independence and despite the official claims about building an independent and national economy, Algeria seems to have experienced a change in degree rather than a change in nature.

From a mono-exporter of agricultural products (wine in particular) during the colonial era, the Algerian economy has become a mono-exporter of hydrocarbons. The similarity between pre and post-independence Algeria does not however remain at the level of its position as a mono-exporter but can be comprehended as stemming from a more fundamental aspect: in both historical periods, the evolution of the domestic economy was based upon and determined by the existence of a flow of money capital generated outside the Algerian economy.

In pre-independence Algeria, the functioning of the colonial economy relied heavily on its close relationship with Metropolitan France and on the subsidies, which had constantly been present since the beginning of colonisation. If, at the beginning of the colonisation process, the development of the colonial (capitalist) sector had been subsidised by the indigenous (pre-capitalist) economy, at the end of the colonial era, subsidies came directly from Metropolitan France in order to keep the colonial economy afloat.

In post-independence Algeria, on the other hand, the growth of the domestic economy had been mainly supported by the distribution of the oil rent appropriated by the Algerian state. The colonial features of the Algerian economy would re-emerge as a direct consequence of the particular use the oil

rent has been put to. Like the subsidies (which characterised the colonial period) the oil rent served as a means of financing the rest of the economy as well as attenuating the impact of social and political tensions which necessarily emerges along any process of change.

Hence in both eras (pre and post-independence Algeria) the accumulation process was not based on the realisation (and investment) of a surplus (in Baran's sense) generated from within the system, but on a quantity (subsidy or rent) generated outside the domestic economy.

The use of the oil rent by the Algerian state did not, however, stem from the same logic (at least officially) as the subsidies coming from Metropolitan France during the late colonial period. Whereas the French Metropolitan government had had as its main purpose the revitalisation of the Algerian economy and its greater integration with the French economy and the world market in general, the oil rent appropriated by the Algerian state was supposed to finance a gradual withdrawal (of the Algerian economy) from the world market by favouring the materialisation of an autcentred economy.

The 1980s has not, however, witnessed the implementation of an integrated economy. On the contrary, the Algerian experience seems to have evolved according to the colonial logic rather than a logic of autonomy. To that extent the appropriation of the oil rent by a state without a social project favoured a process of autonomisation at two particular levels.

At the structural level, the military group in particular and the dominant social groups in general could reproduce themselves (as dominant groups) without the existence of an internal surplus.

At the superstructural level, on the other hand, a state without a social project could "manufacture" a socialist discourse and, at the same time, promote directly (through the state's sector) and indirectly (through the private sector) the spread of capitalist social relations.

The global process of autonomisation would emerge as a state disconnected from civil society (in Marx's sense) in broad terms, and from the productive spheres specifically. Under these circumstances the functioning of the productive system would have no influence over the reproduction of the dominant social groups.

On the contrary those (within the state apparatus) who control the distribution of the oil rent emerge as the apparent direct producers (they monopolise and distribute the oil rent); and paradoxically those who perform direct labour within inefficient productive spheres appear as rentiers benefiting from the kindness of the state.

Hence, in the Algerian context, the relationship of civil society to the state seems completely "blurred" to the extent that the state does not seem to emanate from the internal contradictions of society; but it is society which looks like an extension of the state.

Under these circumstances it is not productive labour which performs the task of reproducing materially the society, but it is the rent (appropriated and distributed by the state) which exhibits this particularity.

Productive labour, then, loses its role as a central category upon which civil society could realise its extended reproduction. By holding this role the oil rent operates a practical and theoretical reversal.

The building of an independent and national economy becomes quasi-independent of the functioning of the productive spheres. To that extent, the apparent inefficiency of the Algerian economy in general and the state's sector in particular would (partly) stem from the "rational" behaviour of the direct producers who could not enhance their status (and their wages) by improving their productivity.

Within this framework the process of building the Algerian economy exhibits a first noticeable aberration: development does not stem from an appropriate mobilisation of the labour force around productive labour but is offered to civil society by an autonomous (from civil society) state whose income depends on its greater integration within the world market.

To cover this aberration, a state without a social project could (thanks to the oil rent) manufacture a discourse whereby the non-participation of the "people" in the political sphere (where decisions are taken) is compensated for by the presence of the word "people" in most (if not every) ideological productions (decisions are always taken in the name of the people and for its benefit).

Hence the populist discourse advanced by the state does signal the existence of a second aberration: the building of an independent and national economy becomes equated with a transition towards a socialist society. Yet the process evolves without the active participation of civil society but with a thorough involvement (at various levels) of international capital.

The movement that attempts to realise an independent and national economy without recourse to productive labour emerges, as a process whereby the development of society is bought from outside thanks to the oil rent. The internal contradictions are not therefore overcome in order to move towards a higher qualitative stage. But these contradictions are concealed or attenuated; and rather than being transformed by the various economic realisations, the dominant ideology remains of a pre-capitalist nature (clanism and clientelism remain the dominant forms of social relations).

The existence of the oil rent and its appropriation by a state without a social project appears then as having frozen the historical movement of the Algerian social formation. Or, in other words, the process of building an independent and national economy stands as an alien phenomenon to civil society; and as such the likelihood of its realisation seems as remote as the building of a socialist society without a socialist leadership.

The oil rent had therefore constituted the material base upon which both illusions (the building of an independent and national economy and the socialist transition) could be marketed by the state's ideological apparatus.

Under these conditions the reduction (in the 1980s) in the magnitude of the oil rent appropriated by the Algerian state would imply the collapse of both illusions and the production of a new discourse to keep the current system afloat.

From an economic viewpoint, the Algerian economy has to move away from a distribution economy (rentier economy) towards a production economy. The state sector, plagued with cost overrun and functioning according to political rather than economic criteria, seems unlikely to undertake the required transformation in the near future. On the contrary, the private sector which has evolved along the logic of profit maximisation becomes the likely candidate for leading the transformation of the Algerian economy.

A shift from the problematic of introversion of the economy (wrapped by socialist discourse) to a problematic of increasing output and productivity (covered by a nationalist discourse) actually emerged in the early 1980s. This new discourse may constitute the ideological veil under which the domestic bourgeoisie could capitalise and justify its ascension.

The emergence of the domestic bourgeoisie in the political scene and the materialisation of its social project would, however, have to evolve without the support of the oil rent but with the support of the state's apparatus which must find devices for the mobilisation of the Algerian labour force. The re-emergence of productive labour as a central category would paradoxically call into question the very foundation of the hitherto autonomous state. To that extent the likely outcome of the whole process basically depends on the strength of various social classes and on their ability to dominate the state.

BIBLIOGRAPHY

- Adelman, M.A. (1972) *The World Petroleum Market*, Johns Hopkins University Press, Washington.
- Adelman, M.A. (1982) OPEC as a cartel, in Griffin, J.M. and Teece, D.J. (eds), *OPEC Behaviour and World Oil Prices*, George Allen and Unwin, London, pp.37-63.
- Ageron, C.R. (1968) *Les Algériens Musulmans et la France*, PUF, Paris, Tome II.
- Ait-Laoussine (1980) Gas, recent development and problems of supply, in Mabro, R. (ed) *World Energy Issues and Policies*, Oxford University Press, Oxford, pp.24-41.
- Amin, S. (1974) *Accumulation on a World Scale: A Critique of the Theory of Underdevelopment*, MPR, London.
- Amin, S. (1980) *Class and Nation, Historically and in the Current Crisis*, MPR, London.
- Amin, S. (1981) *L'Echange Inégal et la Loi de la Valeur: la Fin d'un Débat*, Anthropos, 2ème édition, Paris.
- Amirouche, A. (1985) Présentation empirique du stock d'équipement en matériel des entreprises industrielles privées, *Revue du CENEAP*, No. 2, Juin, Alger, pp.63-78.
- Angelier, J.P. (1976) Accords de participation et processus de marchandisations du pétrole brut, *Revue Algérienne*, Vol. XIII, No. 4, Dec., Alger, pp.843-879.
- Bedrani, S. (1981) *L'Agriculture Algérienne depuis 1966*, OPU, Alger.
- Bedrani, S. (1983) L'Agriculture algérienne face en marché mondial, in *Les Politiques Agraires en Algérie, vers l'Autonomie ou la Dépendance*, CREA, Alger, pp.11-74.
- Benachenhou, A. (1978) *Formation du Souts-Développement en Algérie: Essai sur les Limites du Développement du Capitalisme en Algérie 1830-1962*, Entreprise Nationale, Alger.
- Benachenhou, A. (1979) *L'Exode Rural en Algérie*, ENAP, Alger.
- Benachenhou, A. (1980) *Planification et Développement en Algérie 1962-1980*, CREA, Alger.
- Benhouria, T. (1980) *L'Economie de l'Algérie*, Maspéro, Paris.
- Benissad, M.E. (1982) *Economie du Développement de l'Algérie, Sous-Développement et Socialisme*, Economica, Paris.

- Benissad, M.E. (1985) *Stratégies et Expérience de Développement*, OPU, Alger.
- Bernis, G.D. (De) (1966) Industries industrialisantes et contenu d'une politique d'intégration régionale, *Economie Appliquée*, Tome XIX, No. 3-4, pp.415-473.
- Bernis, G.D. (De) (1971) Deux stratégies pour l'industrialisation du Tiers-Monde, industries industrialisantes et les options algériennes, *Revue Tiers-Monde*, No. 47, Juil.-Sept., pp.545-563.
- Bernis, G.D. (De) (1974) Le gaz naturel, est-il facteur d'indépendance économique? Application à l'Algérie, Université de Dijon (ed), *Les Hydrocarbures Gazeux et le Développement des Pays Producteurs*, Librairie Technip, Paris, pp.301-345.
- Blair, J.M. (1976) *The Control of Oil*, Macmillan, London.
- Bourenane, S. (1983) Les causes structurelles de la crise de l'agriculture algérienne, in *Les Politiques Agraires en Algérie, vers l'Autonomie ou la Dépendance*, CREA, Alger, pp.175-234.
- Bruno, M. (1982) Energy and resource allocation: a dynamic model of the Dutch disease, *Review of Economic Studies*, Vol. 49, pp.845-859.
- Cambon, J. (1918) *Le Gouvernement Général de l'Algérie, 1891-1918*, Librairie H. et E. Champion, Paris.
- Chevalier, J.M. (1975) *The New Oil Stakes*, Penguin Books, London.
- Chevalier, J.M. (1975) Eléments théoriques d'introduction à l'économie du pétrole, l'analyse du rapport de force, *Revue d'Economie Politique*, No. 2, Mars-Avril, pp.230-256.
- Chikh, S. (1981) L'Algérie en armes ou le temps des incertitudes, *Economics*, Paris.
- Clegg, J. (1971) *Workers' Self-Management in Algeria*, Allen Lane, Penguin Press, London.
- Corden, M. (1982) Booming sectors and Dutch disease economics: a survey, *Working Paper No. 079*, Australian National University.
- Corden, M. and Neary, J.P. (1982) Booming sector and de-industrialisation in a small open economy, *Economic Journal*, No. 92, pp.825-848.
- Corden, M. (1984) Booming sector and Dutch disease economics: survey and consolidation, *Oxford Economic Paper No. 36*, pp.359-380.
- Dasgupta, P.S. and Heal, G.M. (1979) *Economic Theory and Exhaustible Resources*, Cambridge University Press.

- Davidson, P. (1979) Natural resources, in Eichner, A.S. (ed) *A Guide to Post-Keynesian Economics*, Macmillan, London, pp.151-164.
- Dersa (1981) *L'Algérie en Débat, Lutttes et Développement*, Maspéro, Paris.
- Domar, E.D. (1957) *Essays in the Theory of Economic Growth*, Oxford University Press.
- Eagan, V. (1987) The optimal depletion of the theory of exhaustible resources, *Journal of Post-Keynesian Economics*, Vol. IX, No. 4, Summer, pp.565-571.
- Ecrement, M. (1986) *Indépendance Politique et Libération Economique: un Quart de Siècle de Développement en Algérie 1962-1985*, ENAP/OPU, Alger.
- Eden, R. (1981) *Energy Economics*, Cambridge University Press, London.
- Etienne, B. (1977) *L'Algérie, Cultures et Révolution*, Ed. du Seuil, Paris.
- Forsyth, P.J. (1986) Booming sectors and structural change in Australia and Britain: a comparison, in Neary, J.P. and Van Wijnbergens (eds) *Natural Resources and the Macro-Economy*, Basil Blackwell, London, pp.251-284.
- Gadjiev, M. (1982) *Développement du Gaz Naturel: Premier Séminaire du Gaz Naturel*, Boumerdes.
- Gelb, A.H. (1986) Adjustment to windfall gains: a comparative analysis of oil exporting countries, in Neary, J.P. and Van Wijnbegens (eds) *Natural Resources and the Macro-Economy*, Basil Blackwell, London, pp.54-93.
- Griffin, J.M. and Teece, D.J. (1982) *OPEC Behaviour and World Oil Prices*, George Allen and Unwin, London.
- Hamel, B. (1983) *Système Productif Algérien et Indépendance Nationale*, OPU, Alger.
- Harbi, M. (1975) *Aux Origines du FLN, le Populisme Révolutionnaire en Algérie*, C. Bourgeois, Paris.
- Henni, A. (1981) *La Colonisation Agraire et le Sous-Développement en Algérie*, SNED, Alger.
- Hermansen, T. (1972) Development poles and development centres in national and regional development: elements of a theoretical framework, in Kuklinski, A. (ed) *Growth Poles and Growth Centres in Regional Planning*, Mouton, Paris, pp.1-67.
- Himberg, H.A. (1978) *Confronting Dependency, French-Algerian Relations in the Post-Colonial World*, City University of New York, PhD, UMJ, Ann Arbor, Michigan.

Hirshman, O. (1958) *Strategy of Economic Development*, Yale University, New Haven.

Hirshman, O. (1977) A generalized linkage approach to development with special reference to staples, in Nash, M. (ed) *Essays in Economic Development and Cultural Change, Vol. 25, Supplement*, pp.67-98.

Hotelling, H. (1931) The economics of exhaustible resources, *Journal of Political Economy*, Vol. 39, No. 2, April, pp.137-175.

IEA (1982) *Natural Gas, Prospects to 2000*, IEA, OECD, Paris.

Issawi, C. and Yeganeh, M. (1972) *Oil, the Middle-East and the World*, Sage Publications, London.

Jackson, H.E. (1977) *The FLN in Algeria: Party Development in a Revolutionary Society*, Greenwood Press, London.

Jensen, J.T. (1980) World natural gas reserves and the potential for gas trade in Mabro, R. (ed) *World Energy, Issues and Policies*, Oxford University Press, Oxford, pp.43-69.

Johany, A.D. (1980) *The Myth of the OPEC Cartel: The Role of Saudi Arabia*, John Wiley and Sons, New York.

King, R. (1977) *Land Reform: A World Survey*, Bell, London.

Lehvari, D. and Pindick, R.S. (1981) The pricing of durable exhaustible resources, *Quarterly Journal of Economics*, Vol. 96, No. 3, pp.365-377.

Levy, W.J. (1982) *Oil Strategy and Politics*, Boulder, Colorado.

Mabro, R. (1980) (ed) *World Energy, Issues and Policies*, Oxford University Press, Oxford.

Madelin, H. (1973) *Pétrole et Politique en Méditerranée Occidentale*, A. Colin, Paris.

Mahalanobis, P.C. (1963) *The Approach of Operational Research to Planning in India*, Asia Publishing House, New York.

Mahiout, R. (1974) *Le Pétrole Algérien*, SNED, Alger.

Marx, K. (1981) *Capital: A Critique of Political Economy*, Penguin Books, London.

Massarat, M. (1980) The energy crisis: the struggle for the redistribution of surplus profit from oil, in Nore P. and Turner, T. (eds) *Oil and Class Struggle*, Zed Press, London, pp.26-68.

- Mazoyer, M. (1973) The search for full development by making best use of land, Algeria's scarcest resource, in Dumont, R. (ed) *Socialisms and Development*, André Deutsch, London, pp.269-313.
- Mazri, H. (1975) *Les Hydrocarbures dans l'Economie Algérienne*. SNED, Alger.
- Mekkideche, M. (1983) *Le Secteur des Hydrocarbures*. OPU, Alger.
- Molina, J. (1983) La politique agraire: intégration inter-sectorielle et évolution structurelle, in *Les Politiques Agraires en Algérie, vers l'Autonomie ou la Dépendance?*, CREA, Alger, pp.235-471.
- Moran, T. (1982) Modelling OPEC behaviour, economic and political alternatives, in Griffin and Teece (eds) *OPEC Behaviour and World Oil Prices*, George Allen and Unwin, London, pp.94-130.
- OECD (1981) *External Debt of Developing Countries*, OECD, Paris.
- OECD (1985) *Petrochemical Industry, Energy Aspects of Structural Change*, OECD, Paris.
- Oman, C. (1974) *New Forms of International Investment in Developing Countries*, OECD, Paris.
- Ottaway, D. and Ottaway, M. (1970) *Algeria: The Politics of a Socialist Revolution*, University of California Press, Berkeley.
- Palloix, C. (1980) Industrialisation et financement lors des deux plans quadriennaux, in *Revue Tiers-Monde*, Tome XXI, No. 83, Juil.-Sept., pp.531-555.
- Pauwels, J.P. (1983) *Reflexions sur les Nouvelles Orientations Economiques et Energétiques du Plan Quinquennal (1980-1984) et sur l'Organisation de l'Economie Algérienne*, ENAL, Alger.
- Penrose, E. (1968) *The Large International Firm in Developing Countries*, George Allen and Unwin, London.
- Pindyck, R. (1978) The optimal exploration and production of non-renewable resources, *Journal of Political Economy*, Vol. 86, No. 5, pp.841-861.
- Pindyck, R. (1981) Models of resource markets and the explanation of resource price behaviour, *Energy Economics*, No. 3, pp.130-138.
- Prebish, R. (1962) The economic development of Latin America and its principal problems, *Economic Bulletin for Latin-America*, Vol. VII, No. 1, pp.1-22.
- Prebish, R. (1976) A critique of peripheral capitalism, *CEPAL Review*, pp.9-76.
- Quandt, W.B. (1969) *Revolution and Political Leadership: Algeria 1954-1968*, MIT Press, Massachusetts.

- Raffinot, M. and Jacquemot, P. (1977) *Le Capitalisme d'Etat Algérien*, Maspéro, Paris.
- Reid, R.G. (1987) A view of European oil and gas issues, in Rees, J. and Odell, P. (eds) *The International Oil Industry*, Macmillan Press, London, pp.76-87.
- Rey, P.P. (1973) *Les Alliances de Classes, Matérialisme Historique et Luites de Classe*, Maspéro, Paris.
- Rifai, T. (1976) *Le Prix du Pétrole, Economie de Marché ou Stratégie de Puissance*, Technip, Paris.
- Roberts, H. (1983) The Algerian bureaucracy, in Asad, T. and Owen, R. (eds) *The Middle East*, Macmillan Press, London, pp.95-114.
- Roberts, S. (1984) *Who Makes the Oil Price? Analysis of Oil Price Movements (1978-1982)*, Oxford Institute for Energy Studies.
- Roemer, M. (1985) Dutch disease in developing countries: swallowing bitter medicine, in Lundhal, M. (ed) *The Primary Sector in Economic Development*, Croom Helm, London, pp.234-252.
- Roncaglia, A. (1985) *The International Oil Market*, Macmillan Press, London.
- Rybczynski, T.M. (1955) Factor endowment and relative commodity prices, *Economica, New Series*, Vol. XXII, Nos. 85-88, pp.336-341.
- Sampson, A. (1975) *The Seven Sisters: the Great Oil Companies and the World They Made*, Hodder and Stoughton, London.
- Seymour, I. (1980) *OPEC, Instrument of Change*, Macmillan Press, London.
- Shone, R. (1972) *The Pure Theory of International Trade*, Macmillan Press, London.
- Sid-Ahmed, A. (1980) *L'OPEP, Passé, Présent et Perspectives*, OPU, Alger.
- Snape, R.H. (1977) Effects of mineral development on the economy, *Australian Journal of Agricultural Economics*, Vol. 21, No. 3, pp.147-156.
- Solow, R.S. (1974) The economics of resources or the resource of economics, *American Economic Review*, Vol. 64, No. 2, pp.1-14.
- Stern, J.P. (1980) *Soviet Natural Gas: Development to 1990*, Lexington Books, Massachussetts.
- Sweeney, J.L. (1977) Economics of depletable resources: market forces and intertemporal bias, *Review of Economic Studies*, Vol. 44, pp.125-141.

- Tavares, M.C. (1964) The growth and decline of import substitution industrialisation in Brazil, in *UN Economic Bulletin for Latin America*, Vol. IX, No. 1, March, pp.1-59.
- Teece, D.J. (1982) OPEC behaviour: an alternative view, in Griffin, J.M. and Teece, D.J. (eds) *OPEC Behaviour and World Oil Prices*, George Allen and Unwin, London, pp.64-93.
- Tegua, M. (1982) *L'Algérie en Guerre*, OPU, Alger.
- Temmar, H. (1974) *Structure et Modèle de Développement de l'Algérie*, SNED, Alger.
- Temmar, H. (1984) *Stratégie de Développement Indépendant: le Cas de l'Algérie - un Bilan*, OPU, Alger.
- Thierry, S.P. (1979) *Les Biens d'Équipement dans l'Industrie Algérienne: Séminaire du CREA*, Oran, 1979.
- Tlemcani, R. (1986) *State and Revolution in Algeria*, Zed Books, London.
- Tugendhat, C. (1975) *Oil, the Biggest Business*, Eyre Methuen, London.
- Turner, L. and Bedore, J.M. (1979) *Middle-East Industrialisation: a Study of Saudi and Iranian Investments*, Saxon House, London.
- World Bank (1981) Development prospects of the capital surplus oil exporting countries, *Working Paper No. 483*.
- Yachir, F. (1983) *Téchnologie et Industrialisation en Afrique*, OPU, Alger.
- Yefsah, A. (1982) *Le Processus de Légitimation du Pouvoir Militaire et la Construction de l'Etat en Algérie*, Anthropos, Paris.

OFFICIAL DOCUMENTS

- *Journal Officiel de la République Française (JORF)* du 23 Novembre 1958, Ordonnance 58111.
- *JORF* du 20 Mars 1962, Déclarations gouvernementales du 19 Mars 1962 relative à l'Algérie.
- Organisme Saharien (ed), *Le Code Pétrolier Saharien*, Alger, 1963.
- Ministère de l'Industrie et de l'Energie (ed), *Accord Algéro-Français du 29 Juillet 1965*, Alger, 1965.
- Secrétariat d'Etat au Plan (SEP), *Plan Quadriennal 1970-1973: Rapport Général*, Alger.
- SEP, *Plan Quadriennal 1974-1977: Hydrocarbures et Petrochimie, Distribution et Moyens Propres*, Fascicule No. 8, Alger, 1973.
- *Charte Nationale*, éditée par le FLN, Alger, 1976.
- Sonatrach, Division Engineering et Développement, *Plan de Développement de la Pétrochimie*, Alger, 1977.
- *Plan Global de Développement des Hydrocarbures en Algérie*, El-Hindiss, Jan.-Fev. 1979, Alger.
- Ministère de la Planification et de l'Amenagement du Territoire (MPAT), *Synthèse du Bilan Economique et Social de la Décennie 1967-1978*, Alger, 1980.
- Résolution de la 6ème Session du Comité Central du FLN, Dec. 1981.

OTHER DOCUMENTS

- *US Army area handbook for Algeria*, Vol. 20, Department of the Army, Washington, 1972.
- *Encyclopédia Britannica, Macropédia*, Vol. I, 1974.
- Europa Publications Limited, *The Middle East and North Africa, 1984-1985*, 31st edition.

APPENDIX II.1
EVOLUTION OF THE ALGERIAN POPULATION,
1830-1980

| Year | Indigenous population | European population |
|------|-----------------------|---------------------|
| 1830 | 3000 | - |
| 1851 | 2324 | 151 |
| 1876 | 2463 | 345 |
| 1886 | 3287 | 465 |
| 1890 | 3534 | 496 |
| 1896 | 3781 | 578 |
| 1906 | 4478 | 680 |
| 1921 | 4923 | 791 |
| 1931 | 5588 | 882 |
| 1936 | 6201 | 946 |
| 1948 | 7679 | 922 |
| 1954 | 8449 | 984 |
| 1960 | 9602 | 1060 |
| 1966 | 12100 | 196 |
| 1971 | 14644 | - |
| 1978 | 17272 | - |
| 1980 | 18856 | |

Source: SEP *Tableaux de l'Economie Algérienne 1970*.

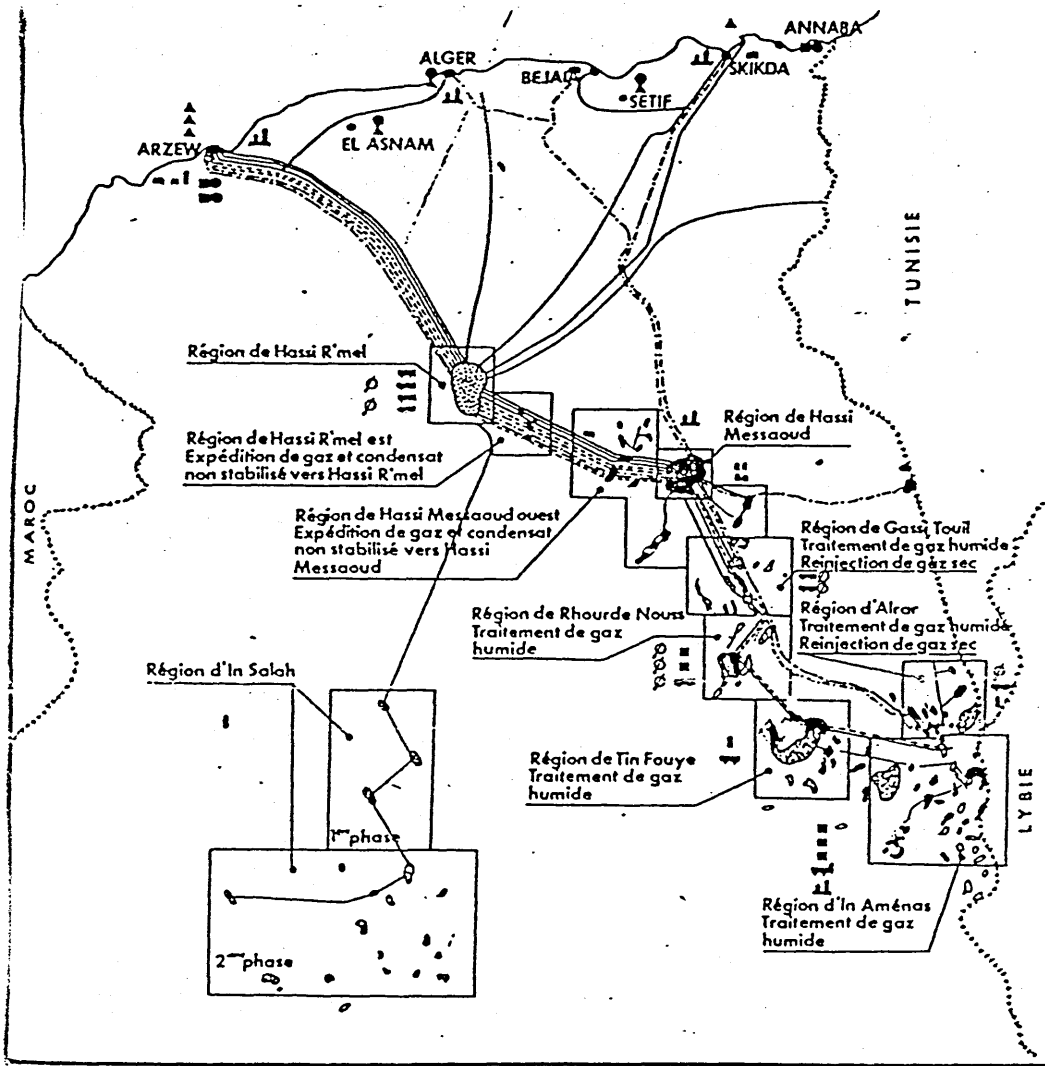
MPAT, *L'Algérie en Quelques Chiffres*, 1980

Recensement Général de la Population Algérienne, 1966 et 1977.

Annuaire Statistique de l'Algérie 1959, après Benmoune, M., The origin of the Algerian proletariat, in *Dialectical Anthropology*, 1, 1976, p.212, quoted in Molina, J. La Politique Agricole: Intégration inter-sectionnelle et évolutions structurelles, in *Les Politiques Agraires en Algérie*, *op. cit.* p. 368.

APPENDIX III.1

MAP OF THE HYDROCARBON PRODUCTIVE BASE
(MEKKIDECHE, 1983 p. 52)



LEGENDE

- . Champ de gaz
- . Champ de pétrole
- . Gazoduc
- . Pipe condensat
- . Unité de liquéfaction
- . Unité simple d'extraction du brut et condensat
- . Station d'injection gisement gaz
- . Stockage et chargement brut et condensat
- . Stockage séparation et chargement GPL
- . Pipe GPL
- . Oléoduc
- . Unité de traitement. Gaz de spécification
- . Unité de GPL. Gaz de spécification
- . Raffinerie
- . Complexes pétrochimiques
- . Unité transformation plastiques

APPENDIX III.2

DATA ON THE OIL INDUSTRY PRODUCTIVE BASE

1. The Hassi Messaoud Refinery

Structure of Output (1967) tons

| | |
|---------------|---------------|
| Diesel 40,000 | Butane 4,000 |
| Petrol 12,000 | Propane 2,000 |

Source: Mazri H., *Les Hydrocarbures dans l'Economie Algérienne*, SNED, Alger p.54

2. The Algiers Refinery

Structure of Output

Fuels 2.5 mt/year
LPG 110,00 t/year

Source: Mekkideche, (1983) *Le Secteur des Hydrocarbures*, OPU, Alger, p.83.

3. The Arzew Refinery

Structure of Output (tons)

| | |
|-----------------|-------------------|
| LPG 84,000 | Fuel Oil 888,000 |
| Petrol 130,000 | Lubricants 50,000 |
| Premium 220,000 | Asphalt 60,000 |
| Naphtha 387,000 | Bitumen 50,000 |
| Jet Fuel 15,000 | Grease 2,600 |
| Diesel 588,000 | Paraffin 5,000 |

Source: Mazri, H. *op. cit.*, p.124.

4. The Skikda Refinery

Structure of Output (tons)

| | |
|------------------------------|---------------------------------|
| Propane 100,000 | Jet Fuel 46,000 |
| Butane..... 390,000 | Diesel 3 x 10 ⁶ |
| Naphtha 35 x 10 ⁶ | Peroxylyene 38,000 |
| Petrol 720,000 | Xylene Mixture 247,000 |
| Benzene 90,000 | Fuel Oil 4.68 x 10 ⁶ |
| Toluene 5,000 | Bitumen 25,000 |

Source: *Petroleum Economist* No.41 (1974) p.229.

APPENDIX III.3

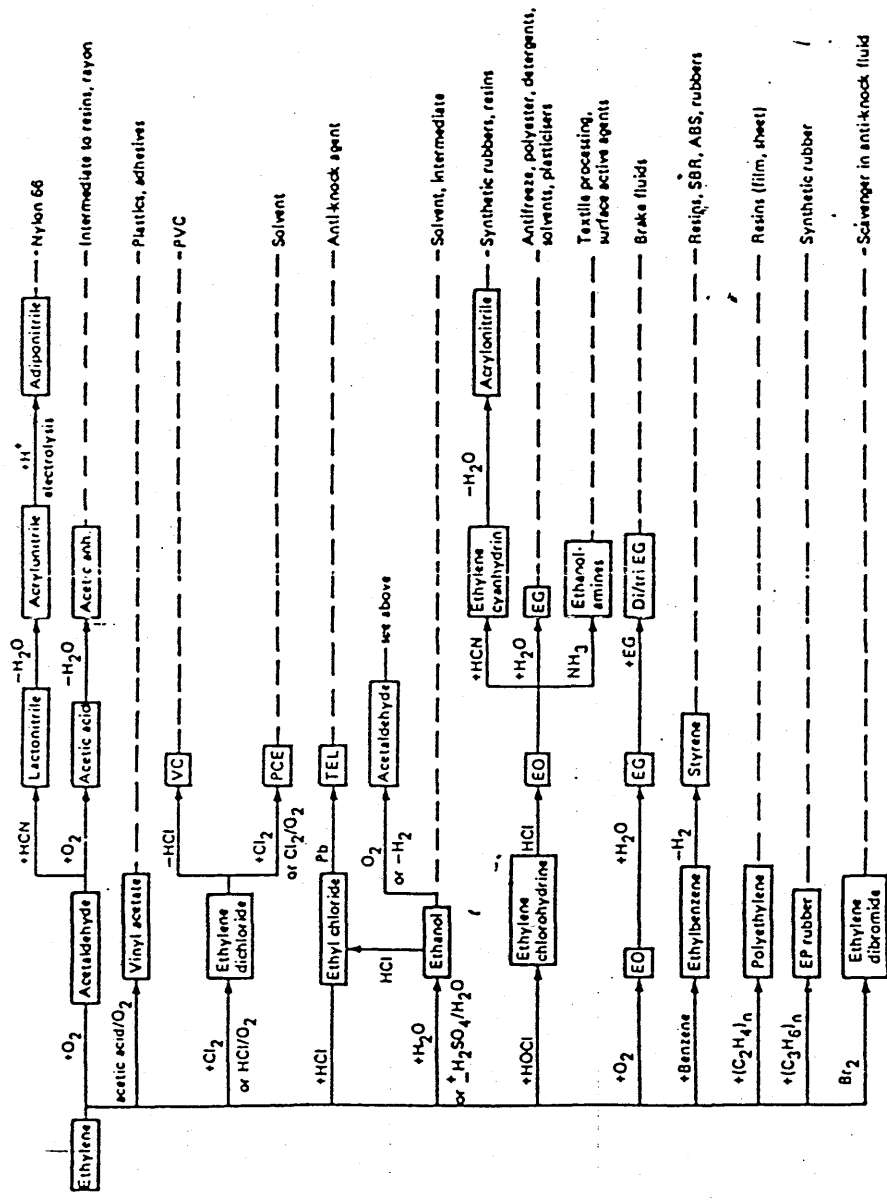


Figure 1 Raw material: ethylene

APPENDIX III.3 continued

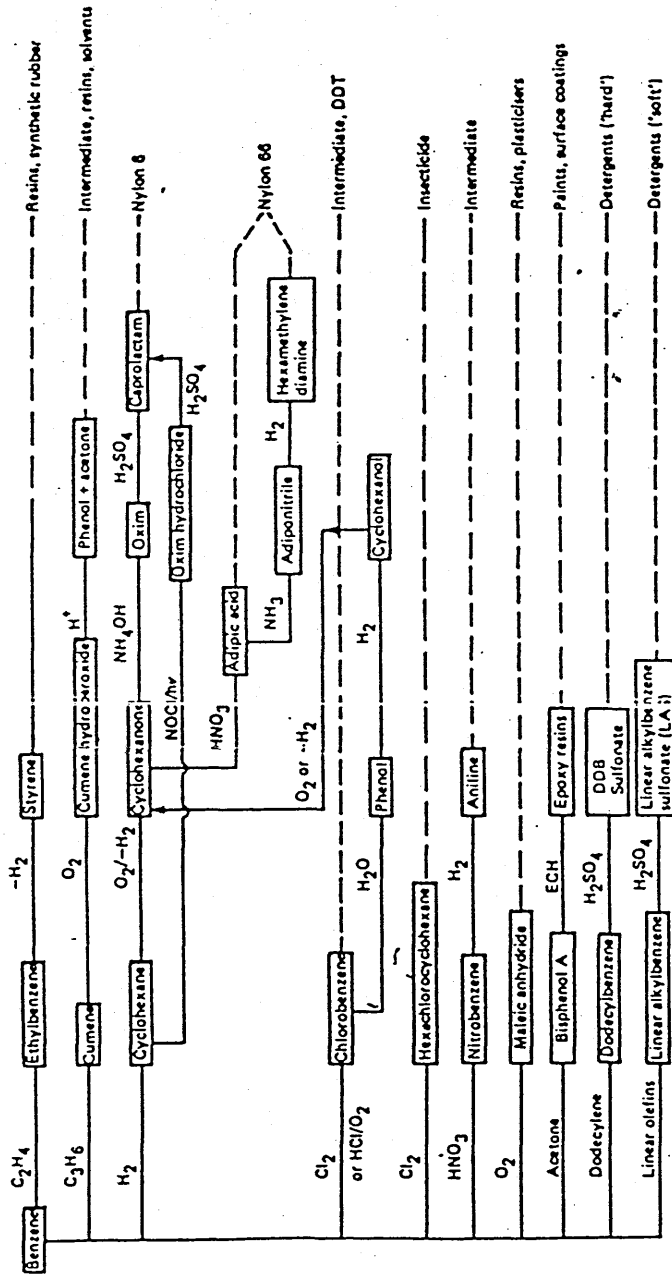


Figure 3 Raw material: benzene

APPENDIX IV.1Oil taxes levied by Algerian government (10⁶ dinars)

| 1963 | 1964 | 1965 | 1966 | 1967 | 1968 | 1969 (est.) |
|-------|-------|-------|-------|-------|--------|-------------|
| 257.3 | 295.0 | 376.7 | 631.7 | 800.4 | 1133.9 | 1320 |

Source: *Statistiques Financières 1968*, édité par la Direction Générale du Plan et des Etudes Economique - Sous Direction des Statistiques, p. 17, quoted in Mazri, H. *op.cit.*, p.69.

**APPENDIX IV.2
SONATRACH SUBSIDIARIES**

| | Sonatrach Share | Partner | Creation | Object |
|---|--------------------|--|----------|--------------------------------------|
| 1. <u>Exploration and Production</u> | | | | |
| ALFOR | 51% | Inc. SELSO | 1966 | Drilling |
| ALGEO | 51% | Independentex | 1967 | Geophysic Studies and Research |
| ALDIA | 51% | Dresser Ind. USA | 1970 | Exploration |
| ALTEST | 51% | Baker Oil Inc. | 1970 | Exploration |
| ALFLUID | 51% | Davins and Chemical Inc. | 1969 | Mud Work |
| ALDIM | 51% | Christensen Inc. | 1970 | Diamond Tools |
| 2. <u>Civil Engineering Pipeline</u> | | | | |
| ALTRA | 100% | - | 1969 | Civil Engin- eering |
| ALGEO | 30% | SNERI (10%) Sonocome (10%) SNS (10%) DIAG (15%) | | Industrial Work |
| ALLOTRA | 51% | Incica | 1975 | Civil Engin- eering |
| ALCIP | 100% | | 1974 | Pipe Work |
| SEGAMO | 50% | Gaz de France (25%) ENAGAS (25%) | 1976 | Pipes |
| 3. <u>Mechanic</u> | | | | |
| ALEIP | 100% | | 1974 | Pipeline Engineering |

Source: Temmar, H. (1983) *Stratégie de Développement Indépendent*, OPU, Alger, p.213.

APPENDIX IV.4
FINANCIAL STRUCTURE OF THE SAHARAN OIL INDUSTRY
AS PERCENTAGE OF INVESTMENT

| | 1962 | 1965 | 1969 | 1972 |
|--|------|------|-------|-------|
| a. <u>Crude oil production</u> | | | | |
| Algerian Companies | 10.0 | 11.8 | 25.0 | 77.0 |
| French Companies | 70.0 | 70.4 | 70.0 | 22.7 |
| Non-French Companies | 20.0 | 17.8 | 5.0 | 0.3 |
| b. <u>Pipelines</u> | | | | |
| Algerian Companies | 9.0 | 9.0 | 52.0 | 100.0 |
| French Companies | 75.0 | 60.9 | 34.0 | 0.0 |
| Non-French Companies | 16.0 | 30.1 | 14.0 | 0.0 |
| c. <u>Refineries</u> | | | | |
| Algerian Companies | 4.0 | 10.0 | 56.0 | 97.3 |
| French Companies | 38.0 | 32.0 | 20.0 | 2.7 |
| Non-French Companies | 58.0 | 58.0 | 24.0 | 0.0 |
| d. <u>Domestic Distribution</u> | | | | |
| Algerian Companies | 0.0 | 0.0 | 100.0 | 100.0 |
| French Companies | 35.0 | 35.0 | 0.0 | 0.0 |
| Non-French Companies | 65.0 | 65.0 | 0.0 | 0.0 |

Source: Brogini, M. (1973) *L'Exploitation des Hydrocarbures en Algérie*, (Montpellier) p.231, quoted in Himberg, H. *op.cit.*, p.256.

APPENDIX IV.5
INDEMNIFICATION OF FRENCH COMPANIES (10⁶ dollars)

| Company | Indemnification |
|-----------------|-----------------|
| CFP | 60 |
| ERAP and others | 40 |
| TOTAL | 100 |

Source: Madelin, H. *op.cit.*, p.184.

APPENDIX V.1

CIF PRICES EQUALISATION

Table a: Equalisation in Great Britain (end of 1947)

| | 36° Iranian (Abadan) | | 36° W. Texas (Gulf Coast) | |
|----------------|----------------------|------|---------------------------|------|
| Posted price | 2.22 | \$/b | 2.75 | \$/b |
| USMC freight | 1.55 | | 1.02 | |
| CiF price (GB) | 3.77 | | 3.77 | |

Table b: Equalisation in USA and Great Britain (end 1948)

| | New York | | Southampton | |
|--------------|---------------------------|---------------------------|---------------------------|-------------------------|
| | W. Texas Sour 36° Gulf | Oficina 36° P. La Cruz | Oficina 36° P. La Cruz | Arabia 36° R. Tenura |
| Posted price | 2.75 | 2.65 | 2.65 | 2.03 |
| USMC freight | 0.38 | 0.38 | 0.87 | 1.45 |
| US fax | .105 | | | |
| Quality = | | | | 0.04 |
| CiF price | 3.135 | 3.13 | 3.52 | 3.52 |

Table c: Equalisation at New York (end 1949)

| | W. Texas Sour 36° Gulf | Oficina 36° P. La Cruz | Arabia 36° R.Tenura |
|--------------------|---------------------------|---------------------------|------------------------|
| Posted price | 2.75 | 2.65 | 1.75 |
| USMC - 35% freight | 0.25 | 0.25 | 1.10 |
| US Tax | | .105 | .105 |
| Quality = | | | |
| CiF price | 3.00 | 3.005 | 2.995 |

Source: Rifaït, T. (1974) *Le Prix du Pétrole Brut. Economie du Marché ou Stratégie de Puissance*. Ed. Technip, Paris, p.75.

APPENDIX V.2

EVOLUTION OF THE POSTED PRICES (\$/b)

| | Saudi Arabia | USA | Algeria | Venezuela |
|------|--------------|------|---------|-----------|
| 1948 | 2.06 | 2.68 | | 2.65 |
| 1949 | 1.81 | 2.68 | | 2.65 |
| 1950 | 1.71 | 2.68 | | 2.65 |
| 1951 | 1.71 | 2.68 | | 2.65 |
| 1952 | 1.71 | 2.68 | | 2.65 |
| 1953 | 1.81 | 2.98 | | 2.10 |
| 1954 | 1.93 | 2.98 | | 2.90 |
| 1955 | 1.93 | 2.98 | | 2.90 |
| 1956 | 1.93 | 2.98 | | 2.84 |
| 1957 | 1.99 | 3.38 | | 3.05 |
| 1958 | 2.06 | 3.28 | | 3.05 |
| 1959 | 1.90 | 3.28 | | 2.84 |
| 1960 | 1.87 | 3.28 | | 2.80 |
| 1961 | 1.80 | 3.28 | 2.65 | 2.80 |
| 1962 | 1.80 | 3.10 | 2.65 | 2.80 |
| 1963 | 1.80 | 3.10 | 2.35 | 2.80 |
| 1964 | 1.80 | 3.10 | 2.35 | 2.80 |
| 1965 | 1.80 | 3.10 | 2.35 | 2.80 |
| 1966 | 1.80 | 3.10 | 2.35 | 2.80 |
| 1967 | 1.80 | 3.10 | 2.35 | 2.80 |
| 1968 | 1.80 | 3.10 | 2.35 | 2.80 |
| 1969 | 1.80 | 3.30 | 2.35 | 2.80 |
| 1970 | 1.80 | 3.40 | 2.65 | 2.80 |

Source: Mezri, H. *op. cit.*, p.80.

APPENDIX V.3

EVOLUTION OF OIL EXPORTING COUNTRIES' PARTICIPATION

| Country | Participation % | Company | Date |
|--------------|-----------------|------------------|------------|
| Abu Dhabi | 25 | ADPC, ADMA | Oct. 1972 |
| | 60 | ADPC, ADMA | Oct. 1974 |
| | 100 | Gas exploitation | Jan. 1976 |
| Saudi Arabia | 25 | ARAMCO | Oct. 1972 |
| | 60 | ARAMCO | Jan. 1974 |
| | 100 | ARAMCO | March 1976 |
| Kuwait | 25 | KOC | Oct. 1972 |
| | 100 | KOC | Dec. 1975 |
| | 100 | Aminoil | June 1977 |
| Quatar | 25 | QPC | Oct. 1972 |
| | 60 | QPC | April 1974 |
| | 100 | QPC | Sept. 1976 |

Source: Sid-Ahmed, A. (1980) *L'Opep. Passé, Présent et Perspective*. OPU, Alger, p.113.

APPENDIX V.4

COMPARISON OF SPOT AND OFFICIAL PRICES 1978-80 (\$/b)

| Year | Spot | Gulf - Arabian Light (34 ⁰) | | | | Libyan Zuetina (41 ⁰) | | |
|-------|-------|---|---------|----------|----------|-----------------------------------|-------|--------|
| | | Off.(1) | Off.(2) | Diff.(1) | Diff.(2) | Spot | Off. | Diff. |
| 1978 | | | | | | | | |
| Jan. | 12.65 | 12.70 | 12.70 | -0.05 | -0.05 | 13.85 | 14.0 | -0.20 |
| Feb. | 12.65 | 12.70 | 12.70 | -0.05 | -0.05 | 13.85 | 14.0 | -0.20 |
| March | 12.65 | 12.70 | 12.70 | -0.05 | -0.05 | 13.75 | 14.0 | -0.30 |
| April | 12.67 | 12.70 | 12.70 | -0.03 | -0.03 | 13.75 | 13.90 | -0.15 |
| May | 12.72 | 12.70 | 12.70 | +0.02 | +0.02 | 13.75 | 13.90 | -0.15 |
| June | 12.72 | 12.70 | 12.70 | +0.02 | +0.02 | 13.75 | 13.90 | -0.15 |
| July | 12.77 | 12.70 | 12.70 | +0.07 | +0.07 | 13.75 | 13.90 | -0.15 |
| Aug. | 12.79 | 12.70 | 12.70 | +0.09 | +0.09 | 13.85 | 13.90 | 0.05 |
| Sept. | 12.80 | 12.70 | 12.70 | +0.10 | +0.10 | 14.00 | 13.90 | +0.10 |
| Oct. | 13.00 | 12.70 | 12.70 | +0.30 | +0.30 | 14.50 | 13.90 | +0.60 |
| Nov. | 14.90 | 12.70 | 12.70 | +2.20 | +2.20 | 16.25 | 13.90 | +2.35 |
| Dec. | 15.00 | 12.70 | 12.70 | +2.30 | +2.30 | 16.75 | 13.90 | +2.85 |
| 1979 | | | | | | | | |
| Jan. | 17.50 | 13.40 | 13.40 | +4.10 | +4.10 | 19.75 | 14.74 | +5.01 |
| Feb. | 23.00 | 13.40 | 13.40 | +9.60 | +9.60 | 26.00 | 15.42 | +10.58 |
| March | 21.00 | 13.40 | 13.40 | +7.60 | +7.60 | 24.00 | 16.12 | +7.88 |
| April | 21.50 | 14.55 | 16.35 | +6.95 | +5.15 | 24.50 | 18.30 | +6.20 |
| May | 34.50 | 14.55 | 16.95 | +19.95 | 17.55 | 36.00 | 21.31 | +14.69 |
| June | 34.00 | 18.00 | 18.00 | +16.00 | +16.00 | 36.50 | 21.31 | +15.19 |
| July | 32.00 | 18.00 | 20.00 | +14.00 | +12.00 | 36.00 | 23.50 | +12.50 |
| Aug. | 34.00 | 18.00 | 20.00 | +16.00 | +14.00 | 36.00 | 23.50 | +12.50 |
| Sept. | 35.00 | 18.00 | 20.00 | +17.00 | +15.00 | 37.00 | 23.50 | +13.50 |
| Oct. | 38.00 | 18.00 | 22.00 | +20.00 | +16.00 | 40.50 | 26.27 | +14.23 |
| Nov. | 40.00 | 24.00 | 26.00 | +16.00 | +14.00 | 43.00 | 26.27 | +16.73 |
| Dec. | 39.00 | 24.00 | 26.00 | +15.00 | +13.00 | 41.50 | 30.00 | +11.50 |
| 1980 | | | | | | | | |
| Jan. | 38.00 | 26.00 | 28.00 | +12.00 | +10.00 | 41.00 | 34.72 | +6.28 |
| Feb. | 36.00 | 26.00 | 28.00 | +10.00 | +8.00 | 38.50 | 34.72 | +3.78 |
| March | 36.00 | 26.00 | 28.00 | +10.00 | +8.00 | 38.00 | 34.72 | +3.28 |
| April | 35.00 | 28.00 | 28.00 | +7.00 | +7.00 | 37.50 | 34.72 | +2.78 |
| May | 35.50 | 28.00 | 30.00 | +7.50 | +5.50 | 38.50 | 36.72 | +1.78 |
| June | 36.00 | 28.00 | 30.00 | +8.00 | +6.00 | 37.50 | 36.72 | +0.78 |
| July | 34.50 | 28.00 | 32.00 | +6.50 | +2.50 | 36.50 | 37.00 | -0.50 |
| Aug. | 32.00 | 28.00 | 32.00 | +4.00 | - | 33.50 | 37.00 | -3.50 |

Off.(1): Official sale price set by Saudi Arabia for Arabian Light marker crude.
 Off.(2): Theoretical official price for marker crude used by other Gulf producers.

MARKER CRUDE PRICES 1978-80 (\$/b)

| | 1978 Dec. | 1979 Jan. | 1979 Dec. | 1980 Jan. | 1980 July | % increase July '80 Dec. '78 |
|--------------|--------------|--------------|--------------|--------------|--------------|------------------------------------|
| Saudi Arabia | 12.70 | 13.40 | 24.00 | 26.00 | 28.00 | 120.5 |
| Others | 12.70 | 13.40 | 26.00 | 28.00 | 32.00 | 152.0 |

Source: Seymour, I. (1980) *OFEC. Instrument of Change*. Macmillan, London, pp.192 and 193.

APPENDIX VII.1

STRUCTURE OF SOIL OCCUPATION IN THE STATE AGRICULTURAL
SECTOR (in percentage)

| | End of colonial period | 1966-69 | 1973-74 | 1974-77 |
|-----------------------|------------------------|---------|---------|---------|
| Fallow | 28.7 | 29.9 | 25.6 | 25.1 |
| Cereal | 30.7 | 31.3 | 34.2 | 34.9 |
| Vineyard | 12.3 | 12.3 | 7.8 | 7.8 |
| Other Fruit Trees | 1.3 | 1.9 | 2.9 | 3.5 |
| Citrus Fruit | 1.2 | 1.7 | 1.7 | 1.7 |
| Fodder Plant | 2.3 | 1.7 | 7.5 | 7.2 |
| Market-garden produce | 1.0 | 1.4 | 1.8 | 1.9 |
| Dry vegetables | 0.8 | 1.5 | 2.2 | 2.0 |
| Industrial produce | 0.5 | 0.5 | 0.7 | 0.5 |
| Others | 21.2 | 17.9 | 15.5 | 12.8 |
| Total | 100 | 100 | 100 | 100 |

Source: Statistiques agricoles A et B, quoted in Bedrani, S. (19) L'agriculture algérienne face au marché mondial, in *Les Politiques Agraires en Algérie, vers l'Autonomie ou la Dépendance?*, CREA, Alger, p.56.

APPENDIX VII.2:
YIELD FOR VARIOUS PRODUCES (quintal/hectare)

| | 1955-59 | 1974-77 |
|-----------------------|---------|---------|
| Cereals | | |
| Hard wheat | 6.6 | 5.94 |
| Soft wheat | 8.5 | 6.38 |
| Barley | 6.0 | 6.96 |
| Market-garden produce | 100 | 66.81 |
| Citrus fruit | 120.5 | 102.55 |
| Vineyard | 42.1 | 16.61 |

Source: Tableaux de l'économie algérienne et serie stat. A et B, quoted from Bedrani, S. (1981) *L'Agriculture Algérienne depuis 1966*, OPU, Alger, p.368.

APPENDIX VII.3:
EVOLUTION OF IMPORT OF AGRICULTURAL PRODUCTS
(quantity, base period, annual average 1967-69)

| Product | 1966 | 1967-69 | 1970-73 | 1974-77 | 1978 |
|--------------------|------|---------|---------|---------|-------|
| Meat | 100 | 100 | - | 1500 | 3900 |
| Milk products | 80.2 | 100 | 127.6 | 129.5 | 158.5 |
| Vegatables | - | 100 | 175.6 | 286.5 | 556.5 |
| Coffee, tea spices | 62.5 | 100 | 89.4 | 315.7 | 300.0 |
| Oil and fat | 83.0 | 100 | 132.8 | 238.2 | 286.0 |
| Sugar | 88.7 | 100 | 113.0 | 173.9 | 194.5 |
| Wood | - | 100 | 144.1 | 235.6 | 259.1 |
| Wool | - | 100 | 200.0 | 211.1 | 406.6 |
| Cotton | 32.1 | 100 | 123.8 | 160.7 | 130.0 |

Source: Douanes Algériennes, quoted in Bedrani, S. (19) L'Agriculture algérienne face au marché mondial, in *Les Politiques Agraires en Algérie, vers l'Autonomie ou la Dépendance?*, CREA, Alger, p.76.

APPENDIX VIII.1

DEGREE OF INTEGRATION OF SOME INDUSTRIAL UNIT IN EASTERN ALGERIA

| Unit | degree of integration |
|----------------------|-----------------------|
| heat engine | 80%7 |
| wheel trator | 60% |
| caterpillar tractor | 76% |
| machine-tool | 80% |
| public work material | 80% |
| welding and drilling | 50% |
| material | 50% |

Source: Djeddour, M. (1978) *Industrialisation et organisation de l'espace dans l'est algérien - les principaux traits d'un développement régional polarisé*. Thèse, 3ème cycle, *Urbanisme*, Grenoble, November, p.232, quoted in Hamel, B. (1983) *Système Productif Algérien et Indépendance Nationale*, OPU, Alger, p.400.

