Oil and Economic Development in Iran

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ABSTRACT

This thesis examines the effects of oil revenues on Iran's economy. Different aspects of the Iranian economy were studied in light of the past-1973 price increases in oil which resulted in higher oil revenues. The effect of oil on Iran's development plans, balance of payment, money supply, credit, imports, inflation, agriculture, urbanization and income distribution were studied.

It was found that oil had a dual effect on Iran's economy: while it provided Iran with sufficient funds to finance its development efforts and to increase its imports, it also created inflation, increased relative backwardness in agriculture, accelerated urbanization, and exacerbated inequalities in the distribution of income.

RESUME

Cette thèse étudie les effets des revenus de l'industrie petrolière sur l'économie de l'Iran. Plusieurs aspects de l'économie iranienne sont discutés à la lumière de l'augmentation des prix du pétrole de 1973, augmentation qui a abouti sur des revenus pétroliers plus élevés. Y sont également étudiés les effets du pétrole sur les plans de développement de l'Iran, les soldes créditeurs et débiteurs,

les provisions monétaires, le crédit, les importations, l'inflation, l'agriculture, l'urbanisation et la distribution des revenus.

Cette thèse découvre que le pétrole a eu un double effet sur l'économie de l'Iran; alors qu'il assurait à l'Iran les fonds nécessaires a son développement, et augmentait ses importations il entraina également l'inflation, engendra un retard relatif de l'agriculture, accélera l'urbanisation et approfondit les inégalites relatives à la distribution du revenu.

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Preface

Iran is the oldest and second largest[1] oil-producing country in the Middle East. After the oil-boom year of 1973, Iran like other members of the Organization of Petroleum Exporting Countries (OPEC) has benefited from substantial increases in oil revenue. However, oil revenue may be thought to have had positive as well as negative effects on the economic development of Iran.

Iran's rate of increase in GNP more than doubled in the first two post-OPEC price rise years of 1974 and 1975. Oil revenue enabled the Iranian government to prepare ambitious economic development plans with substantial increases in government expenditures. It also provided Iran with enormous sums of foreign exchange which fueled the expansion of the money supply and credit.

Oil money, however, had its negative effects on the economy as well. The injection of oil revenue into Iran's economy created inflation; a phenomenon which was relatively unknown to the country before 1973. The agricultural sector had declines in its growth rate; new rural immigrants towards urban centers created severe infrastructural problems; income distribution deteriorated due to the new riches of the country and there were massive increases in military expenditures and imports of arms. Besides military imports,

almost every sector of the economy had a major element of imports which on one hand provided the required inputs for economic development and on the other hand, had a stabilizing effect on prices.

This thesis is by no means a complete survey of the relationship between oil revenues and economic development. In the following chapters, an attempt will be made to shed some light on the effect of oil revenue on the economic development of Iran. In chapter I, a theoretical framework is sketched out. The role of oil revenue in Iran's development plans will be dealt with in chapter II. In chapter III, other contributions of oil to Iran's economy will be considered.

Chapters IV and V will concentrate on the costs of sharp increases in oil revenues. Concluding remarks are contained in chapter VI.

CHAPTER I

The Theoretical Framework

1. Introduction

Reserves of scarce mineral resources are concentrated in relatively few countries. Due to the scarcity of these resources in the world as a whole, their prices can be expected to rise with growth in demand. Furthermore, economic self interest may lead the owners of the resources to form a producer's cartel which could act to push prices even higher. In the case of oil, exporting governments share in common the great need for quick revenues. They are more inclined to exploit the short or intermediate-run dependence of foreign users of their commodity, thus increasing their own economic dependency on oil revenues.

Oil itself has a minor direct development effect, as linkages with the rest of the economy tend to be limited. The only substantial effect is the income which it brings for the state. Since oil is a wasting asset, the government's general aim will be to decrease the oil dependency of the economy and to develop the country and diversify the economy as fast as possible, before oil runs out. That is, other economic activities in these countries must be able to provide sufficient government revenues, foreign exchange and

employment when the time comes that oil revenue decreases or completely ceases. During the process of development, the OPEC members are eager to convert their exhaustible oil into capital investments, at home or abroad. Faced with a sudden and huge influx of oil money, these countries immediately prepare and formulate an ambitious economic plan.

Public revenues in these countries comprise a very large percentage of the national income. In the extreme, as in Kuwait, the public revenues are "neither due to ordinary tax receipts from the domestic sector, nor are they returns on public enterprise as in the socialist countries. More generally, there is a unique situation, almost without parallel in history, where economic prosperity and progress are largely independent of a domestically-produced economic surplus and its size."[3] As the controller general of Venezuela pointed out "in many countries, being rich is a consequence of the efforts and works of the people. When you make something you can manage it. The creation of wealth and its management are part of a process. We never had such a process. The wealth came out of the earth. We have a consequence without a cause."[4]

The resource exporting government's overall objectives, therefore, would be maximizing gains from exports of natural resources, protecting the country's consumer interests, safeguarding resources for future needs and encouraging resource-based industrial development.[5] These general objectives can be summarized by the following set of goals:[6]

1. to develop the country through investments that provide the highest expected return for any given level of economic and political risk.
2. to increase the domestic standard of living.
3. to maintain and strengthen the stability of the regime, to increase national security and the country's political power.

In order to achieve these goals, the revenue from natural resources can be allocated among the following main areas:

1. Domestic invesment for economic development and growth, i.e., domestic spending on development plans, importing intermediate and capital goods.
2. Public and private consumption in order to raise the standard of living and public welfare, i.e., importing consumer and agricultural products and food subsidies.
3. Throwaway spending[7], i.e., spending that increases neither public welfare nor production capacity. An example of this type of spending would be the excessive military spending which is made possible by the vast amount of easy-come oil money. This contributes little to either economic growth or to the

standard of living. It might be justified by a presumed contribution to national security or the strengthening of the regime.

2. Objectives of Development Planning

The governments of these countries are under pressure to improve the economic well-being of their citizens due to increases in oil revenues. Therefore, their launching of an effective economic development program is affected to that end. They increase the level of consumption to raise the standard of living. However, primary allocation of oil revenue to current consumption will not efficiently increase the level of achievement of other goals. Furthermore, consumption if not accompanied by investment and saving, will fall drastically as soon as the flow of revenue drops. Moreover, the increased oil revenues cannot be consumed immediately as there are limits on the rate of increase in consumption.

Investments that generate future income will raise the standard of living more efficiently than immediate spending on imports of goods and services. Expected return and risk are generally considered to be major criteria of business investment. Risks can be reduced by diversification, i.e., by investing in a number of opportunities thereby creating a

mixed portfolio.

Both domestic and foreign investment contribute to the goal achievement. They both have positive effects on the standard of livng since the return of foreign investment can make future resources available to increase the standard of living. Domestic investment, however, has a clear-cut effect for the country's economic development, national security and the stability of the regime. The proportion of total investment which is allocated to each type - for maximization of goal achievement - depends on the choice of the specific level of return and the respective lowest risk which in turn is a matter of the individual country's preference. However, due to the desire for fast development, domestic investment is likely to absorb a growing part of the oil revenues.

The injection of large sums of oil revenue creates new sets of problems. Inflation is one of these problems. The sudden and substantial increases in oil revenue leads to the corresponding injection of oil money through government expenditures and credit expansion in the private sector, which in turn leads to corresponding increases in money supply. On the supply side, the country's available goods and services has to increase proportionately in order to maintain relative price stability. Massive foreign exchange generated from oil revenues leads to corresponding increases in imports. However, due to the structural rigidities that exist in a Less Developed Country (LDC), and also due to the

higher relative monetary expansion, the supply side of the economy cannot expand accordingly, or at least by the same proportion. This creates an inflationary gap, which finally leads to relatively high rates of inflation[8], compared to the pre-oil boom period. Furthermore, the desire to develop as quickly as possible will lead to the creation of urban employment opportunities which is due to implementation of economic plans. This in turn results in rapid urbanization. The new wave of demand in these areas cannot anymore be satisfied by the present trend in agricultural products, particularly when the agricultural-rural producers become the urban-agricultural consumers. The relative backwardness of agriculture in favour of industrialization intensifies the problem. Instead, unlimited foreign exchange earnings turn to a general license for imports to satisfy the newly created urban demand. The agricultural sector, therefore, not only loses its relative priority, but there seems to be a negative linkage between oil revenues and agricultural production[9].

These new oil-induced problems - inflation, increasing neglect of agriculture, urbanization, sudden and enormous increase in imports, the worsening of income distribution, the shortages of electric power and skilled manpower, etc. - will, therefore, be added to the pre-existing structural problems inherent in being less developed such as illiteracy, lack of efficient communication, etc. One tends to believe that inevitably, there is bound to be a lot of confusion, mismanagement, waste, lack of coordination and considerable duplication of efforts.

3. An Economic Model[10] for an Oil Exporting Country

The model can be summarized as follows:

the economic resources (all in current prices) are:

GDP^* = Gross Domestic Product, excluding the oil industry

A = total product of the oil industry

$r\,k$ = return on foreign investment, where k is the accumulated stock of foreign investment, and r is the rate of return.

The Gross National Product (GNP) for the year t would be:

$$GNP_t = GDP_t^* + A_t + rk_t \qquad (1)$$

The economic uses (all in current prices) are:

C = Consumption

I = Gross domestic investment

G = Government expenditures on domestic goods and services

X_t = total exports (oil and non-oil goods and services)

M_t = total imports (including government import of goods and services)

Nx_t = $X_t - M_t$ = net exports which can be positive if

$X_t > M_t$, negative if $X_t < M_t$

or zero if $M_t = X_t$

The Gross National Product would be:

$$GNP_t = C_t + I_t + G_t + Nx_t \qquad (2)$$

Due to the specific characteristics of oil - low price elasticity of demand, high income elasticity of demand, the existence of an aggressive cartel - the unit price of a barrel of oil has been increasing in the world market. Furthermore, as long as marginal cost of production of oil is less than the anticipated price, there is an incentive to produce more. The value of A, therefore, is rising over time, causing GNP in real terms to increase over the long run, through the following mechanism:

1. increase in 'k' (assuming r is constant): net addition to 'k' in the current period increases the capital stock held abroad in the subsequent period(s) and thereby increases GNP in the long run.
2. increase in GDP* in real terms: the portion of 'A_t' which is spent on developmental projects would increase production capacity of the economy in the following periods and thereby GDP* in real terms over the long run.

Discussion of government development plans is therefore one of the major objectives of this thesis. The quantitative link between development projects and increase in real output may well be expressed in terms of the incremental capital output ratio as detailed in chapter II.

In the long run, however, if the price of oil continues to increase drastically, the conservation measures in the industrialized countries and their incentive to search for a cheaper source of energy, may lead to a decrease in the value of 'A'.

Increase in GDP* depends on the degree of industrialization and development and economic growth. However, due to the fact that the country is in the early stages of industrialization and development, this item in equation 1 will have an increasing trend as well, especially when the long run implication of increase in 'A_t' (as discussed above) is taken into account. The rate of increase in 'r k ' may not be considerable since the country needs most of its income to spend domestically. This is due to the impatient desire of these countries for development, particularly for the more populated countries with relatively higher absorptive capacity.[11] 'A_t' therefore, constitutes the major factor for pushing GNP_t upward.

Among the factors that prevent GNP from growing in real terms are the limitations of relative absorptive capacity. These factors could also include throwaway spending (TS_t) since it is the victim of easily earned money of oil. Furthermore, imports of consumer goods and services would not increase the capacity of the country to produce more. If TS_t rises, it will necessarily lead imports to rise since an increase in domestic military spending will require substantial increases in imports of military equipment and

services. In addition the development process itself requires several factors of production - capital and intermediate goods, managerial and organizational expertise, etc. - to put together in use of development. The supply of these factors are limited in LDC. The only alternative would be, therefore, to import these factors of prodution. Besides, if the priority is shifted from agriculture to industry - a trend which is likely to occur since these countries are too impatient for development to wait for time-consuming agricultural results, when they can spend their easy and ready money from oil to import in no time - then the import of agricultural products are needed to satisfy the new and growing urban demand which is created by increases in 'A_t' and urbanization. 'Nx_t', therefore, will constantly be under pressure to decline. The actual value of GNP in a specific period will depend on the country's overall economic performance in that time.

4. The Allocation of OPEC's Surplus

It is important to study the effect of massive oil payments by oil importers to oil exporters. There are several factors which indicate that the conventional adjustment mechanisms are irrelevant to the OPEC surpluses.[12] The domestic economies of the surplus oil-exporting countries are such that they are isolated from changes in oil

revenues and from the resulting shifts in the balance of payments, whereas the conventional theories of balance-of-payments adjustment are based on direct linkage between shifts in the balance of payment and the domestic economy.

The OPEC members receive their export revenue in foreign exchange and they do not have to provide parallel local currency payments to domestic residents.[13] Furthermore, the oil-importing countries as a group do not need to convert their currencies into the currencies of oil-exporting countries to make the transfer because the payment currency for oil imports are actually the currencies of certain importing countries.[14]

An increase in export receipts, therefore, puts no upward pressure on the exchange rate for OPEC members. The OPEC surplus economies do not have to adjust to monetary expansion and rapid increase in disposable income through inflation and increases in imports. The governments of OPEC countries receive the surpluses and therefore, the internal economic variables such as money supply and domestic incomes are not "automatically" affected. If the internal variables were affected, then it has been due to the decision of the government of the oil-exporting country. In other words these governments do not remain passive and adjustments are due to changes in their policies. Otherwise the passivity of OPEC governments would result in substantial changes in exchange rates and domestic money supplies. "The fact that

some economic agents (the governments of the OPEC countries) who receive virtually all of the oil revenue also determine what imports will be purchased and how the remaining surplus will be invested abroad, makes the normal definition of a balance-of-payments surplus arbitrary or meaningless for these countries."[15]

The surplus of oil-exporting countries are the deficits of oil-importing countries which lead to an overall payment disequilibrium that is the direct result of the isolation of the internal economies of OPEC members from their international sectors. However, if the traditional forces resulting from the classical theory of transfers were to produce adjustment, a harsh adjustment mechanism would be created: if OPEC countries set prices and received oil in their local currencies, a floating exchange rate policy would result in a sharp appreciation for a number of OPEC currencies and parallel increases in the U.S. dollar price of oil. This appreciation of OPEC countries would be higher if OPEC decided not to make investments abroad. A fixed exchange rate policy of OPEC, under similar circumstances would result in rapid inflation in OPEC countries which in turn would lead to a rapid increase in imports. A parallel deflation in the oil-importing countries would have produced a severe recession. The classical adjustment process, therefore, is not always to be preferred over a continuing disequilibrium.[16] Particularly the fact that the OPEC

surplus countries are willing to continue accumulating financial claims on the importing countries, makes the traditional adjustment processes unnecessary.

The Keynesian transfer approach[17] (the absorption approach) cannot be usefully applied to the oil deficit problem either. According to this theory, to correct the balance of payments disequilibrium, the OPEC's surplus or the oil-importers' deficit should be decreased or eliminated which in turn requires either the increase in absortpion capacity of OPEC countries or the decrease in that of oil importing countries. However, due to certain structural characteristics of most OPEC countries - small population, shortages in infrastructure - the absorption capacity of these countries cannot be increased, even if they can spend all their foreign exchange earnings on current imports in the short run,[18] there would be a limit to how much a surplus OPEC member can afford to suffer inflation just to achieve external equilibrium. The advanced oil importing countries, on the other hand, also have difficulties in reducing their absorption capacity, since it leads to economic recession and trade war among themselves.[19]

In this view, OPEC members can therefore isolate their economy from the exogenous factors of increases in oil revenue. They can control the level of injection of oil money into their economies. The existing inflation and increase in imports in their countries are in fact due to

their own desire to develop in a relatively short period of time. This reaction to increase the oil revenue is, therefore, voluntary and is due to their setting of priorities to develop and import as quickly as possible.

Iran is a prime example of this situation. The country's ambitious development plans led to a situation in which the adjustment mechanism to the huge increases in oil revenue has been through inflation, imports, and military spending. In the process of adjustment, agricultural development was ignored, massive migration towards urban areas took place and the distribution of income deteriorated. However, the positive effects of oil revenue on Iran's economy - the financing of economic development plans and hence massive increases in government expenditure - cannot be denied.

REFERENCES

1. This is not applicable after the 1979 Iranian revolution, when the oil production varied greatly due to the political factors.

2. This actually started in 1971. For details, see chapter II, section 2.

3. M.A. Katouzian, "Oil Versus Agriculture, A Case of Dual Resource Depletion in Iran", Journal of Peasant Studies, 5 (April 1978), p.348.

4. Walter J. Levy, "The Years that the Locust Hath Eaten: Oil Policy and OPEC Development Prospects", Foreign Affairs, 57 (Winter 1978/79), p.300.

5. Zuhajr Mikdashi, The International Politics of National Resources, (Ithaca and London: Cornell University Press, 1976), p.19.

6. Hain Ben-Shahar, Oil: Prices and Capital, (Lexington, Mass.: Lexington Books, D.C. Heath, 1976), pp.73-74.

7. Ibid., p.74.

8. The relevant theories of inflation will be discussed in greater detail in chapter IV.

9. Katouzian, op.cit., p.357.

10. Ben-Shahar, op.cit., pp.81-82. The same notation has been used for simplicity.

11. Absorptive Capacity: The amount of investment that can be undertaken within a plan period without reducing the marginal contribution of the last 'block' of capital below a certain level (x). If (x) is equal to zero, the absorptive capacity would then be the total amount of capital that could be invested during the plan period and still add something to future income. For more details, see Benjamin Higgins, Economic Development, Problems, Principles and Policies, 2nd Edition, (New York: W.W. Norton & Company Inc., 1968), pp.579-582.

12. Robert M. Dunn, Jr., "Exchange Rates, Payments, Adjustments and OPEC: Why Oil Deficits Persist", Essays in International Finance, No. 137 (December 1979), pp.2-3.

13. Ibid., p.3.

14. Yoon S. Park, Oil Money and the World Economy, (Boulder, Colorado: Westview Press, Inc., 1976), p.139.

15. Dunn, op.cit., p.7.

16. Ibid., pp.8-10.

17. The Keynesian theory of transfer has also been called the 'absorption approach', since it views the foreign trade balance as the difference between a country's total production of goods and services. An improvement of the foreign trade balance, therefore, should be adopted through the reduction of absorption relative to production. See: Lloyd A. Metzler "The Transfer Problem Reconsidered", Journal of Political Economy, 50 (1942), p.398; Bo Sodersten, International Economics (London, Macmillan and Co. Ltd. 1971), p.450.

18. For a dynamic adjustment model which includes a time element, see Park, op.cit., pp.55-68.

19. Ibid., pp.54-55.

CHAPTER II

Role of Oil Revenues in Iran's Development Plans

1. Introduction

During the decade prior to 1973, Iran's GNP grew at a compound annual rate of 9.4 percent (see table 1). Following the oil-price increases in the 1970's and especially since 1973, Iran's oil revenue increased substantially. This led to an accelerated economic expansion, with the real growth rate of GNP reaching 42 percent in 1973 and 39 percent in 1974. The average compound rate of growth of GNP reached 20.4 percent for the period 1973-1977. Oil revenues, therefore, permitted the country to avoid financial constraints and to achieve high rates of economic growth.

In order to illustrate the role of oil in Iran's economy, this chapter is devoted to a brief history of oil production in Iran, the trend of oil price increases, their effect on the economy, on foreign exchange receipts, on money supply and credit expansion.

2. Brief History of the Iranian Oil Industry

Available empirical evidence indicates that the

TABLE (1)

Iran: Real GNP (1954-77) In Constant (1974) Prices

Year	GNP (Billion Rials)	% Change
1954	264.5	-
1955	271.9	2.8
1956	366.3	34.7
1957	403.3	10.0
1958	534.6	32.6
1959	562.4	5.2
1960	590.3	5.0
1961	616.0	4.3
1962	652.5	6.0
1963	690.0	5.7
1964	723.1	4.8
1965	764.9	5.8
1966	809.3	5.8
1967	861.3	6.4
1968	965.2	12.0
1969	1047.1	8.5
1970	1173.1	12.0
1971	1357.6	15.7
1972	1594.7	17.5
1973	2267.3	42.0
1974	3149.6	39.0
1975	3210.8	2.0
1976	3722.0	16.0
1977	3837.4	3.1

	Average Annual Rate
1954-66	10.2
1967-72	12.0
1973-77	20.4

Sources: The Statistical Yearbook of Iran, 1977, p.662 1972, pp.680-682;
Bank Markazi Iran: Economic Report and Balance Sheet, 1977, p.163.

combined impact of direct and indirect influences of the Iranian oil industry during the first forty years of its operation (1910-1950), was not great enough to help the economy in the direction of self-sustained growth. Under general concessions for the exploitation of oil in Iran, exclusive rights of exploration, production and refining of oil was granted to foreign companies and individuals. For example, in 1901, William Knox D'arcy, a British subject, obtained exclusive rights of the exploration, production and refining of oil for a period of sixty years. After 1908, a new company, the Anglo Persian (Anglo-Iranian) Oil Company was established and took over all rights and privileges of the first exploration company. These conditions continued until March, 1951, when the Iranian parliament nationalized the oil industry throughout the country. In October 1954, the National Iranian Oil Company (NIOC) took legal ownership of Iran's oil revenues and assets.

After the 1954 oil agreement, Iran's revenue per barrel of oil quadrupled compared with the pre-nationalization period. Nevertheless, the 50-50 division of profit agreement was considered unsatisfactory. The 1957 oil laws gave the NIOC sole responsibility for the development of the nation's oil resources throughout the country. These two new agreements provided the ground work for a 75-25 percent division of the net profit in

favour of Iran. Immediately following this, several other agreements with similar profit-sharing ratios were concluded between Iran and foreign oil concerns, under which Iran also received the sum of $185 million in 1964 as a down-payment "bonus"[1]. A contractual arrangement with several French oil interests raised the share of profits accruing to Iran to 90 percent of the total profit. According to the general arrangement concluded in Tehran in February 1971,[2] between the major oil companies and the six OPEC members in the Middle East (Abu Dhabi, Iran, Iraq, Kuwait, Qatar and Saudi Arabia), oil prices were pushed upward. Iran benefitted handsomely from the large increases in oil prices, through the collection of a vastly increased monopoly rent because of the inelasticity of demand in oil consuming countries. In July 1973, Iran took complete control over oil production from consortium oil companies. Iran now negotiates items of sale directly with foreign buyers rather than indirectly with members of the consortium. A buyer-seller relationship in the oil marketplace was thus put into effect as opposed to the former concessionary agreements with international oil companies alone.[3]

The manner in which the above noted historical developments relates to this thesis is summarized below:

1. The oil revenues accruing to Iran had an

increasing trend during the period in question due to the following factors:

i expansion of oil industry which in turn was due to technological improvements in that field and increasing foreign demand for oil.

ii increase in Iran's share of oil revenues due to changes in contractual agreements.

iii increase in the price of oil, due to changes in contractual agreements and/or increase in international price of oil.

These factors are treated as exogenous historical facts in this thesis and are further discussed in the following section.

2. The Iranian government can be considered as the sole channel linking the oil revenues to the Iranian economy. Analysis of government economic policies is therefore of crucial importance to this thesis.

In short, oil revenues affect the Iranian economy both positively and negatively. They are unquestionably the driving force in increasing national income through the government development plans as well as their

contribution to foreign exchange earnings; they are also capable of causing high rates of inflation by mechanisms which will be studied in chapter IV.

3. Trend of Increases of Oil Prices and GNP

In the first full year following nationalization (1955), the total crude oil exports amounted to more than 120 million barrels, bringing receipts of $90.2 million (see table 2). The development and expansion of the market for oil products in the next decade resulted in increasing oil exports to such an extent that they increased ten-fold to 1,232 million barrels in 1969, creating over $920 million in revenue for the Iranian economy. During the 1954-69 period, cumulative gross crude production by the consortium companies amounted to 8.4 billion barrels, which resulted in a total value of oil-export of about $6.4 billion (see table 2).

The major boost in oil prices began after the OPEC agreement in Tehran in February 1971. As a result of this agreement, the price of heavy crude oil was expected to rise by 49 cents per barrel during 1971, by an additional 55 cents in 1972, 65 cents in 1973, 73 cents in 1974 and 83 cents in 1975, which would have brought the per-barrel price to $4.5. However, the actual price increases were much higher after 1973 (see table 3). Late 1973 saw a

TABLE (2)

Iran: Crude Oil Production and Oil Revenue (1955-77)

Year	Production		Receipt from Oil Export	
	Million Barrels	% Change	Billion U.S. $	% Change
1955	0.12	435.7	0.09	335.7
1956	0.20	64.7	0.15	67.3
1957	0.26	32.9	0.21	41.0
1958	0.30	14.8	0.24	16.2
1959	0.34	12.8	0.26	6.1
1960	0.39	15.0	0.28	8.6
1961	0.44	12.6	0.29	2.2
1962	0.49	11.0	0.34	17.6
1963	0.54	11.7	0.38	11.0
1964	0.63	14.7	0.48	26.9
1965	0.70	11.6	0.51	6.6
1966	0.78	11.7	0.61	18.3
1967	0.95	22.1	0.75	23.6
1968	1.04	9.1	0.85	13.5
1969	1.23	18.9	0.92	8.1
1970	1.40	13.4	1.11	20.2
1971	1.65	18.6	1.85	66.9
1972	1.84	10.7	2.40	29.4
1973	2.14	16.7	4.40	83.6
1974	2.20	2.7	21.44	387.4
1975	1.95	-11.2	19.08	-11.0
1976	2.18	12.6	22.71	19.0
1977	2.04	-7.2	23.61	4.0
		Averages		
1955-66	0.43	54.1	0.32	46.5
1967-72	1.35	15.5	1.31	27.0
1973-77	2.10	8.7	18.25	96.6

Note: Rate of exchange: 1955-72, par rate 75.75R/U.S.$; 1973, 68.88/U.S.$; 1974, 67.62/U.S.$; 1975, 67.63/U.S.$; 1976, 70.22/U.S.$; 1977, 70.60/U.S.$. See International Financial Statistics, Various Issues.

Sources: Anindya K. Bhallachorya 'The Myth of Petropower', 1977, pp.84-85; Organization of the Petroleum Exporting Countries, Statistics Unit, Annual Statistical Bulletin, 1974, p.146; For 1975-77: Bank Markazi Iran, Economic Bulletin and Balance Sheet, pp.182-183; Quarterly Economic Review: Iran, No. 2 (1976), No. 3 (1977), No. 3 (1978).

TABLE (3)

Iran: Price of Crude Petroleum

U.S. Dollar - Barrel

Year	Price
1961	1.73
1962	1.73
1963	1.73
1964	1.73
1965	1.73
1966	1.73
1967	1.73
1968	1.74
1969	1.74
1970	1.74
1971	2.13
1972	2.41
1973	3.22
1974	11.56
1975	11.51
1976	12.22
1977	12.49

Sources: International Financial Statistics Yearbook, 1979-1980, pp.230.231; World Energy Statistics, Yearbook (United Nations), 1979, p.1205.

marked change in OPEC's strategy with a resulting fourfold increase in the price of Iranian oil, from less than $3 per barrel in 1972 to nearly $12 per barrel in 1974. By March 1974, Iran's oil income went up to more than $21 billion, an amount five times greater than that reached on the average in previous years (see table 2). Iranian crude oil production reached a record of more than 6 million barrels per day in 1974, 5.6 million barrels of which was exported, twice the amount registered the year before. The annual increases in oil revenues were 83.6 percent and 387.4 percent for 1973 and 1974, respectively.

In 1974, the Iranian economy continued its boom at a time when the rest of the world faced the problem of stagnation. Per capita GNP went up from $501 in 1972 to $821, in current prices. In 1975, however, economic conditions changed rapidly for Iran. This was due to a recession in the industrial countries, accompanied by conservation measures which resulted in a sharp decline in world demand for oil, including that of Iran. Oil exports had increased by only one percent in quantity, and oil production registered a sharp drop of 11.2 percent in 1975. In 1975, oil revenue, in contrast, actually fell by .12 percent. Since the final quarter of 1974, petroleum production levels in Iran have been falling and oil exports experienced steady declining volumes. This trend was arrested in March 1976.[4] In short, as a result of the

developmental and the contractual agreements of the Iranian oil industry, the increase in output from 329 thousand barrels a day in 1955, to 6.5 million barrels a day in late 1976 was accompanied by an increase in oil revenue of more than 230 times, from about $90 million to more than $20 billion.

4. Dualism and Iran's Development Plans

Iran, although experiencing structural changes during the period in question, can be considered as an example of a dual economy; an economy characterized by a modern sector containing manufacturing industries (including direct foreign investment) and highly developed, capital-intensive extractive industries (oil and gas), together with a relatively underdeveloped, slowly growing indigenous sector. The side-by-side existence of these two sectors gives rise to what is described as a dual economy.

The Iranian economy has a mixed nature with both public and private sectors, each playing separate and significant roles. During 1910-50, the unbalanced growth of the oil sector had no widespread repercussions on the economy, either directly or indirectly. This may be contrasted with the post-1954 experience.

In February 1949, the parliament passed a Plan

Organization Act establishing the plan organization for the task of implementing the first seven year plan (Sept. 1948 - Sept. 1955). The RLS 62 billion total expenditure of the First Plan was to be allocated among various programs, apparently for Iran's reconstruction and development. Oil played the critical role in the provision of the First Plan's financing. Thus, when the nationalization of the oil industry (in March 1951) resulted in a drastic decline in oil operations and incoming revenues, development operations were cut drastically with the total expenses reduced to RLS 21 billion.[5] During the period 1948-55, Iran's oil revenues amounted to a mere $76 million or an average of $10.8 million per year: 37.1 percent of the sources of funds for the first seven-year plan was projected to be oil revenues (see table 4).

The Second Seven-year plan (Sept. 1955 - Sept. 1962) called for a total outlay of RLS 70 billion ($933 million), to establish essential infrastructure for the economic transformation that was to come. It included construction and development of dams and roads, introduction of vocational and technical education and mobilization of human power. A year later in 1956, total authorized expenditures were raised by 20 percent to RLS 84 billion and oil revenues actually allocated to the plan organization during this period were RLS 61 billion (see table 4). The total revenue which the government received

Table (4)

Iran: Share of Oil in Financing Development Plans

Development Plan	Total Oil Revenues Allocated to Each Plan	Percentage Share of Oil to Total Plan Outlay
First Seven-Year Plan (1948-1955)	7.8	37.1
Second Plan (1955-1962)	61.0	87.1
Third Plan (1962-1968)	153.3	66.7
Fourth Plan (1968-1973)	385.0	63.1
Fifth Plan (1973-1978)	8296.5	79.8

Source: Plan Organization, Report on Development Plans, (Tehran, Iran) Years 1959-1964-1968, 1974.

from oil over this period was approximately $1.7 billion (RLS 120 billion). It is obvious that without oil revenues, the Second Plan, too, could not have been successfully launched or properly financed. The implementation of the Second Plan was only partly successful.

Despite all their achievements, the first two seven-year plans could still hardly be called "plans" in the technical sense of the word. They were more in the nature of projections of financial allocations for large government expenditures in an essentially market framework.

The Third Five-year Plan (Sept. 1962 - March 1968), was the first attempt at comprehensive planning. It initially proposed a total expenditure of RLS 190 billion. This was eventually increased to RLS 230 billion ($3.1 billion).

Oil revenues constituted by far the most important source of development funds (66.7 percent). The RLS 153.3 billion of receipts for oil allocated to plan organization during the Third Plan period represented more than two-thirds of the total income that had accrued to the government from oil during the same period.[6] The Third plan channeled a substantial proportion of indirect earnings of the oil sector into development projects, and it was also the first Iranian plan to specify the

underlying development strategy, objectives and target growth rates. The Third plan specified how oil revenues could contribute to achieving these goals. Moreover, problems of fiscal control and organizational efficiency which became increasingly critical during the Second plan led to the establishment of an Economic Bureau, later, the Division of Economic Affairs in 1958. A staff of competent Iranian economists was recruited for the Division (accompanied by a team of foreign economic advisors until 1962). The Division was assigned formal resonsibility for preparing the Third plan to begin when the Second plan ended in September 1962. The Third plan was to take account of Iran's entire resource structure. Policies which could harness both public and private activities to achieve national development goals were to be included. However, detailed estimates were not made for all economic activities. It stipulated only that consideration be given to creating conditions within which private activities could move more rapidly to promote economic and social development. The role of the plan Organization in direct execution of government programs was to be reduced and increasing responsibilities were assigned to normal government agencies.

Iran's economic development during the third plan was characterized by a high rate of growth and relative price

stability. The GNP at constant prices increased at an annual compound rate of about 9 percent, while the GNP deflator increased by slightly over one percent per year. Thus, with the population growing at an annual rate of close to 2.8 percent, real per capita GNP increased on the average by over 6 percent during the 6 years of the third plan.

The high growth rate during the third plan was largely due to the increasing development effort which was reflected in the sizable increase in total investment. Gross Domestic Fixed Capital Expenditures more than doubled rising from 15.3 percent of GNP in 1962 to 22.3 percent of GNP in 1967. Almost two-thirds of this increase was in public sector investments, which increased from about one-third of the total investment in 1962 up to almost one-half in 1967. Private investments increased sharply in 1964 (20 percent) reflecting a revival of business activities after the recession which ended in 1963. From 1964 to 1967, there was a gradual slow-down in the rate of increase of private sector investment (from 20 percent in 1964 to 8.5 percent in 1967).

Another factor that has contributed to the high rate of growth during the third plan was the incremental capital/output ratio which averaged 2.6, which was low in comparison to that of other developing countries. This low capital/output ratio was explained to some extent by

the existence of under-utilized capacity at the beginning of the period and by the relatively large increases in the value-added in petroleum production which were not primarily due to increased investment. However, it reflected the increase in quick-yielding investments, particularly in the private sector.

The Fourth Five-year plan (March 1968 - March 1973) was the most comprehensive of all the development plans yet formulated.[1] Up to the start of the Fourth Plan, in 1968, some $3 billion (RLS 210 billion) of oil royalties, were allocated to the plan organization for investment in various development projects under the first three plans. An increasing share of oil income was expected to be used for future development, as the absorptive capacity of the economy expanded. Total investment of RLS 810 billion ($10.8 billion), in addition to investment on the part of the private sector, sought to increase the real GNP by 9.3 percent per annum, from an initial $6.9 billion in 1967[7]. Petroleum production was expected to increase almost 80 percent during the plan period. According to the Fourth Plan, Iran expected to receive RLS. 487 billion ($6.5 billion) from the oil sector, of which 80 percent was allocated to the plan organization and the remaining 20 percent was absorbed by the government for routine public expenditures.

The Fourth Plan emphasized industrialization;

development of agriculture and raising farmers' income so as to avoid the migration of rural families to cities; raising public welfare and propagating social services among different social groups, especially low-income groups. The plan's growth target for agriculture, however, was not fully realized, as the actual rate fell short of the planned rate by 0.5 percentage points to an average annual growth rate of 3.9 percent. The relative share of agriculture in GNP also declined by 6.5 percentage points; while the relative shares of services, national oil and industries and mines increased by 3.6, 2.1 and 0.9 percentage points, respectively.

Government revenues from the oil sector grew at an average annual rate of 27 percent, as compared with 18 percent from all other sources. Oil revenues accounted for 63.1 percent of plan organization funds. Oil revenues, in dollar terms, increased more than fourfold, from $751.6 million in 1967 - 1968 to more than $2.3 billion in 1972 - 1973 (see table 2). In spite of rising oil revenues, the Fourth Five Year Plan was not a complete success; exports of goods and services increased 1.6 percent less than the annual average planned rate and imports, in the other hand, rose 3.2 percent per year, more than the planned rate.[8]

The Fifth Five Year Development Plan (March 1973 - March 1978) envisioned utilizing the rising oil income for

development purposes, even more so than did the Fourth Five Year Plan. Subsequent sharp increases in oil prices and government revenues during 1973 and 1974, radically altered the plan's financial projections and called for a wholesale upward revision of the targets. The Fifth Plan committed itself to an outlay of $123 billion, nearly $70 billion of which (RLS 4,699 billion) was allocated to fixed capital investment. The Fifth Plan's total projected expenditure in the development sector, doubled the scope of the original version and overall was about six and one-half times larger than the Fourth Plan.

An economic boom for Iran in the first year of the implementation of the Fifth Plan (late 1973), increased GNP by 42 percent compared with the target rate of growth of 11.4 percent. To fulfill the objectives, oil production was expected to increase from 5.1 million barrels per day in 1972-73 to a possible maximum of 7.3 million in 1977-78. Iran's per capita income would therefore increase to $2000 by 1978 (from $550 in 1972). The contribution of the oil sector in GDP was projected to increase at an average annual rate of 51.5 percent during the Fifth Plan.

Oil and gas income was expected to reach 83 percent of total revenues during the Fifth Plan compared with 53 percent during the Fourth Plan, and the share of oil revenue in total government plan expenditure was to be

79.8 percent (see table 4). Oil export revenues rose by about 28.8 percent a year between 1955-1977 (compound rate) and this rate was 126.3 percent during 1971-74 (see table 2).

In 1974-75, oil accounted for 45 percent of GDP, 84.3 percent of government revenues and 89.4 percent of current foreign exchange receipts. However, in 1975-76, owing to a significant drop in production and exports, these ratios declined correspondingly.[9] Oil receipts have been a painless source of savings, and as a dynamic sector serving as a crucial element in the development effort, they have also been a welcome relief from extreme foreign exchange problems.

The growth performance of the Iranian economy has thus owed much to the behavior of the oil sector. In terms of linkage, the influence of this sector on the rest of the economy was small but growing rapidly (as far as its forward linkages are concerned). In its backward linkage - i.e., the magnitude of the demand by the oil sector for domestic goods and services - its influence was still relatively small. This is partly the result of the highly capital intensive, sophisticated nature of the oil industry, whose main capital equipment needs cannot be supplied from domestic sources.[10]

In its forward linkage, the situation has been better and is constantly improving. The flow of oil and oil

products to other sectors (domestic consumption of oil and oil derivatives) has gone up more than 17 times since 1950. In recent years, nearly 70 percent of Iran's domestic energy requirements have been supplied by the oil industry. Oil and gas together have provided about 90 percent of the country's energy needs.[11] Crude petroleum is refined at Abadan, Tehran, Kermanshah, Shiraz and Masjed-Soleiman with a total capacity of 825,000[12] barrels a day, out of which, Abadan refinery (470,000 b/d) and the two Tehran refineries (210,000 b/d), all together, have a share of more than four-fifths of total domestic refinings. It is important to note that Iran's national oil policy has emphasized, particularly in recent years, production and exports of the oil by-products such as refined products, petrochemical and synthetic food and fiber.

As the oil revenues accruing to the government have provided the fiscal authorities with a convenient and readily accessible source of funds, other taxes (both direct and indirect) have been kept relatively low by the government, without substantially impairing public services. It has been possible to meet growth objectives without the necessity of siphoning away private consumption and without undue hardships to private individuals. The oil sector has had a significant effect on national saving and growth. Table 5 shows the ratios

of nominal saving to GNP, and to nominal investment during the period 1967-1976. The important effects of the oil sector on savings, investment and growth are obvious after 1973. As seen in table 5, due to an increase in domestic value added by the oil sector (in 1973-75, particularly), the ratio of gross national savings to GNP reached a record of 47.4 percent and the ratio of gross national savings to nominal investment reached 181.5 in 1973 (these ratios continue to be high in succeeding years). This indicates the effect of the increase in oil revenues after the oil boom, by which national savings and investment has been affected.

The allocation of resources in the Fifth Plan was envisaged to ensure balanced growth in different sectors and regions of the country. However, greater emphasis was placed on investment in the key sectors such as agriculture, basic industries (particularly petrochemical) and some other areas deemed to be of infrastructure nature. The expected amount of value added in four aggregate sectors of the economy and their share in GDP at the end of the Fourth Plan (1972) and Fifth Plan (1977) are shown in tables 6 and 7. The expected amount of value added in oil had an annual growth rate of 51.5 percent (during 1972-77) while the share of oil in GDP grew by 5.9 percent during the same period (at fixed prices of 1972).

So far, an attempt was made to show the important

role which oil plays in the development plans. In the next chapter, other contributions of oil to Iran's economy will be considered.

TABLE (5)

Iran: National Accounts (1967-76) in Constant (1974) Prices

Year	GNP	Gross National Saving	Gross Fixed Capital Formation	GNS/GNP	GFCF/GNP	GNS/GFCF
	Billion Rials			Ratios in Percentage		
1967	517.4	151.7	215.1	29.3	41.6	70.5
1968	584.3	160.9	238.7	27.5	40.9	67.4
1969	656.8	173.3	247.9	26.4	37.7	69.9
1970	744.5	183.3	261.9	24.6	35.2	70.0
1971	902.8	307.1	331.8	34.0	36.8	92.6
1972	1160.8	362.6	411.2	31.2	35.4	88.2
1973	1748.2	829.1	456.8	47.4	26.1	181.5
1974	3060.6	1354.9	562.0	44.3	18.4	241.1
1975	3462.1	1193.4	880.9	34.5	24.4	135.5
1976	4574.4	1482.5	987.1	32.4	21.6	150.2
1977*	5110.1	1660.5	1108.7	32.4	21.7	149.7
			Averages			
1967-72	761.1	223.2	284.3	29.3	37.4	78.5
1973-77	3591.1	1304.1	799.1	36.3	22.3	163.2

*Calculated from International Financial Statistics, Vol. XXXII, 1979, pp.230-231.

Source: The Statistical Yearbook of Iran, 1977, p.670.

TABLE (6)

Value Added of Major Economic Sectors (at Fixed Prices of 1972)

Aggregated Sectors	1972	1977	Annual Growth Rate (%)
Agriculture	201.1	282.1	7.0
Oil	216.5	1,712.0	51.5
Industries & Mines	247.4	566.0	18.0
Services	445.8	953.9	16.4
GDP	1,110.8	3,514.0	25.9

Source: Plan & Budget Organization, Fifth Development Plan, Tehran, 1975.

TABLE (7)

Share of Major Economic Sectors in GNP at the End of the Fourth and Fifth Plans

(Fixed Prices of 1972)

	1972	1977
Agriculture	18.1	8.0
Oil	19.5	48.7
Industries & Mines	22.3	16.1
Services	40.1	27.2
Total	100.0	100.0

Source: Plan & Budget Organization, Fifth Development Plan, Tehran, 1975.

REFERENCES

1. Jahangir Amuzegar and M. Ali Fekrat, Iran: Economic Development Under Dualistic Conditions, (Chicago and London: University of Chicago Press, 1971), p.32.

2. OPEC was formed on Sept. 1960, in response to general oil price cuts by the major oil companies. Its major objectives, therefore, were to prevent further erosion of the oil prices and to increase the government's take during the 1960's. However, it was not until early in 1970 when OPEC actually pushed the oil prices upward. Iran played an important role towards this end. In fact, the Shah himself, with the approval of the other gulf states, personally led the negotiation which began in early 1971.

3. Iran Oil Journal, various issues.

4. Anindya K. Bhaltacharya, The Myth of Petropower, (Lexington, Mass.: D.C. Heath, 1977), p.34.

5. Amuzegar and Fekrat, op.cit., p.40.

6. Ibid., pp.45-66.

7. Ibid., p.51.

8. Ibid.

9. J. Amuzegar, Iran: An Economic Profile, (Washington, D.C.: The Middle East Institute, 1977), pp.62-63.

10. Ibid., p.66.

11. Ibid.

12. Ibid.

CHAPTER III

Other Contributions of Oil to Iran's Economy

1. Introduction

Oil has brought unprecedented wealth to Iran. A number of features define the country's oil-exporting economy. The non-oil sector is insignificant. Oil income represents a large and increasing share in the financing of development plans. As was discussed in Chapter II, this share increased from 37.1 percent for the First Development Plan (1948-55), to 79.8 percent during the Fifth Plan (1973-78).

The oil income is not earned as a form of payment to factors of production but as revenues to the government: they are paid directly to the government of the oil-exporting country, in the form of an external rent. The oil boom has generally taken place independently from the internal evolution of the economy. The fact that oil revenues accrue and grow exogenously tends to dissociate the experience of economic growth from that of economic development.

The State is economically independent from its citizens. However, the people expect to share the riches of the country. The overall objectives of government would, therefore, be to maximize gains from oil exports and to safeguard the country's consumer interests. As discussed

earlier, ambitious economic development plans have been prepared. The state - the main intermediary between oil sector and economy - receives revenues and directs it to the economy through public expenditures. The obligation of the state to distribute the wealth of the nation creates a situation in which the internal economic variables such as money supply and consumer credit are expanded by choice, due to the government's economic policy. However the degree of change would have to be much more if the government of an oil-exporting country remains passive. In the latter case, substantial changes in money supply, exchange rate, for example, are required to achieve adjustment.

Oil revenues afford considerable means for imports of both infrastructure and consumer products. The effect of oil revenues on Iran's balance of payment, government expenditures, money supply, credit and imports are studied in this chapter.

2. Oil Revenue and its Effects on Iran's Balance of Payment

Foreign exchange contribution of oil is an important indication in evaluating the role of oil in Iran's economy. Oil's role as the principal earner of foreign exhcnage in Iran has been central to the pace of her economic

development. The amount of foreign currency supplied by foreign oil companies in terms of royalties and sales for local currency was between 52 percent and 79 percent of total receipts on the combined current and capital accounts during the 1960's[1]. The average annual share of oil revenues in total current receipts of foreign exchange increased from 73.7 percent during 1965-72, to 83.8 percent during 1973-77 (see table 8). In other words, if a significant change in export structure can be defined as a sharp improvement in the relative share of non-traditional exports in total exports, then it can be said that not only Iran did not have diversification in export structure, but the share of oil earnings in total export value was increasing, thus reducing the relative role of exports of non-traditional goods: 89.3 percent of the total export value of Iran in 1968 was accounted for by the export of oil and its product, leaving 10.7 percent of the total value of exports accounted for by other items. These shares were 96.9 and 3.1 for oil and non-oil exports in 1975 compared with 97.3 and 2.7 in 1977, respectively[2].

Exports other than oil increased for a while by some 14 percent annually, rising from RLS 8.6 billion in 1962 to over RLS 43.2 billion in 1973, and decreasing to 40.7 billion in 1975[3]. The country's non-oil exports were limited to a few primary products such as cotton, dried and fresh fruits and carpets in 1962. These products comprise more than half of

Iran's non-oil exports.

Iran's imports will be discussed separately in subsequent sections, but it is important to note that the value of imports rose from about $547 million in 1962 to more than $2,579 million in 1972, showing an annual average growth rate of 33.6 percent during this period, which was made possible by the expansion of oil export receipts.

During 1974-75, the value of imports amounted to $6.6 billion nearly twice the amount recorded in the previous year. In 1975-76, imports rose to nearly $12 billion, again nearly double the amout for the previous year. The authorities of Iran, having found industries to be contributing to the overall growth of the country, deliberately followed a policy of encouraging industry by allowing more imports to Iran.

The balance of payments experienced several changes of direction: there were net negative balances in 1959-61, 1965-70 and 1975 and positive balances in 1962-64, 1971-74 and 1976-78 (see table 8). The change from a negative to a positive balance in period 1971-72 was attributable to a doubling in the value of oil exports. The negative balance of 1965-70 reflected the increasing expenditures on imports on the one hand and large payments for services on the other (the earnings of the foreign oil companies). As can be seen in table 8, for the period 1965-71, the current account shows a negative balance, which forced the government to borrow

TABLE (8)

Iran: Balance of Payment (1965-77)

Balance of Payments ($\mn)	1965/66	1966/67	1967/68	1968/69	1969/70
Current Account					
Receipts					
Oil Sector	607.5	715.5	855.5	958.5	1,099.0
Gas Exports	(a)	(a)	(a)	(a)	(a)
Goods	132.0	143.8	203.5	208.1	231.3
Services	77.8	81.2	116.5	158.5	188.4
TOTAL	817.3	940.8	1,175.5	1,325.1	1,518.7
Payments					
Private Sector Imports	-141.26[c]	137.5[c]	-181.4[c]	275.0[c]	-322.2[c]
Public Sector Imports	-791.1[b]	-951.7[b]	-1,197.8[b]	-1,526.8[b]	1,748.5[b]
TOTAL	-932.3	-1,089.2	-1,379.2	-1,802.8	-2,070.2
Balance on current account	-115.0	-148.4	-203.7	-477.7	-552.0
Capital Account					
Utilization of Long Term Foreign Loans & Credits	80.3	146.6	248.3	474.6	536.8
Inflow of Foreign Private Loans & Capital	4.8	20.6	17.6	22.1	33.0
Repayment of Foreign Long Term Loans & Credits	-61.6	-41.0	-55.3	-102.9	-155.3
Investment Abroad	-4.8[d]	-6.5[d]	-5.1[d]	-10.8[d]	-17.2[d]
Statistical Errors & Unregistered Transactions	2.6	-4.5	-2.5	-4.2	0.0
Basic Balance	-93.7	-33.2	-0.7	-99.7	-154.7
Incidental Receipts & Payments	41.0	8.8	0.0	0.0	83.8
Overall Balance	-52.7	-24.4	-0.7	-99.7	-70.9

continued...

TABLE (8)

Iran: Balance of Payment (1965-77)
(cont'd)

Balance of Payments ($ mn)	1970/71	1971/72	1972/73	1973/74	1974/75
Current Account					
Receipts					
Oil Sector	1,268.4	2,536.	5,130.	5,062.	18,671.
Gas Exports	-	61.	100.	87.	131.
Goods	258.8[a]	403.	470.	548.	563.
Services	162.9	337.	500.	664.	1,780.
TOTAL	1,690.1	3,337.	6,200.	6,366.	21,145.
Payments					
Private Sector Imports	-384.9[c]	1,775.	3,220.	3,151.	6,334.
Public Sector Imports	-1,980.2[b]	1,727.	2,464.	2,745.	6,586.
TOTAL	-2,365.1	3,502.	5,684.	5,896.	12,920.
Balance on current account	-675.0	-165.	516.	466.	8,215.
Capital Account					
Utilization of Long Term Foreign Loans & Credits	624.1	978.	1,065.	1,304.	257.
Inflow of Foreign Private Loans & Capital	50.2	74.	100.	150.	222.
Repayment of Foreign Long Term Loans & Credits	-248.6	-455.	-530.	-541.	-1,313.
Investment Abroad	-12.3[d]	-5.	-	-1.	-2,388.
Statistical Errors & Unregistered Transactions	0.0	4.	-	9.	-73.
Basic Balance	-261.6	431.	1,151.	1,387.	4,920.
Incidental Receipts & Payments	21.8	62.	-236.	-236.	-
Overall Balance	-239.8	493.	915.	1,151.	4,920.

continued....

TABLE (8)

Iran: Balance of Payment (1965-77)
(cont'd)

Balance of Payments ($ mn)	1975/76	1976/77	1977/78
Current Account			
Receipts			
Oil Sector	19,053.	20,652.	20,714.
Gas Exports	202.	183.	191.
Goods	448.	472.	524.
Services	2,268.	3,092.	4,161.
TOTAL	21,971.	24,404.	25,590.
Payments			
Private Sector Imports	8,934.	10,262.	11,735.
Public Sector Imports	9,670.	9,408.	11,695.
TOTAL	18,604.	19,670.	23,430.
Balance on current account	2,146.	4,734.	1,794.
Capital Account			
Utilization of Long Term Foreign Loans & Credits	300.	560.	1,755.
Inflow of Foreign Private Loans & Capital	661.	617.	759.
Repayment of Foreign Long Term Loans & Credits	-729.	-711.	-680.
Investment Abroad	-2,941.	-1,790.	-1,108.
Statistical Errors & Unregistered Transactions	-428.	-84.	-505.
Basic Balance	-991.	3,326.	2,015.
Incidental Receipts & Payments	-930.	-478.	-
Overall Balance	-1,921.	2,848.	2,015.

Notes: a) Included in oil sector for 1965-70
b) Including private sector imports
c) This column includes Gold and Services from 1965-70
d) Including repayment of private loans and capital (including interest)

Sources: Quarterly Economic Review, (1966-70, 1971-72, 1974, 1977-78, 1979-80) Annual Supplements.

abroad. With substantially greater revenues from oil beginning in 1971-72, the balance on current account showed surplus in 1972-73, the first since 1962-63.[4] Continuous increases in oil revenue created a situation in which government borrowing was reduced sharply and at the same time, repayments on foreign loans increased substantially.

Investment abroad increased drastically, from one million dollars in 1973 to $2.4 billion in 1974 and $2.94 billion in 1975 (see table 8). Even the enormous outflow of capital did not erode the surplus of the overall balance of payment which was $4.9 billion in 1974-75. In 1975, however, oil revenue decreased by 11 percent (see table 2), while total imports increased by 44 percent, as a result of which the balance of payments showed a deficit of 1.9 billion in 1975 as compared to a surplus of $4.9 billion the previous year.

To summarize, during 1968-73, the annual average rate of increase of total exports was 28.7 percent, that of total imports was 52.8 percent, and that of exports other than oil was 48.9 percent. These rates for the period 1973-75 were 98.7 and 77.9 for total exports and total imports respectively; non-oil exports during this period had an annual average rate of decrease of 2.3 percent[5] (see table 9).

If we consider the trade balance alone, we find that Iran's exports (fob) have exceeded her imports (cif),

TABLE (9)

Iran: Rates of Increases of Total Exports, Non-Oil Exports, Total Imports

(1968-77)

Year	Total Exports	Non-Oil Exports	Total Imports
	Rates of Increase (%)		
68-69	9.5	12.9	11.1
69-70	9.6	13.5	8.7
70-71	9.5	24.1	22.9
71-72	23.8	30.7	24.7
72-73	91.0	150.5	129.6
73-74	189.6	- 8.4*	77.0
74-75	7.8	3.8	78.7
75-76	- 6.3	-13.5*	90.5
76-77	20.8	7.4	29.3

*The negative signs indicate the reduction of this item by 2.3 percent during the period 1973-76.

Source: Organization of Petroleum Exporting Countries, Statistical Unit, Annual Statistical Bulletin, 1974, p.4.

generally by a considerable margin in every year since 1974 due to the country's oil exports[6]. This is another way of saying that thus far, oil has been all-important, all-pervasive and overwhelmingly critical in determining the country's pattern of international trade. Iran's reliance on the export of this primary product accompanied by growing imports, caused the fluctuation in net revenues and the unstable balance of payments situation.

In order to finance the development plans and government expenditures, to industrialize the country and to improve the balance of payments which was deteriorating by an increasing reliance on imports, the government tried to accelerate exports, mostly primary products, so as to at least provide the required amount of foreign exchange for imports. Oil, therefore, has a vital role in the Iranian economy; the economy is largely dependent on it and fluctuations in its revenue have created substantial fluctuations in the country's overall balance of payments. Oil revenues' influence on the government expenditures, money supply and credit will be discussed in the following section.

3. Oil Revenues, Government Expenditures, Money Supply and Credit

As discussed earlier, the oil revenues accrued directly to the government. They did not affect the domestic money

supply until the government decided to inject the oil money into the economy through its expenditures.

Prior to the oil boom in Iran, government expenditure was partly financed for some years by budget deficits. In 1954-56, for example, the budget deficit which was financed by aid from the United States, was 35 percent of the total budget; then with rapidly expanding oil revenues, the deficit was cut substantially by 1958, and almost completely eliminated in 1960[7]. From 1961, however, the overall deficit again began to increase. It reached Rials 58 billion 1972; 16 percent of total government expenditure in that year (see table 10).

The sharp rise in oil revenues in 1973 permitted both a great expansion in budgetary expenditures in Iran and a sharp decrease in the budget deficit by 78 percent. A surplus of Rials 250 billion followed in 1974. But, in 1975, this surplus decreased to Rials 12.7 billion and in the next two years became deficits of Rials 48.1 billion and Rials 388.5 billion in 1976 and 1977 respectively (see table 10). The increases in values of imports manifested itself by sharp decreases in government surplus financing in 1975 and growing deficit financing in 1976 and 1977. Deterioration in both the balance and the terms of trade, therefore, led to deficit financing.

The rapid liquidity injection associated with the increase in oil revenues and the tremendous expansion of

TABLE (10)

Iran: Actual Treasury Receipts and Expenditure, General Budget

(1968-1978)

(Billion Rials)

	Year Beginning March 21					
Receipts:	1968/69	1969/70	1970/71	1971/72	1972/73	1973/74
Income Tax	17.5	21.1	26.5	30.0	41.9	56.5
Indirect Tax	35.1	38.6	44.8	52.7	60.7	79.3
Oil & Gas	22.3	22.1	26.3	45.2	178.2	311.2
Other	3.4	4.5	4.1	4.8	21.3	17.8
Total Receipts	78.3	86.3	101.7	132.7	301.1	464.8
Expenditures:						
General	92.7	107.4	126.2	165.7	359.1	478.0
Surplus or Deficit	-14.4	-21.1	-24.5	-33.0	-58.0	-13.2

continued.....

TABLE (10)

cont'd

Iran: Actual Treasury Receipts and Expenditures, General Budget

(1968-78)

(Billion Rials)

Year beginning March 21

Receipts:	1974/75	1975/76	1976/77	1977/78
Income Tax	76.7	151.8	187.8	230.3
Indirect Tax	86.5	119.0	154.1	211.5
Oil & Gas	1,205.2	1,246.8	1,329.0	1,497.8
Other	26.0	64.5	73.0	94.7
Total Receipts	1,394.4	1,582.1	1,743.9	2,034.3
Expenditures:				
General	1,143.6	1,569.4	1,792.0	2,422.8
Surplus or Deficit	250.8	12.7	-48.1	-388.5

Source: Quarterly Economic Review: Iran (1973, 1977-78, 1980) annual supplement .

credit to the private sector after 1973, was accompanied by rapid expansion of government expenditure. A major portion of oil revenues was translated into government consumption and government investment expenditures; these two items exhibited a high growth rate particularly after 1973.

As shown in table 11, the rate of growth of government consumption expenditure has been on the rise, from Rials 30.5 billion in 1959, to Rials 252.6 billion in 1972 and then to Rials 1073.8 billion in 1977, having an annual average growth rate of 34.8 percent during the period 1973-77, compared with 22.6 percent and 7.2 percent during periods 1963-72 and 1959-63 respectively. Government consumption expenditures increased more than twice as fast as private consumption during 1963-72, which in turn increased at three to six times the average annual growth rate of the population.

During 1959-63, government investment expenditures decreased by 0.5 percent on average, per year, then climbed to 24.2 percent during 1963-72 (average annual growth rate), and jumped to 51 percent during 1973-77.

The above figures suggest two important patterns of government expenditures. First, government consumption expenditures and government investment expenditures had their highest rates during 1973-77. Second, for the first time, the growth rates in government expenditures were higher than those in private sector, which was the effect of increase in government's revenues from oil. This trend started during

1963-72 and maintained itself, even during the high rate of the 1973-77 period (see table 11).

The share of government expenditures were high and increasing as long as oil exports were booming. When a decline in oil revenue took place in 1975, the government tried to maintain these expenditures at the level prior to the fluctuation by deficit financing. As mentioned before, money supply and credit in Iran is closely related to the government expenditure, which is largely affected by oil revenues. Table 12 shows the total credit and money supply expansion during 1963-77. Oil revenues increased by 83.6 percent in 1973, compared to 29.4 percent in the previous year, and reached a record of 387.4 percent in 1974. The money supply increased by 61.4 percent in 1974, compared with 27.7 percent for 1973, and continued to increase at a rate of 32 percent per year for the next three years. The rate of expansion of total credit during the period 1973-77 was 35.5 percent per year, and the annual average rate of increase of credit to the private sector was 52.8 percent for each year during the same period.

Considering these figures in table 12, a causal relationship can be recognized: the tremendous increase in oil revenues resulted in the expansion of credit and money supply, and this increased demand for basic goods and for factors of production, which in turn led to an increase in general cost of production and hence caused increases in

TABLE (11)

Iran: The Composition of National Expenditure, 1959-77

Billions of Rials (current prices)

Year	Private Consumption Expenditure	Government Consumption Expenditure	Private Investment Expenditure	Government Investment Expenditure
1959	209.4	30.5	31.9	20.8
1963	262.1	40.3	31.1	20.4
1972	686.6	252.6	144.0	143.4
1973	879.7	325.4	160.4	202.9
1977	2160.8	1073.8	776.8	1055.1
		Average Annual Growth Rates		
1959-63	5.8	7.2	- 0.6	- 0.5
1963-72	11.3	22.6	18.6	24.2
1973-77	25.2	34.8	48.3	51.0

Source: Computed from data in Bank Markazi Iran, Annual Report, Various Issues as cited in Robert E. Looney, Economic Origins of the Iranian Revolution, (New York: Pergamon, 1982), pp.64,66.

TABLE (12)

Iran: Credit, Money Supply and Total Government Expenditure

(1963-77)

Constant 1974 Prices

Year	Change in total Oil Revenue	Balance of Payments	Credit				Money Supply		Total Government Expenditure
			Private	Public	Total	Change in Total	Billion Rials	Change in Total	Billion Rials
	percent	million dollars	Billion Rials			percent		percent	
1963	11.0	-	72.9	33.2	106.1	-	49.0	-	-
1964	26.9	-	88.1	39.6	127.7	20.4	53.9	10.0	280.5
1965	6.6	-52.7	102.2	45.7	147.9	15.8	60.4	12.1	296.5
1966	18.3	-24.4	121.2	51.7	172.9	16.9	66.9	10.8	315.9
1967	23.6	-0.7	142.3	71.3	213.6	23.5	77.1	15.2	351.2
1968	13.5	-99.7	167.2	88.1	255.3	19.5	87.9	14.0	397.7
1969	8.1	-70.9	198.6	115.3	315.9	22.9	90.4	2.8	435.5
1970	20.2	-239.8	230.2	147.0	377.2	20.0	97.4	7.7	477.9
1971	66.9	493.0	277.6	176.3	453.9	20.3	117.0	20.0	608.9
1972	29.4	915.0	362.4	221.3	583.7	28.6	158.7	35.6	775.4
1973	83.6	1151.0	489.1	298.4	787.5	34.9	202.7	27.7	884.7
1974	387.4	4920.0	698.3	413.0	1111.3	41.1	327.2	61.4	1190.3
1975	-11.0	-1921.0	1092.5	624.8	1717.3	35.3	446.5	36.5	1603.4
1976	19.0	2848.0	1515.5	960.0	2475.5	44.2	611.2	36.9	1766.8
1977	4.0	2015.0	1780.1	1222.1	3002.2	21.3	752.0	22.8	2191.7

Sources: The Statistical Yearbook of Iran, (1977), pp.491,489,662; The Statistical Yearbook of Iran, (1972), pp.498,493,653,673; Quarterly Economic Review, Annual Supplements, Various issues.

inflation rates for both wholesale and consumer price indexes.

A glance at these figures, therefore, suggests a close correlation between oil revenue increases and an increase in inflationary rates, with credit and money supply acting as transitory variables, translating the former variable into the latter one. The year 1974, for example, was registered as having the peak relative increases of these variables: 387.4 percent for oil revenues, 41.1 percent for credit expansion, 61.4 percent for increase in money supply and 17 percent and 15.5 percent for increases in wholesale and consumer price indexes, respectively.

As the result of increases in total expenditures at the national level, per capita income increases. Growth of per capita income allows for increases in per capita consumption and family expenditure, which can be considered important factors changing the composition of demand, and thus, putting pressure on the structure of production.

Per capita GNP (in constant prices) increased more than three times from Rials 22,277 in 1969 to Rials 67,982 in 1974 and then reached Rials 107,350 in 1977[8].

The consumption pattern of the Iranian people will be dealt with separately in chapter V. However, it is important to indicate that according to the official government statistics[9], the monthly average consumption of an urban family more than doubled, from a level of Rials 7570.4 in

1969 to Rials 19557.1 in 1974 (in current prices). The increases in oil-induced government expenditures raised the standard of living of the Iranian people; based on more reliable data, per capita urban consumption (in constant prices) increased by an annual average growth rate of 3.7 percent during 1973-77, compared with 2.1 percent during 1959-63[10].

Inflation in Iran will be discussed in the next chapter. However, it is important to point out here that there is an inherent risk of inflation in developing countries which export primary products. As export is booming and national income rises, government expenditures increases, which in turn leads to increase in money supply and credit. This puts pressure on the demand side of the economy. The supply side - defined as the total available goods and services - has to rise proportionally in order to eliminate inflationary pressures. Due to oil revenues, Iran could afford substantial increases in imports which in turn increased the level of available goods and services and hence helped to eliminate, to some extent, the inflationary pressures. Whether or not the inflationary pressures results in an increase in prices depends primarily upon the ability of the economy to produce output fast enough to respond to demand.

Empirical evidence shows that the supply structure in Iran was not sufficiently flexible to adapt itself readily to increases and changes in the composition of demand. In the

next section, Iran's imports will be considered.

4. The Effect of Increases in Oil Revenues on Imports

The basic supply-demand identity is:

production + imports = domestic use + exports

(1) (2) (3) (4)

The demand side (3 and 4) is increasing in Iran, due to the fact that higher oil income is being channeled into domestic expenditure. The supply side, therefore, has to increase to maintain a certain balance. However, agricultural products (included in 1) had a very slow rate of growth through the whole period 1954-77 (will be discussed later). The only alternative for the increase of output of basic goods (foodstuffs) would be an increase in imports (2). For many LDC's the capability to import is hampered by insufficient foreign currency. Therefore, the foreign trade bottlenecks[11] often reinforce the agricultural bottlenecks. The overall effect would be that the growth of supply side (1) and (2) will fall behind that of demand side (3) and (4), resulting in upward pressures on prices.

Iran's demand for imports was both price inelastic and income elastic, i.e., increase in prices of foreign goods and services would not decrease the demand for imports, whereas

higher oil income leads to higher imports. Due to its huge amount of oil, Iran did not have to face any constraint of foreign currency; economic growth was not limited by foreign exchange availability. On the contrary, foreign currency could palliate any insufficiency of agricultural foodstuffs, filling, therefore, the gap between consumption and domestic production; in the mid-1970's, consumer demand for food was estimated to have had a 9-12 percent annual rate of growth[12]. Meat consumption, for example had an annual growth rate of more than 13 percent, with red meat imports in 1975-76 up 75 percent over the previous year[13].

The increased demand for food - due to increases in real incomes - coupled with the government's desire to combine relatively stable and low prices with accelerating structural changes, as well as highly import-intensive demands for industrialization and modernization. This, in turn, led to increased government spending on imports. Stabilization, therefore, is not the only reason behind massive imports in OPEC countries. Even the richest OPEC member has an underdeveloped economy. Each is eager to build its economy in a way that important sectors of the economy can continue to grow when oil inevitably runs out. Economic development, however, needs resources and manpower to do the work. Technology and management are needed to build and organize production. Every OPEC member lacks one or more of these necessary factors. In every level of economic development,

special combinations of these factor are required; "Economic development is a jigsaw puzzle, with all the pieces fitting together just so. The economies of OPEC members have many pieces missing and those they have do not match. Imports play a vital rolé in economic development. They supply the missing pieces of the puzzle of development"[14].

Tables 13 and 14 show the upward trend of total imports and exports, as well as the share of imported and exported agricultural products in total volume. The value of total imports in Rials increased 64 percent per annum during the period 1973-77, comparing with 32 percent per annum during 1960-73. The share of imports to gross domestic product (current prices) increased from 29.2 percent in 1970 to 36.5 percent in 1977.[15]

The disappointing response of agricultural production, especially in the livestock subsectors, combined with a sharp rise in food demand, induced further importation of food and other agricultural products. The total value of imports of agricultural products had an annual average rate of increase of 80 percent during 1973-77, having an average share of 15 percent of total value of the country's imports.

For 1973-77, agricultural imports increased almost four times, while agricultural exports showed a decline during the same period (see tables 13 and 14). Iran was slowly and inexorably becoming a major importer of agricultural products, a trend that would be extremely difficult to

TABLE (13)

Iran: Composition of Imports

(1968-77)

(million $)

Commodity	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Primary materials & intermediate goods	856.5	987.3	1,068.5	1,336.3	1,596.	2,274.	4,266.	6,212.	6,713.	7,651.
A) Industry & mining	(641.8)	(737.4)	(845.0)	(1,110.9)	(1,266.)	(1,912.)	(3,324.)	(4,337.)	(4,773.)	(5,527.)
B) Construction	(147.0)	(152.7)	(145.8)	(138.5)	(204.)	(238.)	(376.)	(917.)	(987.)	(1,123.)
C) Services	(52.1)	(64.8)	(52.7)	(57.8)	(97.)	(76.)	(444.)	(718.)	(805.)	(745.)
D) Agriculture	(15.7)	(32.4)	(25.0)	(29.1)	(29.)	(48.)	(122.)	(240.)	(148.)	(256.)
Capital goods	376.3	387.2	391.0	482.9	642.	906.	1,331.	3,489.	3,803.	3,841.
A) Industry	(239.1)	(316.2)	(263.7)	(316.6)	(412.)	(560.)	(770.)	(1,760.)	(2,244.)	(2,463.)
B) Services	(103.8)	(30.9)	(91.2)	(132.7)	(168.)	(273.)	(465.)	(1,439.)	(1,325.)	(1,179.)
C) Agriculture	(33.4)	(40.1)	(36.1)	(33.6)	(62.)	(73.)	(96.)	(290.)	(234.)	(199.)
Consumer goods	156.4	168.2	217.1	241.7	332.	557.	1,017.	1,995.	2,250.	2,632.
TOTAL	1,389.2	1,542.7	1,676.6	2,060.9	2,570.	3,737.	6,614.	11,696.	12,766.	14,124.

Sources: **Bank Markazi** Iran Annual Report and Balance Sheet, 1972, p.175.

Bank Markazi Iran Economic Report and Balance Sheet, 1977, p.251.

TABLE (14)

Iran: Composition of Exports (excluding oil and gas)

(1972-77)

(1000 $)

Commodity	1972	1973	1974	1975	1976	1977
(1) Primary materials & imtermediate goods	220,192	349,415	296,879	292,909	280,530	228,641
A) Industry & Mining	(202,390)	(337,060)	(288,180)	(287,579)	(273,352)	(217,169)
B) Construction	(5,317)	(4,811)	(4,768)	(1,378)	(3,532)	(2,014)
C) Agriculture	(10,404)	(7,335)	(3,083)	(3,018)	(2,583)	(1,867)
D) Services	(2,081)	(209)	(848)	(934)	(1,063)	(7,591)
(2) Capital goods	3,705	16,405	32,370	38,940	50,566	40,858
(3) Consumer goods	215,870	268,859	252,201	260,398	208,761	253,843
TOTAL	439,767	634,679	581,450	592,247	539,857	523,242

Source: Bank Markazi Iran, Economic Report and Balance Sheet, 1977, p.242.

reverse afterwards. An improvement in the agricultural situation in Iran could save more than Rials 100 billion ($1.5 billion) every year in food imports.

There seems to be, therefore, a negative relationship between food production and food imports on one hand and a much stronger relationship between imports (particularly food) and total exports on the other.[16]

Another striking feature of Iranian imports is the high share of intermediate goods in total imports; as can be seen in table 15; during the period 1958-77, intermediate goods had an average share of 60 percent of total import value, while the share of consumer and capital goods were 14.4 and 25.5 percent on the average, per year, respectively.

The relatively high proportion of intermediate imports reflects the government's policy for growth in manufacturing and construction on one hand and the direction of Iran's industrialization toward import substitution, on the other. Import substitution industrialization was concentrated on the petrochemical sector, steel mill at Isfahan, car, truck, and bus industry, machine-tool factories, and electronic assembly plants. Automobile output, for example, rose from 2,300 in 1964 to 73,000 cars, 1,911 buses and 29,365 trucks and vans in 1974-1975.[17] The share of intermediate goods increased from 61.6 percent in 1968 to 64.5 percent in 1974 and then declined drastically to 54.2 percent in 1977. The decline could be explained partly by the fact that import

TABLE (15)

Iran: Composition of Imports

(1968-77)

(percent)

Type of Commodity	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Total	100	100	100	100	100	100	100	100	100	100
Intermediate goods	61.6	64.0	63.7	64.8	62.1	60.8	64.5	53.1	52.6	54.2
Capital goods	27.1	25.1	23.3	23.4	25.0	24.2	20.1	29.8	29.8	27.2
Consumer goods	11.3	10.9	13.0	11.8	12.9	15.0	15.4	17.1	17.6	18.6

Source: Table (14).

substitution led to a growth of light industry in and around Tehran by mid-1970's. These products were to satisfy the growing demand for consumer products. Furthermore, the authorities seem not to be able to pursue the import substitution policy, after the oil boom of 1973-74, and instead, the import of consumer goods increased steadily from 11.3 percent in 1968 to 12.9 percent in 1972 and then increased sharply to reach 18.6 percent in 1977.

On the average, seventy-five percent of imports of consumer goods consisted of agricultural products. Furthermore, the demand for luxury goods on the part of the upper classes started to increase, leading to a situation whereby the import of consumer goods increased (as was mentioned above), while at the same time, import substitution policy was, to some extent, planned to satisfy these needs.

The share of imports of machinery and equipment (capital goods) in total imports declined from 27.1 percent in 1968 to 20.1 percent in 1974, and then increased to the previous level of 27.2 percent in 1977. The pattern of production in the industrial sector is mainly of the assembly type, with relatively low domestic value added, and is highly dependant on imports. Iran's modern industry is characterized by large-scale, capital intensive plants, concentrating on import substitution, especially the production of consumer goods bought by the high-income groups. Although the existing tariff system allows intermediate and capital goods

to enter the country at a relatively low cost, while luxury goods are heavily taxed, imports of the latter have increased. This is due to the fact that residents in the high-income brackets are not deterred from buying by high costs.

In addition, the main vehicles for economic development for the post-oil boom period (1974-75) were bilateral economic agreements concluded with the main industrialized nations of the world. A number of new agreements were especially oil-for-food exchange while others were more general arrangments. The arrangement with the United Kingdom, however, ultimately brought the flow of finished and semi-finished products rather than manufacturing plants.[18] Another example would be the $ 40 billion U.S.-Iran bilateral trade agreement in 1976.[19]

Thus, the declining trend of the share of intermediate goods, the stagnant trend of the share of capital goods and finally the rapidly increasing share of consumer goods as well as agricultural foodstuffs, all being relative to total imports, showed that oil receipts were being used not only for industrialization but also to satisfy the needs of upper classes.

The cost of living in the country, however, has been kept from rising, to a large extent by periodic imports of consumer goods in short supply, and by increasing imports of new materials and intermediate goods to feed the flourishing

"consumer-goods" industries. This, however, contributed to imported inflation; the increased dependence on the supply of imported goods and the relatively higher level of industrial demand for imports, made Iran more sensitive to international fluctuations. Although the availability of substantial amounts of foreign exchange, resulting from oil, would seem to provide the planners with a strong and effective weapon to combat domestic inflation, Iran's imports which themselves were subjected to price rises, somehow added to cost-push pressures.

During the period 1973-78, the total imports of goods and services of OPEC was about $530 billion compared with $700 billion total exchange earnings of OPEC in the same period. OPEC's total imports of goods and services were $360 billion and $170 billion respectively during the same period.

Iran, with its more diversified and advanced economy was the leading OPEC importer with more than $64 billion in just goods, followed by Saudi Arabia $62 billion, Venezuela and Nigeria $42 billion each. These four countries accounted for nearly three-fifths of all OPEC imports. [20]

The United States ranked as the largest supplier of Iran. American exports to Iran have been doubling in value every year since 1973, and accounted for 20 percent of total Iranian imports. Other major exporters to Iran, besides the United States, are Japan and West Germany.

The enormous increases in oil revenues, therefore, provided Iran with substantial foreign exchange which in turn led to increase in imports of goods and services to satisfy the needs for both development and consumption. Substantial increase in imports raised the level of total available goods and services. However, in order to have relative price stability, increases in total available goods and services (including imports) and the monetary expansion should have the same proportion. In the next chapter, Iran's oil-induced inflation will be studied.

REFERENCES

1. Amuzegar and Fekrat, op.cit., p.38.

2. Plan and Budget Organization, Iranian Statistical Centre, The Statistical Yearbook of Iran (Tehran: 1977 2536), p.593; Plan and Budget Oranization, Iranian Statistical Centre, The Statistical Yearbook of Iran (Tehran: 1972 1351), p.590; and International Financial Statistics, Vol. 31 (Sept. 1978), p.183.

3. Iran Chamber of Commerce, Industries and Mines, Iran Chamber of Commerce, Industries and Mines Directory (Iran, Tehran, 1975), p.7 and The Statistical Yearbook of Iran, 1977, op.cit., p.592.

4. Julian Bharier "Economic Development in Iran 1900-1970", (London: Oxford University Press, 1971) p.125.

5. The Statistical Yearbook of Iran, 1977, op.cit., p.574.

6. International Financial Statistics, Vol. XXXII, 1979, pp.230-231.

7. Bharier, op.cit. p.70: Bank Melli Iran, Annual Report and Balance Sheet, (Bank Markazi Iran: 1954, 1955, 1969).

8. Quarterly Economic Review - Iran, (1974, 1976, 1980) Annual Supplements, 90.

9. The Statistical Yearbook of Iran, 1977, op.cit., p.630.

10. Robert E. Looney, Economic Origins of the Iranian Revolution, (New York: Pergamon, 1982), p.61.

11. The change in foreign trade bottleneck is measured in two ways: first by the movement in the terms of trade, and second by the movement in capacity to import. See Marine W. Mueller, "Structural Inflation and the Mexican Expenditure" Yale Economic Essays, 5(1965), p.154.

12. M.G. Weinbaum, "Agricultural Policy and Development Policies in Iran" Middle East Journal 31 (1977), p.436.

13. Ibid., p.446.

14. Loring Allen, OPEC Oil, (Cambridge, Mass.: Oelgeschager, Gunn & Hain, 1979), p.148.

15. International Financial Statistics, Vol. XXXII (1979) pp.228-231.

16. This is true for Venezuela, see: (Mathew Edel, Food Supply and Inflation in Latin America, (New York: Fredrick A. Praeger, 1969), p.53.

17. Halliday, Fred, Iran: Dictatorship and Development, (England: Penguin Books, 1979), p.148.

18. Keith S. McLachlan,"The Iranian Economy, 1960-1976", in H. Amirsadeghi, Twentieth Century Iran, (New York: Holmes & Meier, 1977), pp.160-161.

19. Economist of London, August 20, 1976, p.48, col.3.

20. Allen, op.cit., pp.139-140.

CHAPTER IV

Inflation as a Cost of Sharp Increases in Oil Revenues

1 - Introduction

Inflation in OPEC countries is a relatively new phenomenon. The annual rates of inflation of four[1] OPEC members have been examined here, in order to investigate the possible effect of oil revenues on prices. These rates, for the periods of 1967-72 and 1972-77 have been 4.9 percent and 9.5 percent in Iraq, 2.6 percent and 8.8 percent in Venezuela, 3.5 percent and 20 percent in Iran, and 3.0 percent and 35.8 percent in Saudi Arabia, respectively[2].

The inflation rates, therefore, increased drastically during the immediate five "post-oil-boom" years, compared to the five years period before the boom years. They were doubled in Iraq, increased by five times in Venezuela, more than six times in Iran, and more than ten times in Saudi Arabia. Not only did oil revenues increase inflation rates in these countries, but countries with higher oil revenues - Iran and Saudi Arabia - had higher increases in prices.

2 - The Nature of Inflation

The important set of theories of inflation[3] that is of primary relevance to economic development, comprises of the structuralist view and the competing monetarist view. The structuralists maintain that "the underlying causes of inflation in underdeveloped countries are to be found in

their basic economic development problems and in the structure of their systems of production and/or trade organizations"[4].

The structuralists believe that each economy inherits a group of problems specific to itself. Emphasis is therefore placed on the economic and social imperfections inhibiting economic development, rather than the supposed smooth flow of goods and factors to where their reward is greatest. The structural theory of inflation is based on viewing certain structural rigidities as being the prime cause of inflation. These economists maintain that inflation is, in the main, a phenomenon which can be explained by certain disequilibria resulting from these rigidities in the structure of the system.

While structuralists believe that strict control of inflation - which is the result of structural imbalances - may result in unemployment and stagnation, and then perhaps political instability, the monetarists suggest that the control of inflation is one of the major objectives of economic policy in developing economies, indicating a belief that price stability is a necessary pre-requisite for sustaining economic growth.

Monetarists find the chief cause of inflation in government mismanagement of economic affairs, such as maintaining budget deficits and excessive credit expansion. According to G. Haberler, "it is not surprising that poor and

backward countries, when they wake up and set their minds to developing in a hurry and to catch up with the more developed countries, are continually tempted to overspend their meagre resources and to live beyond their means"[5].

Monetarists view inflation as a result of the creation of excess purchasing power. They believe that inflation is incompatible with economic development and that stabilization is necessary for economic development. While monetarists view the structural rigidities as a result of inflation, the structuralists reverse the causation, maintaining that inflation is a result of structural rigidities. Monetarists advocate stabilization programs to affect the roots of inflation these include the reduction of excess demand through the elimination of budget deficits and the curtailment of inflationary credit expansion, subsidies, and inflationary wage increases.

Structuralists, on the other hand, consider stabilization programs as undesirable because they attack the symptoms not the basic causes of inflation: public and private investment is cut without increasing saving; also they believe that stabilization programs damage those dynamic sectors in the economy that are necessary for economic development.

In spite of their differences, both the monetarists and the structuralists are concerned with rapid economic development and inflation. They agree on the close

relationship between money supply and prices.

The monetarists analysis of inflation can be summarized as follows: The causal relation runs from money to prices and a lag in output; any persistant increase in the money supply relative to output is a sufficient condition for inflation; the magnitude and length of inflation is dependent on the magnitude and persistence of monetary growth; the level and persistence of inflation is independent of the level of employment in the country and it is the increasing growth rate of the money supply which leads to inflationary pressures[6].

This monetarist approach - which was to a great extent accepted by Iran's central bank (Bank Markazi Iran) - is derived from Fisher's version of the Quantity Theory of Money. This theory postulates a relationship between the quantity of money in an economy and the price level. Although a doubling of the money supply may be expected to double the price level, this result, as Fisher discussed, will not occur immediately or automatically. The economy will go through a transition period during which the price level increases to its new value[7].

The theory can be stated formally in terms of the Fisher equation[8]

$$MV = PT$$

where M is the stock of money[9]; V is the velocity of money; P

is the average price level, i.e., dollars per unit of Y quantity; T is a measure of the flow of real goods and services, i.e., unit quantity per period of time. Since the total money volume of transaction (the left hand side of the identity) is necessarily the same as money value of goods sold (right hand side), the two sides of this equation are equal by definition. In other words, each transaction is simultaneously recorded on both sides of the equation.

Furthermore, the theory assumes that: T is constant, because the economy is at full employment and that V is a constant, being determined by certain institutional features of the economy.

Therefore, the above identity can be rewritten as:

$$M = \frac{T}{V} P,$$

Since $\frac{T}{V}$ is a constant, it implies that changes in the stock of money are associated with proportionate changes in price level.

The quantity approach remains an important analytical tool in the works of some influential economists, such as Milton Friedman[10].

Friedman's quantity theory is more sophisticated than the theories of Fisher and the Cambridge economists, yet it follows their tradition; "the emphasis on income as a surrogate for wealth, rather than as a measure of the 'work' to be done by money, is conceptually perhaps the basic difference between more recent work and the earlier versions

of the quantity theory"[11].

Friedman, however, views money as one kind of asset, a commodity which yields utility to its holder according to the functions it performs[12]. Furtherfore, he notes that money does matter and that any interpretation of short term movement in income activity based only on the real section is likely to be somehow at fault because it neglects monetary changes[13].

To summarize, the conditions which must be met under the quantity theory of money are[14]:

1. Neutrality of money: the net effect, that is the effect after an adjustment period, of a change in the money supply is only a change in price level.

   In that sense money is neutral and this means that certain other conditions prevail:

   a) price flexibility

   b) the existance of the distribution effects: change in the quantity of money leads to price change which in turn leads to changes in relative prices. Consequently distribution of income and wealth will be affected;

   c) neutrality of money requires the absence of money illusion; a situation in which a price increase would induce an economic unit to buy less, even if their income changes at the same rate;

   d) there must be no de-stabilizing effects caused by

price expectations. An elasticity of price expectation equal to one is sufficient. This shows how expected future prices react to a change in current prices.

2. Neoclassical (classical) dichotomy: the price level is thought to vary proportionally with the quantity of money.
3. The stock of money in the economy is determined by the monetary authorities which in turn is largely affected by increases in the national income. Exports are the major factor leading to the growth in national income[15].
4. The rate of interest is fixed at a constant level. This assumption, in theory at least, eliminates the role which the rate of interest plays in the determination of the public's demand for money.
5. The demand for money is highly stable; there are important factors affecting the supply of money that do not affect the demand for money. This is particularly useful in tracing out the effects of changes in supply. This assumption provides a link between money, income and prices.
6. While velocity of money is assumed constant, the output - total available goods and services - may change in response to changes in the money stock.
7. The economy is an open one; imports are included in total available goods and services. They also play an important role in price stabilization.

The foregoing theories of inflation provide a background for a look at inflation rates and their nature in Iran.

3 - Rates of Inflation in Iran

The period extending from 1954 to 1977 will be divided into three sub-periods to take account of completely different circumstances that have characterized the twenty three year period. 1954 marked the first year of post-nationalization of the oil industry under Mossadegh. The nationalization period lasted four years at which time the monarchy was restored. The 1973 boost in oil prices was to substantially alter the economic situation of Iran, both in terms of growth and in terms of inflation.

In addition, 1978 is a year in which political unrest and demonstrations began which led to the fall of Shah in February 1979. The three sub-periods being examined, therefore, would be 1954-66, 1967-72 and 1973-77.

Period 1954-66 which covers both the Second and Third Development plans, is characterized with relatively low rates (annual average) of increased in oil revenues and economic growth - 0.32 percent and 10.2 percent respectively - whereas the period 1967-72 (Fourth Development plan) had relatively moderate rates of growth of boil oil revenues and GNP, 1.3 percent and 12 percent respectively. The emphasis, however, would be on the period 1973-77 (Fifth Development plan), which identifies with relatively higher prices of growth of

oil revenues and GNP, 18.3 percent and 20.4 percent respectively.

Although, compared with Latin American countries, Iran's inflation rates do not seem serious, it is important to note that the Iranian authorities were very concerned about it and inflation was considered as a major problem in Iran's economy[16]. This was also evident in the reports prepared by The International Monetary Fund[17].

The relative price stability of early 1950's was interrupted by a round of inflation in 1953-54. These were mostly due to the political process of the nationalization of the oil industry, which caused a substantial decline in total production. During the boom years of 1957-61, pursuit of the moderate goals of development plans created inflationary pressures. However during 1954-66, actual annual inflation averaged not more than four percent (see Table 16).

After the relatively stable period of the 1960's, the price index began to show an upward trend in 1970 as development activities accelerated under the Fourth plan (1967-72). Relatively higher increases in GNP and inflation for the period was partly due to the sharp increases in development expenditures on the economy, accompanied by poor performance of agricultural products as a result of a two year period of semi-drought in many agricultural areas which in turn led to rapid migration of farmers to the big cities. Yet, the annual average rate of increase during the period

TABLE (16)

Iran: Price Indexes (1954 - 1977)
(1975 = 100)

	Wholesale Price		Consumer Price	
	Index	Percentage Change	Index	Percentage Change
1954	50.5	19.7	37.3	2.5
1955	48.5	-4.0	38.6	3.5
1956	51.9	7.0	41.4	7.2
1957	52.1	0.4	44.1	6.5
1958	50.3	-3.5	44.0	-0.2
1959	52.3	4.0	48.8	11.0
1960	54.0	3.2	53.7	10.0
1961	54.7	1.3	55.4	3.2
1962	55.4	1.3	55.8	0.8
1963	55.5	0.2	55.9	0.2
1964	58.2	4.9	58.2	3.9
1965	60.2	3.4	59.4	1.2
1966	59.5	-1.2	59.2	-0.3
1967	59.6	0.2	60.1	1.5
1968	60.0	0.7	60.5	0.7
1969	61.6	2.7	62.7	3.6
1970	63.4	2.9	63.7	1.6
1970	67.3	6.1	66.4	4.2
1972	71.2	5.8	70.7	6.5
1973	79.2	11.2	77.6	9.8
1974	92.6	16.8	88.7	14.3
1975	100.0	8.0	100.0	12.7
1976	109.0	9.0	111.3	11.3
1977	127.7	17.2	141.7	27.3
Averages				
1954 - 66		2.8		3.8
1967 - 72		3.0		3.0
1973 - 77		12.4		15.1

Source: International Financial Statistics, Yearbook Vol. XXXII, (1979), pp.228-231.

reached only 3.0 percent for the cost of living index (see Table 16). In general, price stability seems to be maintained up until 1972-73.

With the advent of the oil boom and the extremely high rates of growth of expenditures both in the public and private sectors, and also, due to the limited productive capacity, inflationary pressures were created and the annual average rate of inflation reached 12.4 percent and 15.1 percent for the WPI and CPI respectively during 1973-77, thus reaching double digit proportions[18]. The wholesale price and cost of living indexes reached accelerated rates of 11.2 percent and 9.8 percent, respectively in 1973 and increased to 17.2 percent and 27.3 percent respectively in 1977.

Table 17 compares the growth rate in Iran's oil revenues, GNP and inflation for the three sub-periods under consideration. The country achieved the remarkable growth rate of 20.4 percent during post-oil-boom of 1973-77, despite the brief economic slump of 1975 world recession and the political unrest in 1977-78[19]. A proposed rate of growth of 40 percent[20] in GNP in real term during 1974-75, for example, was impossible to obtain at the low inflationary rates of less than four percent for the Third and Fourth plans.

A marked contrast exists between the period 1954-66[21] and 1967-72 on one hand and that of 1973-77, on the other. The former periods saw relatively low rates of increases in oil revenues (less than two percent), with relatively low

growth rates (between 10-12 percent) which accompanied with low inflation rates (2-4 percent). The latter period, in contrast, witnessed substantial increase in oil revenues (18.2 percent), high economic growth (20.4 percent) and double digit inflation rates of 12.4 percent and 15.1 percent for WPI and CPI respectively[22] (see Table 17).

Iranian inflation cannot be explained by one single inflation theory alone: a number of sources are logically possible and at least not inconsistent with the inflation rates. The factors behind each analysis of inflation vary from country to country. To evaluate the relevant hyphothesis, one should examine the underlying assumptions in Iran, to find out if facts correspond to the theory.

Beginning with the oil-boom year of 1973, both the government's financial activities and the private sector's credit were largely expanded. It is important to emphasize that because the oil revenues accrued directly to the government, they did not affect the domestic money supply until the government decided to inject them into the domestic economy through its expenditures.

As mentioned earlier, government expenditures and credit in the private sector and hence the money supply increased rapidly after 1973. Money supply increased by 61.4 percent in 1974, compared with 27.4 percent for 1973, and continued to increase at a rate of 32 percent per year for the next three years. The monetary expansion in the demand side of

TABLE 17

Iran: Growth Rates of Oil Revenues, GNP, WPI, and CPI (1954-77)
(Annual Average - percent)

	Receipts From Oil Revenue	GNP	WPI	CPI
1954 - 66	0.3	10.2	2.8	3.8
1967 - 72	1.3	12.0	3.0	3.0
1973 - 77	18.3	20.4	12.4	15.1

Source: Tables 1, 2 and 16.

the Iranian economy put pressures on the supply side. Domestic production could not respond fast enough to the growing demand. This can be explained partly by a) the existance of the limited production capacity in a typical LDC, and b) the fact that the factors of production in LDC's are immobile, scarce and within an imperfect market.

The massive pressure on the supply side was eliminated to a large extent after 1973, by the import of foods and basic commodities. Imports grew with the average annual compound rate of 44 percent during the period 1973-77, compared to 15 percent for the period 1967-72 (see Table 18). Due to its enormous oil revenue Iran could afford rapid increases in imports.

The combination of domestic production and net imports[23], could not, however, grow at the same proportion as the monetary expansion. Although domestic production and net imports grew during the period under consideration, there was a growing lag in domestic production and imports[24] compared with the growth of the quantity of money. Given the conditions already mentioned under the quantity theory of money, an increase in money supply, increases the prices. Furthermore, increase in money supply creates increasing demand for imports. Given the increasing oil revenues, imports increase and hence imported inflation affect the price levels (imported inflation will be discussed latter, in more details).

TABLE (18)

Iran: Imports* and Exports** 1954 - 1977 (Billion Rials)

Year	Import (cif)	% Change	Exports (fob) (Including Oil)	% Change
1954	5.3	-	10.0	-
1955	7.4	39.6	17.4	74.0
1956	9.1	23.0	34.0	95.4
1957	23.7	160.0	49.3	45.0
1958	31.2	31.6	56.1	13.8
1959	38.0	21.8	58.2	3.7
1960	42.4	11.6	63.9	9.8
1961	45.8	8.0	64.5	0.9
1962	40.2	-12.2	62.3	-3.4
1963	39.7	-1.2	69.6	11.7
1964	51.0	28.5	94.9	36.3
1965	65.1	27.6	98.8	4.1
1966	70.5	8.3	99.2	0.4
1967	84.8	20.3	146.1	47.3
1968	93.6	10.4	142.5	-2.7
1969	103.3	10.4	159.1	11.6
1970	112.4	8.8	198.7	24.9
1971	126.7	12.7	289.8	45.8
1972	163.0	28.6	305.9	5.5
1973	208.0	27.6	426.0	39.3
1974	328.9	57.7	1,458.8	242.4
1975	625.3	90.6	1,367.1	-6.3
1976	808.2	29.2	1,651.7	20.8
1977	923.4	14.2	1,713.1	3.7

Notes: * cif.
** Including Oil

Source: International Financial Statistics, Yearbook 1983, pp. 282-283.

The quantity theory of money explained above, implies that in order to have economic growth without inflation, monetary expansion should be set so as to have the same rate of increase as the increase in available goods and services (domestic production plus net imports).

Information available on Iran's economy suggests that not only did the utilization of the nation's oil revenues for domestic expenditures exceed a certain limit, but that due to Iran's strategy of rapid development in a relatively short time, inflationary pressures were created: as output was not able to expand correspondingly, prices increased faster, compared to the pre-1973 oil-boom period.

Besides the main monetary expansion, there were other factors which contributed to the creation of inflationary pressures.

Population had steady growth rates: as shown in Table (19), the average annual compound growth rate of the total population during 1954-77 was 2.8 percent. Total population was estimated to be more than 20 million in 1957, over 27 million in 1967 and more than 34 million in 1977, therefore having a growth of seven million per decade with a slightly lower growth rate in the latter period (1967-77). The population increased faster in cities than in rural areas - 4.9 percent vs. 1.8 percent - which can mostly be explained by the migration from rural areas to urban centers. According to Iranian officials[25], the country's absorptive

TABLE (19)

Iran: Population* (1954-1977)

Year	Population Million
1954	18.2
1958	20.4
1962	22.8
1966	25.5
1970	28.7
1974	32.1
1977	34.3

Growth Rate: Percent

	Average
1954-58	2.9
1958-62	2.9
1962-66	2.9
1966-70	2.9
1970-74	2.8
1974-77	2.3

Note: * There has been a population census every ten years, the last one being 1976.

Source: International Financial Statistics, Vol. XXXII, 1979, pp.230-231.

capacity was being utilized to the full from about 1973 onwards. The frequent shortages of electric power; shortages of skilled and semis-skilled labour; the congestion and inefficiencies in the ports and the inadequencies of the transport system all point in this direction.

Relative decline in agricultural growth combined with better facilities - job opportunities resulted from government spending, health, education, etc. - created mass movements towards the main cities. This, in turn, resulted in a construction boom in those areas which was frequently uncoordinated with available water, power, sewage, telephone facilities and other services. The new migrants were affected by western types of utilization of consumer and luxury goods, particularly electrical appliances such as air conditioners. This in turn overburdened the country's supply of electric power[26].

There was a growing concern that Iranian economic development is hampered by serious electric power shortages[27]. The power shortages in 1977 - about 500 megawatt - was attributed mainly to delay in completion of Reza Shah Kabir Dam which would have generated 1,000 megawatts when completed[28]. By comparison with eight other countries with comparable levels of per capita GNP in 1975, per capita electric power production in Iran ranked lowest at 460 k.w.h. per annum amongst a median value of 1,140 k.w.h. per annum[29]. This in fact was the main reason[30] behind the

situation in which, despite domestic demand, very few factories could utilize their full capacity. According to a government study [31], the capacity utilization was 61 percent in textiles, 96 percent in cement, 46 percent in brick-making, 69 percent in the automotive industry (51 percent in the car industry) and 36 percent in tractors. Arak Machine Tools[32], for example, produced 13,751 tons of goods in 1976-77 against a capacity of 23,000 tons.

These basic shortages combined with the continuous injection of oil money into the economy - via the ambitious development programs - led to a situation in which the performance of economic development was extremely uneven. The waste factor in the Iranian economy has been estimated to be 40 percent due to asymmetrical development and poor coordination among key factors such as manpower availability, infrastructure, port and rail facilities, etc.[33]. This in turn, led to a large extent, to substantial duplication. One example would be the inability of existing ports and transport facilities to accommodate the vast increases in imports for consumption and development programs. This led to a speedy and costly build up of ports with some large over expansion[34] of port facilities and airports in some instances, because of both lack of coordination and national prestige considerations.

By 1975, the price setting agency of the government was suddenly faced with a flood of intermediate, consumer,

industrial, and other types of goods coming into Iran. Consequently the assignment of appropriate prices for the goods was practically impossible, and these goods were permitted to reach the market at prices higher than the controlled prices might have been, thus accelerating the price rate spiral. This combined with a number of different bottlenecks in port capacity, transport facilities, distribution system, and warehousing, as well as the increased needs of the market places added costs to already expensive items and delayed their arrival at purchase points, reducing the potential supply of goods needed to fight back inflationary pressures, counterbalancing the moderating effect of imports on prices and in some instances, adding to them. For example, in 1975 $1 billion was paid to shippers for vessels immobilized due to inadequate port facilities[35]. All this, combined with the overall world inflation, was passed on the consumers.

Government's attempts for improvement in Iran's distribution system had some short-run favorable effects. Bureaucratic red tape was cut, storage facilities were guild, high priority goods were given special attention, more trucks were purchased and port facilities were expanded. For example, the waiting period for releasing the imported goods in ports decreased from 180 days in 1975, to 14 days in 1977[36]. Newspapers reported that all major bottlenecks have been overcome. However, this was mainly due to the fact that

the demand for goods and services levelled off, since the boom and expenditures decreased at the end of 1976.

There is a standard pattern of structural transformation for LDC's industrialization today. Iran is no different from other countries in experiencing these common problems, it is different, insofar as oil earnings have eliminated the external bottlenecks which is characteristic of most LDC's. One, therefore, can not reject some structural forces behind the Iranian inflation.

Nowhere, however, in the Central Bank's analysis of inflation (Bank Markazi), were the structural causes considered[37]. Instead, the emphasis was given primarily on monetary stabilization policies. As the Bank indicated "due to the very speedy growth of income the total demand increased at a higher rate than total supply of goods and services. This situation not only resulted in creating new difficulties for the economy, but also increased inflationary pressures"[38]. According to the report, not only is inflation primarily linked with monetary factors, but the new difficulties (structural bottlenecks) were created by these inflationary pressures. Iranian economists believed that aggregate demand was determined by factors associated with Fisher's version of the quantity theory of money[39].

As was mentioned above, the stabilization programs suggested by Bank Markazi were primarily based on monetary factors. Credit restriction policies were practiced on

several occasions. For example in 1972, the Bank ordered the country's three largest banks to eliminate their credits and loans to the construction sector, on the one hand, supervising the savings accounts in order to channel them into productive activities, and on the other hand, obliging the commercial banks to allocate 30 percent of their saving deposits to purchase government bonds. The official rediscount rate was then increased from seven percent to seven and one-half percent[40].

The maximum permitted increase of credits by commercial banks to the private sector was lowered from 30 percent in 1976 to 20 percent in 1977. At the same time, the maximum interest rates charged by commercial banks increased by one percent, while the interest rates charged for construction purposes increased 3 percent[41]. Given inflation rates, however, these nominal rates represented negative real rates.

These restrictive measures were practical in most of the years of the Fourth and Fifth plans; however, they cannot be considered as effective and successful policies. Many factors can be cited to explain their failure. In most cases, the credit restrictions and increases in borrowing costs were imposed on those economic activities which had greater contributions to make towards increasing overall domestic supply. This decreased the growth rate of those sectors, creating stronger effect on inflationary pressures, and indicating not only the failure of channelling credits

and loans to productive sectors, but taking the already existing credits away from those sectors. This argument is based on the fact that certain types of investments do not have a significant anti-inflationary impact. The decline in growth rate of government consumption expenditures, for example, from 24 percent in 1976 to 7 percent in 1977 was considered a major stabilization move[42].

The government's stabilization program included liberal import policies. Massive imports of foods and goods began in the mid-1960's and increased at a high rate after the early 1970's. The main objectives were: to provide food products, to accelerate industrialization and economic growth by importing basic needs, to undercut speculators, and to relieve demand pressures. To undertake this policy, the government provided several facilities for imports, and import tariffs were either decreased or completely eliminated. During the Fifth Development Plan, the registration fees for imported goods were diminished from 5.5 percent to one percent. The total value of imports increased by 40.6 percent per year during this period, from $2.6 billion in 1972, reached $14.1 billion in 1977.

Government subsidies are other means for implementation of anti-inflationary policy. These are payments made by government for the differences between the foreign buying price and the domestic price of imported goods. In 1974-75 alone the Iranian government paid more than $1.2 billion as

subsidies[43] and this has climbed since.

The major objective of the government's anti-inflationary program, however, was stabilization via statutory price control, with the threat of persecution for offenders. In the summer of 1975, the government of Iran, with threats of decreasing tariff protection, forced all manufacturers, retailers and wholesalers to reduce their prices to those of May 1974; 10 to 20 percent below the existing price levels. These cuts were not considered harmful to the economy, and were intended to allow producers to earn still a fair profit. Several organizations were then created to report any deviation from the official prices for approximately 650 essential consumer goods. The enforcement was carried out by an army of 20,000 official price watchers, which was supplemented by tens of thousands of students and housewives[44].

There were several arrests of merchants and shopkeepers for profiteering and hoarding; more than 10,000 during a period of 3 months[45]. Millions of people were subjected to fines, and many were sent to prison, including those in the higher classes. This led to a decline in the cost of living by 4.6 percent, but even the government admitted that these were stop-gap measures aimed at breaking the inflationary psychology for the benefit of consumers. The results, however, were delays in production, a lowering of the quality of the commodities, and uncertainty on the part of the

producers.

In 1976, the government admitted failure, and at that time, imported inflation was blamed[46]. However, it was not until early 1977, that a gradual move towards relaxation of rigid price control began. Prices of a number of foodstuffs including meat and of some services have been freed from control. It is interesting to note, however, that prices have increased sharply as a result of the price liberalization policy and that many basic services have doubled in cost[47].

In addition, the policy cost the goverment $4 billion for the year 1974-75, to acquire and distribute essential foodstuffs, with total subsidies to be $1.9 billion for the next two years, starting at March 1976[48]. The policy also had adverse effects on the moreale of the private sector, commercial and industrial companies; reports from Tehran suggested that private investment has slumped as profit margins were dramatically reduced[49]. The argument is based on the assumption that government controls those goods that are essential and since their prices are not increasing, profit is low. The price control policy, has discouraged both the private investors already involved in the market and also those potential investors already involved in the market and also those potential investors who could have been attracted into production of essential goods, to invest in these fields[50].

To conclude, the cut in government expenditures, credit restriction and severe price controls are devices that might prove helpful in the short run, in terms of slowing the rate of inflation. As can be seen in Table (16), the rate of increase in consumer price index (CPI) and wholesale price index (WPI) decreased from 14.3 percent and 16.8 percent in 1974, to 12.7 percent and 8 percent ~~in~~ 1975 respectively. However, in the long run they are less effective, especially if the much-desired high rate of economic growth were to be maintained. Imposing these restrictive methods, therefore, will either slow, or halt the rate of increase in the economic growth, creating further bottlenecks in the process of economic development.

The existance of Monetarist factors of inflation can not be denied in Iran, particularly after 1973. Substantial increase in oil revenues combined with the authorities' desire of "speedy development", led to some monetary mismanagement, confusion and duplication of economic efforts.

The main cost-push factors of inflation, relevant to Iran are import prices and wages. As was mentioned earlier, Iran's imports increased sharply due to both oil revenue increases and the development plans. Table (20) shows the wholesale price index and its major components including the trend in the prices of Iranian imports. Amazingly in 1973, the import price index increased 14.3 percent compared with an 8.6 percent rise in 1972. The annual average growth rate

TABLE (20)

Iran: Wholesale Price Index with Major Components
1964 - 1977

1974 = 100

Year	General Index	Imported Goods	Exported Goods	Annual Change (1)	(2)	(3)
1964	57.3	62.7	43.9	6.3	0.4	7.3
1965	59.4	63.0	49.7	3.6	0.4	-1.1
1966	60.7	63.6	49.2	2.2	1.0	4.3
1967	61.8	64.2	49.4	1.7	1.1	0.4
1968	62.7	63.9	50.7	1.5	-0.5	2.6
1969	62.2	66.1	53.5	-0.8	6.6	5.5
1970	66.8	69.4	54.3	7.4	2.0	1.5
1971	71.7	71.7	57.4	7.3	2.0	1.5
1972	75.3	77.9	66.7	5.0	8.6	16.2
1973	85.5	89.0	92.4	13.5	14.3	38.5
1974	100.0	100.0	100.0	17.0	12.4	8.2
1975	105.3	104.0	103.5	5.3	4.0	3.5
1976	119.5	110.7	125.2	13.5	6.4	21.0
1977	136.9	124.1	140.5	14.6	12.2	12.2

Average Changes (Percent)

	(1)	(2)	(3)
1964 - 73	4.8	3.7	8.1
1973 - 77	12.8	9.9	16.7

Sources: The Statistical Yearbook of Iran, 1977, pp.617-623; The Statistical Yearbook of Iran, 1972, p.634 Bank Markazi Iran, Economic Report and Balance Sheet, (Tehran, Iran: 1977 (2536)), p.291.

in the prices of imported goods was 9.9 percent during 1973-77, compared with 3.7 percent for period 1964-73.

A direct international cost-push effect results, therefore, when an increase in the price of imported goods raises the overall cost of living for consumers and as well raises the cost of production, which, despite the government's subsidy program, is also passed on to the consumers. These, on top of rising domestic aggregate demand and the original demand-pull inflation of the immediate post-1973 period, gave rise to significant cost-push elements[51].

Although the imported inflation in Iran is partially due to stagflation[52] prevalent in western industrialized countries - due in turn, in part to sharp increases in oil prices[53] - it is not correct to suggest that the high rate of domestic inflation is solely due to international factors. On the contrary, most studies on the subject report that the contribution of international to domestic inflation is not more than 25 percent[54]. A substantial portion of Iranian inflation is due to domestic causes.

Another important cost-push element is wage increase. Wages in skilled jobs rose up to 50 percent in 1975 and 1975 and these rates, combined with inefficiency in production and some other factors - shortages of skilled and semi-skilled workers, imperfect competitiveness of capital market, bureaucratic delays - made Iranian industrial goods highly

priced compared with their international counterparts.

One of the indications of shortages in labour market is their corresponding wages: the income of ordinary labourers rose relatively more slowly than that of skilled workers: while an unskilled construction labourer was earning $5.50 per day, a pipe-fitter could take home $440-460 per month. Furthermore, a good bilingual secretary, an engineer with no experience and a graduate manager were paid $1200, $2000 and $4500 per month, respectively[55]. It was estimated that during the Fifth Plan period (1973-78), there would be a shortfall of 721,000 in labour market, of which almost 80 percent would be skilled and semi-skilled industrial and skilled construction workers[56]. To overcome shortage of human resources, foreign workers were brought into the country. By March 1977, some 60,000 foreigners possessed work permits[57].

However, despite the existance of wage cost-push elements in the construction and manufacturing sectors, it is not correct to conclude that wage-cost-push pressures dominated the inflationary process in Iran, since there was no strong labour union. In addition, there existed considerable reserves of unskilled labour in the agricultural[58] sector which contributed through migration to the urban unemployment[59]. Wage increases, therefore mostly occurred in particular economic sectors and were not translated into general price increase.

In sum, while no inflation theory can explain the Iranian inflation alone, one can combine different observations to better understand the underlying causes of inflation in Iran.

Higher relative demand, compared with supply, therefore can mainly explain the Iranian inflation: while structuralist elements can, to some extent, explain the rate of inflation during the period under consideration, the monetarist forces associated with substantial increases in oil revenues have to a large extent contributed to the double digit rates of inflation of the post-oil-boom year of 1973.

Among the cost-push elements, increases in prices of imported goods and services contributed, to a limited extent, to inflation, whereas the liberal import policy itself limited somehow this contribution via stabilization. Wages, on the other hand, increased in some sectors, but did not seem to have significant contribution in general prices.

4 - Regression Results

Table (21) shows the regression result for the effect of money supply (M) and Gross National Product (GNP) on price levels (Wholesale Price Index[60]: WPI).

The general model used can be written as:

$$p = a + \sum_{i=o}^{n} B_i \hat{Y}_{-i} + \sum_{i=o} \delta_i \hat{M}_{-i} + e$$

where p is the dependent variable (WPI), a is the intercept for the model, $\hat{Y}_{-i}$ is GNP in constant prices after i years

TABLE (21)

Iran: Effect of Money Supply-on-Wholesale-Price Index (WPI)

Model	Intercept	GNP In Constant Dollars Lags 0	1	2	3	4	Money Supply Lags 0	1	2	3	4	R-Square	Durbin Watson
1	-0.59 (-0.30)*	-0.05 (-0.52)	-	-	-	-	-0.30 (2.69)	-	-	-	-	0.30	1.68
2	-2.62 (-1.41)	-0.05 (0.66)	0.01 (0.13)	-	-	-	0.16 (1.55)	0.29 (2.96)	-	-	-	0.57	1.46
3	-4.29 (-2.57)	-0.21 (-2.47)	0.006 (0.07)	-0.05 (-0.64)	-	-	0.16 (1.84)	0.27 (3.17)	0.23 (2.15)	-	-	0.75	0.81
4	-3.79 (-1.96)	-0.28 (-3.16)	0.08 (0.78)	-0.11 (-1.46)	-0.17 (1.47)	-	0.20 (2.07)	0.23 (2.69)	0.15 (1.47)	0.19 (1.66)	-	0.82	1.29
5	5.31 (-2.28)	-0.18 (-1.43)	-0.16 (-0.83)	0.09 (0.52)	-0.02 (-0.13)	-0.02 (-0.89)	0.18 (1.78)	0.31 (2.98)	0.18 (1.21)	-0.06 (-0.32)	0.30 (1.36)	0.86	1.21

* Figures in parenthesis are t-ratios for corresponding estimated coefficient.

Sources: Tables (1), (16). For money supply during the period 1954-77; International Financial Statistics, Yearbook, 1983, pp.280-281.

lag, $\hat{M}_{-i}$ is money after i year lag, β_i and b_i are the corresponding coefficients for $\hat{Y}_{-i}$ and $\hat{M}_{-i}$ respectively, n is the number of lags and e is the error term.

The five specifications considered are characterized by the lag structure of the effects. As can be seen, the contemporaneous correlations of the GNP and money supply in one hand and the price level, on the other, are negligible, whereas when few years lag are introduced, most of the variations in the price level could be linked to the GNP and money supply.

Theoretically β_1, β_2, β_3 and β_4 are negative and b_1, b_2, b_3 and b_4 are positive. In comparing the performance of the fits, the one with 4 period lag structure (regression #4) would be most reasonable in terms of significance of t - ratio and R - square of the fit. This would be the one that would be discussed below.

The lag structures of the fitted equation imply that there is a significant time lag involved in the realization of the responses. As mentioned in chapter one, it should not be surprising, as one may well argue, that frictions in the economy, market imperfections and strong role of the government in the Iranian economy, would lead to such lag structure.

Apart from the lag structure, the coefficients of real GNP growth, all are negative as theoretically expected, except in one case which is however, not statistically

significant (as the t ratio is 0.78).

The coefficients of money supply are all positive as theoretically expected. However, in both cases, no specific pattern in the magnitudes of the coefficients are apparent.

REFERENCES

1. Saudi Arabia and Iran as the two largest oil producers in the Middle East, Venezuela as an OPEC member with longer inflation experience and Iraq as an OPEC member with a moderate size of oil revenues.

2. International Financial Statistics, Vol. XXXII (1979), pp. 232-233, 358-359, 436-437. Changes in the consumer price index have been used.

3. Inflation has been defined as the continuous rise in the general price level.

4. Raouf Kahil, Inflation and Economic Development in Brazil: 1946-1963, (Oxford: Clarendon Press, 1973), p.30.

5. Eugenio Gudin, p.345, for Haberler, in Stability and Progress in the World Economy, Hague, (ed.), (I.E.A. Conference) as cited in John P. Higginbotham, Inflation and Economic Development: A Survey of Monetarist - Structuralist Controversy, (McGill University, M.A. Thesis, 1969), p.28.

6. Robert E. Looney: The Economic Origins of the Iranian Revolution, op.cit., pp.177-178.

7. Irving Fisher, "The Purchasing Power of Money", (New York, MacMillan, 1911), p.161.

8. Ibid, pp.24-25. Although the Quantity Theory of Money is mainly associated with Fisher, very few economists accepted the theory in its original form. The Cambridge economists such as Alfred Marshall and A.C. Pigou, for example, emphasized equally money supply and money demand, whereas the emphasis in the Fisherian version is on changes in the supply of money. The former economists added a very strong emphasis on individual psychological factors such as preferences and expectations, individual's demand for money and utility. See A.C. Pigou, "The Value of Money" The Quarterly Journal of Economics, Vol. 32 (november 1917). For an up-to-date study of theoretical development of the Quantity Theory of Money, see John T. Boorman and Thomas M. Havrilesky, Money Supply, Money Demand, and Macro-economic Models, (Illinois: Northbrook, AHM Publishing Corporation, 1972), pp.162-291.

9. Defined as the sum of demand deposit liability of commercial banks and currency held by the public. M can

be divided, therefore, to M (currency) and M^1 (deposits). The identity, then can be written as $MB=M^1V^1=PT$. For details see Milton Friedman "A Theoretical Framework for Monetary Analysis", Journal of Policital Economy, 78 (1970), p.197. For a distinction between normal and real stock of money, see Friedman, "The Demand for Money: Some Theoretical and Empirical Results", Journal of Political Economy, 67 (August, 1975), p.330.

10. Friedman's major work related to the Quantity Theory include "The Quantity Theory of Money - A Restatement", Studies in the Quantity Theory of Money, edited by Milton Friedman, Chicago: University of Chicago Press, 1956, pp.1-21; "The Demand for Money: Some Theoretical and Empirical Results", op.cit., pp.327-351; The Optimum Quantity of Money and Other Essays, (Chicago: Aldine Publishing Economy, 1969); "A Theoretical Framework for Monetary Analysis" op.cit.; "A Monetary Theory of Nominal Income". Journal of Political Economy, Vol. 79, No. 2 (March/April, 1971), pp.323-337.

11. Friedman, A Theoretical Framework For Monetary Analysis", op.cit., p.203.

12. Friedman, "The Demand for Money; Some Theoretical and Empirical Results", op.cit., p.349.

13. Friedman, The Optimum Quantity of Money and Other Essays", op.cit., p.52.

14. H. Visser "The Quantity of Money", (London, Martin Robertson & Company Ltd., 1974), pp.168-176. See also Harry G. Johnson "Monetary Theory and Policy", The American Economic Review Vol. 52, No. 2 (June 1962), pp.335-384.

15. This condition is particularly true for Iran, due to the government's control of its revenues. As mentioned before, oil revenues are channeled into Iran's economy via government expenditures. The government expenditures, in turn, increase money supply.

16. Los Angeles Times, Oct. 7, 1977, p.1, Col.1. See also Quarterly Economic Review: Iran, various issues.

17. Quarterly Economic Review: Iran, various issues.

18. A study undertaken at the Plan Organization of Iran indicates the correlation between the rate of inflation and oil revenues in Iran, for detail see Plan and Budget Organization of Iran, Survey of Inflation in Iran,

Planometrics Bureau, May 1975, as cited in Homa Motamen, Expenditure of Oil Revenues, (New York: St. Martin's Press, 1979), pp.71-74.

19. Quarterly Economic Review: Iran, III (1978), p.11.

20. Quarterly Economic Review: Iran, I (1974) p.7; The main growth area was expected to be industry where manufacturing would grow at an annual rate of 15.3 percent, electricity at 22.0 percent, water at 12 percent and construction at 13 percent. For more details see Quarterly Economic Review: Iran, I (1973), p.7.

21. The high inflation rates of 1954-59 can partly be explained by the political effects of nationalization on the economy.

22. The simultaneous existence of growth and inflation, particularly for the period covering the Fifth Development Plan, seems to be consistent with the structuralist assumption indicating that economic growth generates inflation.

23. Net imports being total imports minus total export of non-oil products.

24. This can partially be explained by limited absorptive capacity in Iranian ports and transportation.

25. Bank Markazi Iran, Annual Report, as cited in Development Planning Division, ESCAP Secretariat, "The Iranian Economy: Oil and Development in the First Half of the 1970's" Economic Bulletin for Asia and the Pacific, 29 (December 1978), p.37.

26. Financial Times, Dec.20, 1977, p.20, col.1.

27. Chicago Tribune, Oct. 18, 1976, p.4, col.1.

28. New York Times, July 11, 1977, p.35, col.4.

29. Economic Bulletin for Asia and the Pacific, op.cit, p.44.

30. Another reason is the high absenteeism among the workers. For details, see Robert Graham Iran, the Illusion of Power, (London: Croom Helm, 1978), p.120.

31. United States Embassy In Iran, Semi-Annual Economic Trend Reports, (Tehran, May 1977), as cited in Robert Graham, Iran, the Illusion of Power, op.cit., p.120.

32. The main heavy engineering plant in the country.

33. Robert Mantel and Geoffrey Kemp, "U.S. Military Sales to Iran". A staff report to the sub-committee on foreign assistance of the committee on foreign relations, United States Senate, July 1976, p.13.

34. This was common to many OPEC countries which tried to spend oil revenues as quickly as possible.

35. Robert Graham, Iran the Illusion of Power, op.cit. p.96.

36. Bank Markazi Iran, Economic Report and Balance Sheet, (Tehran, Iran: 1977 [2536]), p.94.

37. Robert E. Looney, Economic Origins of the Iranian Revolution, op.cit., p.145.

38. Bank Markazi Iran, Annual Report, 1975, (Tehran: Bank Markazi, 1975), p.69.

39. Robert E. Looney, Economic Origins of the Iranian Revolution, op.cit., p.145. For a discussion of the Fisher Theory as relevant for developing countries see Milton Friedman, "Monetary Policy for a Developing Society", Bank Markazi Iran, Bulletin, (March/April 1971), as cited in R.E. Looney, Economic Origins of the Iranian Revolution, op.cit., p.226.

40. Bank Markazi Iran, Annual Report and Balance Sheet, (Tehran, Iran: 1972 [1351]), pp.21-22.

41. Bank Markazi Iran, "Economic Report and Balance Sheet, op.cit., p.107.

42. Ibid.

43. Theodore H. Moran, Oil Prices and the Future of OPEC: The Political Economy of Tension and Stability in the Organization of Petroleum Exporting Countries, (Washington D.C.: Resources for the Future, Inc., 1978) p.38.

44. Wall Street Journal, Oct. 5, 1976, p.1, col.1.

45. Robert E. Looney, A Development Strategy for Iran Through the 1980's, (New York, Praeger, 1977), pp.108-111.

46. Quarterly Economic Review: Iran, 3 (1976), p.7.

47. Quarterly Economic Review: Iran, 1 (1977), p.9.

48. Quarterly Economic Review: Iran, 4 (1975), p.8.

49. Ibid.

50. Robert Graham, Iran the Illusion of power, op.cit., p.96.

51. U.S. export prices climbed more than 60 percent from 1973 to early 1978: German prices climbed 65 percent and Japanese climbed about 60 percent. For more details see Loring Allen, OPEC Oil, (Cambridge, Mass.: Oelgeschager, Gunn & Hain, 1979), p.153.

52. Stagflation is a situation in which there is staghation and inflation at the same time. Stagflation can be defined as a situation in which there is continuous rises in prices and wages, as well as unemployment and deficient demand. It simply means inflation without growth.

53. The crude-oil price increase was part of the inflation in the west, not its cause. The cause lies in the fact that the decline in production brought no corresponding reduction in spending. For details, see Allen, op.cit., pp.156-159.

54. F. Vakil, "Iran's Basic Macro Economic Problems: A Twenty Year Horizon" Economic Development and Cultural Change, 25 (July, 1977), p.723.

55. Robert Graham, Iran The Illusion of Power, op.cit., p.90.

56. Ibid., p.109.

57. Ibid., p.119.

58. The simultaneous existence of unemployment and shortages of workers can partly be explained by the structuralist's assumption of immobility of labour as a factor of production. Another reason can be the lack of adequate training programs on the part of the government.

59. Robert E. Looney, Economic Origins of the Iranian Revolution, op.cit., pp.156-158.

60. The effects of M and GNP on both consumer price index and GNP deflator were examined. However, the result with wholesale price index was more satisfactory.

CHAPTER V

Other Costs: Infrastructural Bottlenecks

1 - Supply Constraint in Agriculture:

The supply constraint in agriculture can be considered as one of the most important structural bottlenecks of Iran's economy. Agriculture was given a low priority in the first four development plans, and although the sector was targeted to receive up to U.S. $8 billion in the Fifth Plan (1973-77), actual disbursements fell far short of the goal[1].

Over the period 1954-72 as a whole, the agricultural growth rate was less than four percent per annum, at about the same rate as the population (see Table 22), and far below the combined rate of demand increase resulting from the rise in population and income. The agricultural growth rate remained 3.8 percent for the period 1973-77, showing the lowest sectoral growth of the economy, compared with the rate of growth of 18 percent for industries and mines, and 16.4 percent for services. The value added by agriculture increased at an average rate of four percent a year during 1960-1970 and 2.1 percent a year during 1970-1975 in constant prices[2].

Food accounted for about 41.2 percent of the average urban family's expenditures during 1965-74 (45 percent in Brazil)[3], and families in rural areas, with lower incomes spent 61.1 percent of their income on food during this

TABLE (22)

Iran: Index Number Of Total Agricultural Production (1952 - 1977) (1952 - 1956 = 100)

Year	Index Number	Percentage Changes
1952	90	-
1953	97	7.8
1954	99	2.0
1955	102	3.0
1956	112	9.8
1957	118	5.4
1958	120	1.7
1959	128	6.7
1960	125	-4.0
1961	134	7.2
1962	132	-1.5
1963	141	7.0
1964	139	-1.5
1965	148	6.5
1966	153	3.4
1967	153	0.0
1968	168	10.0
1969	175	4.2
1970	179	2.0
1971	177	-1.0
1972	198	12.0
1973	203	2.7
1974	212	4.3
1975	214	0.8
1976	230	7.4
1977	239	3.8

Note: (Different base years have been converted to base 1952-1956 = 100).

Sources: United Nations Food and Agricultural Organization, (Italy, Rome), Vol.20, 1966, Page 28; Vol. 25, 1971, Page 30; Vol. 31, 1977, Page 76.

decade[4]. Around 80 percent of all farm families are engaged in traditional agricultural activities at a subsistence or semi-subsistence level. On average, they work approximately four hectares, but then the amount of irrigation is insufficient. According to the data on land use in late 1977[5], of the country's 165 million hectares, about 50 million were arable in the sense that if water were available, the soil could be cultivated. Of this arable land, only about 20 million hectares had ever been cultivated. In 1974, about 3.8 million hectares were under irrigation and an estimated 4.8 million hectares were under dry farming.

Livestock and livestock products are extremely important to both the national and the rural economies of Iran. The livelihood of more than three million people depends upon livestock, which contributes approximately 33 percent of the total value added by the agricultural sector. Meat and dairy products account for 80 percent of the total value of livestock products[6]. Total animal heads produced in rural areas increased slightly from 75.1 million in 1960 to 77.6 million in 1974[7], an overall increase of less than four percent for the entire period. Stagnation in rural areas led to a situation whereby overall agricultural productivity grew very little and the output of the small farms sector grew hardly at all. Per person value added grew very slowly - 1.9 percent per annum - during 1959-72[8].

The agricultural sector, once the largest single contributor to the Iranian economy, has thus remained largely unchanged while other sectors showed tremendous improvements. One of the most striking structural changes in Iran's economy, therefore, is the sharp decline in the relative contribution of agriculture and the increase of the relative contribution of industry and mining. As can be seen in Table (23), the share of agriculture in non-oil GNP declined constantly from 30.8 percent in 1963 to 24.3 percent in 1970 and then to 14.6 percent in 1976, while those of industry-mining and services increased from 20.4 percent and 42.9 percent in 1963 to 31.9 percent and 49.9 percent in 1976 respectively.

Employment in agriculture has dropped from 56.3 percent to less than 35 percent of the total labour force during 1956 - 76, while those of industry and services has increased from 20.1 percent and 23.6 percent to 35 percent and 30 percent, respectively, for the same period[9]. However the bulk of agriculture in Iran still remains highly labour-intensive.

Most crops in Iran are still harvested and fertilized by hand. The rapid and widespread increase in the use of tractors in Iran in the late 1960's was not matched by a similar development in mechanized farming technology, and almost no attempts were made to implement the use of machinery to the fullest extent at the farm level[10].

One of the major factors which has held back the

TABLE (23)

Iran: Gross National Products and Its Main Components (1963 - 76)

	Billion Rials					Percentage Share			
						GNP	Non-oil GNP		
Year	Agri-cultural	Oil	Industry + Mining	Services	GNP	Oil	Agri-cultural	Industry + Mining	Service
1963	98.4	40.6	65.3	137.0	360.3	11.3	30.8	20.4	42.9
1970	160.6	140.7	168.1	314.7	801.9	17.5	24.3	25.4	47.6
1976	430.1	1741.4	939.4	1468.7	4684.0	37.1	14.6	31.9	49.9

Sources: The Statistical Yearbook of Iran, Year 1977, pages 658-659;
The Statistical Yearbook of Iran, Year 1972, pages 680-681.

expansion of agricultural productions has been the weakness of existing agricultural cooperatives resulting from the shortages of both funds and trained experienced manpower. For the years 1963-72, 87 percent of all loans made by major agricultural credit institutions to farmers were short-term loans. The supply of agricultural credit in Iran has been inadequate and has acted as a constraint on agricultural development. There are also many institutional and bureaucratic inadequacies, unnecessary procedures, and detailed security requirements, with accompanying paper-work and delays, all of which reduced the effectiveness of these specialized agencies as development credit institutions[11]. These factors, among other things, contributed in creating a situation in which investment in this sector was low, causing commercial farmers to feel insecure about their future.

Among the problems on the marketing level is that there are usually several middlemen through whose hands agricultural products pass before reaching the consumer. There are, as well, wide seasonal price fluctuations. The marketing system has been geared to serve only a few large urban centers. Since most commodities are not graded for marketing, Iranian consumers are charged substantially different prices for the same commodity. Primitive handling and storage facilities result in high losses. The long distance between producers and market results in high transport costs which contributes to high per-unit production

costs; this low productivity brings about high prices of a number of agricultural commodities. The producer's share of the retail price can range from as high as 70 percent in the case of wheat, to as low as 20 percent in the case of vegetables[12].

Aside from the shortage of water supply and skilled manpower at all levels in agricultural sectors, which are the two most limiting factors, the other shortcomings can be summarized as follows: poor and rapidly deteriorating range lands; difficulties and/or ineffectiveness in the implementation of price support policies for crops and livestock; inadequate supply of agricultural inputs; lack of adequate infrastructure; lack of private entrepreneurs to invest in agriculture; insufficient coordination among the ministries and other autonomous agencies responsible for the various aspects of agricultural development.

Iran, like most LDC's, has concentrated on land reform. Before the land reform program of 1962, 60 percent of Iranian farmers were tenants, while frequently absentee landlords with large holdings - who were only one percent of the rural population - owned about 56 percent of the total cultivable area[13]. About one-third of the total agricultural land held by these large proprietors was controlled by 0.2 percent of the agricultural population. Small holders and peasant owners were estimated to have had between 10 and 12 percent of the total cultivated land.

Land ownership was characterized by OMDEH-MALEKI and KORDEH-MALEKI[14]. Most of the land was divided into large estates (OMDEH-MALEKI) owned by absentee landlords who would value land mostly for the social prestige and hence were satisfied with low yields. One landlord in Khorasan Province in 1962, for example, was reported to own 136 villages and four landlords owned most of the villages in Kordestan Province[15]. According to one estimate, 37 families alone owned 19,000 villages, i.e. around 38 percent of the total, whilst another group of medium landlords, owning 1 - 5 villages each, owned 7,000 villages, or 14 percent of the total[16].

Among these types of land ownership were those of "WAQF" properties, in which profits or rents were assigned for charitable uses of a public or private character; "KALISAT-I-DULATI" were retained by the government and "AMLAKI-SALTANATI" were the personal estate of the Shah. The remainder of the land consisted of small farmers which were cultivated by peasant-owned properties - KORDEH MALEKI - who had neither the capital nor the know-how to be efficient.

Farmers who required credit had to turn to the owners of the land on which they worked, or to money lenders or merchants with generally high interest rates. This resulted in a situation whereby many farmers remained almost permanently in debt. The main goals of the land reforms, therefore, were to destroy this type of feudalism, to improve

the farmer's standard of living, and to accelerate the growth rate of output of agricultural products.

The land reform program consisted of three phases, through which some 2.3 million farm families, holding about eight million hectares, have been directly affected. It limited the large land holdings to one village, or its equivalent (400 hectares of irrigated land). The farmers who received land had to join a cooperative and repay the full price of the land over a period of 15 years. The second phase, which began in 1965, lowered the maximum holding to 30-50 hectares. It was officially completed in 1971. Taken together, phases one to three seem to have given land to about 1,638,000 families, yet this figure is under half of the total number of rural families in Iran[17].

However, there were several problems which were not effectively dealt with through the land reform program. The main problem was that it did nothing to help those who had farmed undersized plots of land, those who had no land at all, and those who had worked the land which was legally retained. As D. Craig writes; "land titles changed hands, the KADKHODA[18] and the landlord were excised from village affairs and the new institution were established. However, in many ways, the changes came full circle and several of the pre-reform problems remained unsolved ten years after the reform"[19].

Land reform program did not end the relative stagnation

of agriculture; investment by rich landlords stopped, and the program did nothing to increase investment by the newly established small land owners. As the Qanats, for example, which tap a water bearing stratum, usually in the mountains, are relatively expensive to construct, water supplies have traditionally tended to belong to large land owners. After land reform, their use was extremely limited because of financial incapability on the part of new landowners, and insecurity and lack of motivation on the part of old ones.

Government subsidies for farms were not sufficient and the agricultural credit institution were not able to meet all their financial needs.

After the land reform program, Iran - a country with a brief tradition of failure in organizing agricultural cooperatives - suddenly had to create hundreds of new cooperatives to assume responsibility for many functions formerly provided by landlords[20]. However, even in early 1970's, the agricultural cooperative bank had some 160 branches in Iran, compared to several thousand for commercial banks - hence the phenomenon that as one moves away from the cities, the reliance on non-bank credit increases[21].

Furthermore, during the period agricultural credit institutions were responsible for 31 percent of the total amount of loans obtained by farmers; 20 percent were supplied by commercial banks and the remainder was obtained from private money lenders, middlemen, traders and relatives.

Generally, these latter loans carried very high rates of interest (25-50 percent), including those from relatives, with the advantage of ready availability, compared to a shortage of institutional credit. The farming sector, consitituted about one-quarter of the gross domestic product, yet farm loans to the sector represent about one-tenth of all institutional credit to the private sectors[22].

The government's attention then became focused on the interests of urban consumers, rather than on the support of agricultural development programs. There was a widening gap between the growth in food demand the growth of domestic food production. During 1959-75, the demand for food is estimated to have grown at about 9.5 percent annually, while the production of food increased only three to four percent[23]. By the mid-1970's demand for agricultural products was rising by 12.5 percent per annum and was expected to reach 14 percent over the following decade as incomes rise over a wide spectrum[24]. This led to a very rapid growth in agricultural imports, from RLS. 27 billion in 1973 to RLS. 47 billion in 1976[25], despite which food supplies in urban centers have been insufficient. This was reflected by prolonged shortages of certain staple foods and by strong upward pressure on wholesale and retail prices.

Rapid growth of overall demand, especially demand for food which had low income and expenditure elasticity despite its 'necessity', and the relative stagnation in agricultural

output led to a situation in which the food price index showed a sharp upward trend. Lack of supply response to high prices was largely due to technical factors which could not be overcome without investment. Lack of credit for investment was in turn due to poor rural institutions and improper coordination in the provision of such facilities.

During the period 1959-72, the annual compound rate of increase in food price index was 3.4 percent compared with 13.0 percent for the period 1973-77[26]. Among the food items on the price indexes in 1977, vegetables and fruits, with an average increase of 24.8 percent, and meat with an increase of 21.6 percent were very significant forces behind the increase in the food price index. Bread and rice are the major food staples of most Iranian people. During 1973-77, the price of this group of foods increased 15.5 percent per year on the average. Rice had a price increase of 47.5 percent in 1976, compared with that in 1975[27].

These increases in prices produced little supply response mostly for reasons analysed previously (lack of irrigation, inefficient land reforms, bureaucratic structure, etc.). It has been argued that farmers are not sufficiently motivated in LDC's because of low price of agricultural products; Iran proves, however, that the problem is not so simple. High prices might be a necessary condition for an increase in supply but not a sufficient one. Institutional rigidities have to be reckoned with. The price of eggs, for

example, increased 21.6 percent in 1977, compared with that of the previous year. Nevertheless, there was a continuous shortage of this product. These were absolute price increases; relative prices also changed somewhat because supply elasticities were different for different products. On the whole, food prices increased because of the sudden injection of oil revenues on the one hand and the relatively slow increase in agricultural production on the other. The increased incomes were spent, among other things, on food.

2 - Migration and Urbanization

One of the major structural changes in Iran during the past 20 years has been the migration of labour away from agricultural rural areas toward industrial urban centers. Table 24 shows the division of Iran's population between rural and urban areas.

In 1963, 36.2 percent of the total population lived in urban areas with the remaining 63.8 percent in rural areas, whereas in 1976, these rates were 46.8 percent and 53.2 percent, respectively (see Table 24). The urban population grew at a compound rate of 4.7 per annum on the average during 1963-76, while that of the rural population was 1.8 percent during the same period. These growth rates can be compared with the country's overall compound population growth rate which was 2.8 percent during the same period, indicating several factors. First, the urban population was increasing at a faster rate, compared with the total growth

TABLE (24)

Iran: Shares of Rural and Urban Population (1963 - 1976) Percent

	Urban	Rural
1963	36.2	63.8
1964	36.8	63.2
1965	37.5	62.5
1966	38.0	62.0
1967	38.6	61.4
1968	39.4	60.6
1969	40.0	60.0
1970	40.7	59.3
1971	41.3	58.7
1972	42.0	58.0
1973	42.6	57.4
1974	43.1	56.9
1975	44.0	56.0
1976	46.8	53.2

Source: The Statistical Yearbook of Iran, 1972, p.36; The Plan and Budget Organization of Iran, The Statistical Center, The Selected Statistics, 1976., p.6.

rate of population. Second, the urban population increased at a rate more than twice the rate of rural population. Finally, the difference of 2.9 percentage points (between urban and rural population growth rates) is mostly due to high rates of rural-urban migration. While rural migration comprised 44 percent of the increase in population of urban areas between 1956 and 1966, the migrants accounted for as much as 50 percent of the increase in the urban population during 1966-77 period, as a result the degree of urbanization[28] rose sharply from 31.4 percent in 1956 to 46.9 percent in 1976[29].

It is important to note, however, that urban migration (movement from one large city to another) also played an important role in population increases of some large cities. A study done in 1969 in the city of Shiraz found that 42 percent of the population of Shiraz were migrants. Approximately three-fourth of the migrants were natives of other cities in Iran, coming mainly from Tehran, Isfahan and Abadan[30]. This can partly be explained by the fact that Shiraz, by and large, is a cultural, medical and intellectual center for the southern part of Iran.

The number of residents of the 14 largest cities of Iran increased from 3.5 million in 1956 to 5.5 million in 1966, and reached 8.8 million in 1976 (see Table 25). In 1976, about one-half of the urban population, or more than one-quarter of the total population of Iran, lived in the

TABLE (25)

Iran: Distribution of Population In Cities (1956 - 1976) Million

City	1956	1976	Increase (Million)
Tehran	1.5	4.5	3.0
Other*	2.0	4.3	2.3
Total	3.5	8.8	5.3

* Other 13 largest cities with population of more than 100,000.

Sources: The Statistical Yearbook of Iran, Year 1972, p.38; The Statistical Yearbook of Iran, Year 1977, p.35.

country's 14 largest cities. Tehran's population increased from 1.5 million to 4.5 million residents during 1956-76, and became the main target of immigrants.

The number of cities with 5,000 inhabitants or more increased from 265 in 1966 to 366 in 1976. More than half of the urban population lives in Tehran, and the fastest growing towns are those with less than 10,000 inhabitants. By some estimates, the movement of rural workers since 1973 has averaged yearly about eight percent of the rural population[31].

Two main reasons for this migration have been the concentration of large scale manufacturing industries in the urban centers, and the relative stagnation of agricultural areas. Industrial activities - defined as manufacturing and mining, construction and electric power - accounted for 31.9 percent of the non-oil GNP in 1976, compared with 20.4 percent in 1963 (see Table 23). The liberal policy of industrial credit and changes in composition of industrial production are major factors behind the Iranian industrial boom. The output of durable consumer goods increased faster than that of non-durable goods, and this, made possible by credit facilities provided for investors, led to the concentration of new industries in major towns as well as to migration to these areas.

Another important reason for this migration is the existence of better facilities[32] and services in urban areas; according to a report presented to the government in 1974, of the 10,000 doctors in Iran, 5,000 are in Tehran, more than 3,000 are in other cities and only 1,500 are in rural areas. In Tehran, there was one doctor for every 878 inhabitants, while for the rest of the country this figure was 5,011, and in some remote provinces such as Elam, it was as high as 12,570[33]. Furthermore, there are 40,000 hospital beds in the country and all of them are in Tehran or in other large cities. As a result, personnel and facilities are concentrated in Tehran, while in practice 18 million Iranians have no access to any of the services offered by modern advanced medicine[34]. A 1973 study[35] about the health care of a provincial Iranian town (Maragheh) found that consultation of private physicians varied directly with social class, while dependence on public health varied indirectly with class. While the wealthy and the civil servants could afford to visit private physicians, the poor of the town relied heavily on the public clinics, which they knew provided inadequate care. The average consultation in public clinics lasted less than two minutes.

Other major factors contributing to migration are: the widening gap in rural income between rural areas and urban centers; a growing agricultural mechanization resulting in agricultural unemployment; certain displacement effects of

the land reform; higher productivity per workers in industry[36] compared with the over-populated agricultural sector which led to higher wages[37] and better working conditions in cities; the lower cost of certain staple items in some major cities under public subsidies and the bad harvest in 1960, which accelerated the stagnation in agricultural products[38].

Labour, therefore, moved from the countryside to the cities, but since this was not 'surplus' labour, nor was it replaced by the introduction of new techniques or capital, the relative share of agricultural output declined rapidly[39]. The government tried to create enough new employment opportunities to absorb not only the growth of active population but also the new migrants from rural to urban centers. It allocated substantial parts of already increasing Gross Capital Formation to services, to absorb excess labour force in the production of services. For instance, the share of service sector in total Gross Fixed Capital Formation increased from 10.2 percent (Rials 29.2 billion) in 1972 to 11.6 percent (Rials 163.1 billion) in 1974, having an average annual rate of increase of 92 percent during this period[40]. In the mid-1970's, about 300,000 new workers were entering the labour force each year, out of which, the industrial sector was at most able to absorb 70,000, leaving the rest to the already expanding service sector[41].

The migration caused many social and economic problems. Due to the increasing demand for housing, for example, the prices of construction materials and construction services increased dramatically, and this category made a major contribution to the overall increase in wholesale price indexes. As Table 26 shows, the annual average percentage changes in the construction materials index was 17.8 percent during period 1972-77, while that of wages of construction workers was 31.5 percent during the same period. However, salaries did not keep pace with the cost of living in the cities and even well paid civil servants and relatively prosperous middle class, were paying 50 to 60 percent of their salaries for housing[42]; there were tremendous increases in rental for homes and apartments in urban areas. For example, the rental index went up at the rate of 22.7 percent in Tehran in 1977[43].

Rapid urbanization has exacerbated problems of transportation and communication. The extent of the problem can be illustrated with the example of price of potatoes which were like anything else increasing. At the same time potatoes were rotting in certain rural areas because of lack of transportation facilities. The case of potatoes was by no means exceptional. An estimated 20 to 30 percent of Iran's agricultural production was lost to spoilage for want of refrigerated transportation and cold storage facilities[44]. At the same time, prices of transportation and communication

TABLE (26)

Iran: Percentage Changes In Construction Indexes (1968 - 1977)

	A: Wages of Construction Workers			B: Price Index of Construction Materials
	General	Skilled	Unskilled	General
1968	11.5	8.8	16.8	0
1969	14.3	11.2	19.6	22.4
1970	3.8	2.8	4.8	0.1
1971	2.7	3.7	1.8	-0.4
1972	17.5	17.5	17.3	7.4
1973	21.6	26.1	16.8	21.7
1974	28.9	26.3	31.8	28.4
1975	47.1	44.7	50.8	5.2
1976	39.4	42.1	35.5	25.5
1977	34.4	34.8	33.7	18.8

Sources: Bank Markazi Iran, Annual Report and Balance Sheet 1972, p.233;

Bank Markazi Iran, Economic Report and Balance Sheet 1977, p.212.

were up by 31.9 percent in 1977. Obviously, the main factors behind these increasing rates can be found in the shortage of public utilities and housing, traffic tie-ups, and overcrowded public facilities.

With high and increasing per-capita income in urban centers, the demand for most items, especially food grew. Farmers and agricultural producers in rural areas suddenly became consumers in urban centers, and this added to the constraint and high inflationary pressures already existing in these urban centers. The Iranian government, faced with these contraints, concentrated on its social and welfare programs. The rural areas, therefore were neglected to a great extent and this led to further stagnation of rural population, bigger gap between rural and urban standards of living, and therefore, more migration and higher inflation rates.

3 - Changes in Income Distribution

The first in-depth analysis of the country's income distribution was undertaken as part of the ILO comprehensive strategy mission in 1971-72[45]. The study found an extremely concentrated distribution of income for the country as a whole. The initial studies[46] suggests that the country's income distribution is determined to a greater extent by the type of employment than by geographic location, with the former playing a larger role in the urban area, while the

latter were more important in rural sections.

Firouz Vakil[47] suggests that the probable patterns of spending of oil revenues have been in favour of urban areas, as opposed to the rural areas. The urban - rural gap[48] has widened substantially from the early 1960's to the mid-1970's. Since the massive increases in oil revenues were accompanied by high and increasing rates of inflation, then it can be suggested that inflation did not reduce this gap, and in fact increased it to some extent. Furthermore, while urban and rural private expenditures were estimated to be almost even in 1959-60, they are believed to have changed to a roughly 75-25 ratio per capita of total private consumption in 1975-76[49]. According to an Iranian official[50], average urban income was 5.5 times higher than rural income in 1977.

Another way to analyse the redistribution effect of oil money is to investigate, if there is a positive correlation between inflation and private investment; that is to see if the high rates of inflation caused a transfer of resources from consumption sector to the saving sector which, in turn would be transferred to investment sector. Private consumption expenditure increased at an average annual rate of 25.2 percent during 1973-77, whereas this rate was 11.3 percent for the period 1963-72 (See Table 11). The share of private sector, from the gross fixed capital formation was 44 percent in 1977, which had an annual average rate of growth of 30 percent during 1974-77[51]. Based on the above

information, both private consumption and private investment were on the rise, particularly after 1973. Oil revenues, therefore, provided sufficient financial resources for the Iranian economy, such that the private sector enjoyed both high rates of consumption and investment. In addition, the private investment was mostly allocated in more speculative form of activities, with a short gestation period as opposed to investment in heavy industry, and public utility. For example 36 percent of total investment in construction was provided by private sector (Rials 424 billion) in 1977[52], which was mainly spent on semi-luxury residential buildings for those in the higher income class.

High rates of growth and inflation resulting from oil revenue seems to worsen the income distribution of Iran. Fifty-four percent of the households are comprised of the "poor" with annual expenditures below $800, and 42 percent are defined as "middle class" with annual expenditures of $800 - $3,150. Only four percent are "rich", with income of $3,150 and over in 1971 wages[53]. About 60 percent of the rich and middle-class families live in urban areas, and the remainder in rural areas. In contrast, about 75 percent of the poor live in rural areas and only 25 percent in urban centers[54].

There are some indications that the social stratification actually increased due to oil revenue explosion: the top 20 percent of Iranians increased their

share of national income from an estimated 57 percent in 1972 to nearly 63 percent in 1975, while the income of the middle 40 percent of Iranians declined from 31 percent to 26 percent during the same period[55].

Furthermore, in 1969, the top 10 percent of population enjoyed 32.5 percent of the total private consumption, while the bottom 30 percent received only 10 percent. The middle 60 percent of the population obtained 58 percent of the total private consumption[56]. Another study, four years later[57], reported some changes in the above figures. The top ten percent of the population consumed 40 percent, the lowest 30 percent accounted for only eight percent and the remaining 60 percent received 52 percent of the total private consumption expenditure[58]. The comparison of the results of these two studies indicates that during the period 1968-69 to 1973-74, the poor and middle classes became relatively poorer[59], while the top 10 percent of the population (rich group) became relatively richer, having increasing disposable income.

The increase in urban income and consumption has not been uniform in all urban centers, and there are strong regional imbalances in Iran. Per capita income in Tehran is 45 percent higher than in the large provincial cities and 70 percent higher than in small towns[60]. At the same time that most farmers were living at a subsistance level in a one-or-two room house, which they often had to share with their animals, drinking polluted water and suffering from

widespread diseases, there was a high demand for houses, food, services and luxury goods in urban areas, particularly in Tehran. The import of non-agricultural consumer goods increased from Rials 10 billion in 1971 to Rials 40 billion in 1975, a growth rate of more than 60 percent per year during 1971-75[61]. The high income group was becoming accustomed to a western lifestyle and standard of living.

Iran's tax system is imperfect in the sense that public administration has a limited efficiency in collecting direct taxes: Iran's revenue from the external sector (oil revenue) has accounted for 73 percent of government budget on average, during the period 1973-77. This allowed authorities to keep the share of taxes in the government budget to about 22 percent per annum during the same period. In fact the share of total tax revenues in the budget decreased from 34 percent in 1973, to 19 percent in 1977 (see Table 8). The share of taxes on individual income and taxes on wealth, in turn, were 11.4 percent and 3.5 percent of total tax receipts by the government, respectively, during 1974-77[62], indicating that direct tax and the tax system in general did not play an important role in the redistribution of income[63].

Indirect taxes, on the contrary, in Iran have always provided greater revenues than have direct taxes. The former include charges on trade, customs duties, in the commercial profit tax and the import registration fees. The large proportion of indirect taxes led to a situation in which the

direct impact on prices of indirect taxes was shifted to the consumer and therefore the distribution of income did not improve and the government was unable to benefit from potentially higher revenues as a result of regressive redistribution of income.

A distribution of income which permitted a relatively small prosperous group to freely spend their substantially raised incomes tended to foster spending on a narrow range of luxury goods, which were often imported. The upper-middle class emulated this 'unproductive' consumption pattern, with its high import propensity and its low propensity to spend on either productive investment, which would eventually have relieved supply constraints, or on goods which the poor could produce which would have transferred purchasing power 'downwards' via the multiplier.

Due to these demonstration effects, the economic aspiration of Iranians rose. The village peasants who in 1960's were willing to be employed in as casual labourers in city houses were no longer attracted by the prospects of a home and a basic wages in the urban areas and hence the shortage of household labourers in the urban centers led to imported labour from Far Eastern countries such as Philippines[64].

Labourers, who experienced rising prices and observed the consumption pattern of other Iranians and foreigners - also through widespread exhibition of films, television,

radio programs, etc. - believed that they, too, should share in the new riches of the country. In fact, if less had been spent on the military[65], perhaps the labouring class, too, could have shared in this new wealth.

Sharp increases in oil revenues and rapid rises in imports combined with the inefficient tax system, led to a situation where people were being conditioned to expect the good life as their right, rather than as something which comes as a result of industrial development and workplace discipline[66].

The oil-induced economic growth, among other things, encouraged the western type of consumption[67], which was, to a large extent, accommodated by imports. Obviously, in the process of growth, the rich increased its share of oil revenues and became relatively richer, while the poor and middle class became relatively poorer.

REFERENCES

1. Much of the money budgeted for agricultural development went to construction of dams and barrages. See Samuel Libermal, "Development and Population Growth in Tehran", Population and Development Review, 5(June 1979), p.302. See also Abdol-Majid Majidi, "Iran 1980-85: Problems and Challenges of Development" The World Today, 33(January 1977), pp.15-18; J. Price Grittinger, "Planning and Agricultural Policy in Iran - Program Effects and Indirect Effects', Economic Development and Cultural Change, 16(October 1967), pp.107-117.

2. Richard F. Nyrop ed., Iran A Country Study, (Washington, D.C.: The American University, 1978), p.248.

3. Baer Werner, "The Inflationary Controversy in Latin America: A Survey", Latin American Research Review, 2 (Winter, 1967), p.8.

4. Plan and Budget Organization, Iranian Statistical Centre, The Statistical Yearbook of Iran, 1977, pp.360-362; 1972, p.642.

5. Nyrop, Richard F., ed., Iran A Country Study, (Washington D.C., The American University, 1978), p.329.

6. Oddvar Aresvick, The Agricultural Development of Iran, (new York: Praeger, 1976), p.80.

7. The Statistical Yearbook of Iran, 1977. op.cit., p.350; The Statistical Yearbook of Iran, 1972, op.cit., p.330.

8. Aresvick, op.cit., p.54.

9. Jahangir Amuzegar, Iran An Economic Profile, (Washington D.C., The Middle East Institute, 1977), p.18

10. Aresvick, op.cit., p.240.

11. Ibid, pp. 173-174.

12. Ibid, p.215.

13. K.S. McLachlan: "Land Reform In Iran", in W.B. Fisher (ed.), Cambridge History of Iran, Vol. I(Cambridge University Press, 1968), pp. 686-687.

14. Similar to the Latifundio and minifundio system in Latin America. For more details see M.W. Mueller, "Structural Inflation and Mexican Experience", Yale Economic Essays, V (Spring, 1965), p.147.

15. Iran A Country Study, op.cit., p.336.

16. Fred Halliday, op.cit., p.107. See also: Syrus Salmanzadeh, "Agricultural Change And Rural Society In Southern Iran", (Cambridge: Menas Press Ltd. 1980), pp.59-62.

17. Ibid., p.112.

18. The major political and social figure in Iranian villages before land reform.

19. Daniel Craig "The Impact of Land Reform on an Iranian Village", Middle East Journal, 32 (Spring 1978), p.153. See also: Eric J. Hooglund "Rural Socioeconomic Organization in Transition: The Case of Iran's Bonehs", in Michael E. Bonine and Nikki R: Keddie, Modern Iran The Dialectics of Continuity and Change, (Albany: State University of New York Press, 1981), pp. 191-207.

20. For details see George Baldwin, Planning and Development In Iran, (Baltimore: Johns Hopkins University Press, 1967), p.95.

21. Robert E. Looney, Income Distribution Policies and Economic Growth in Semi-Industrialized Countries: A Comparative Study Of Iran, Mexico, Brazil and South Korea, (New York: Praeger, 1975), p.36.

22. Ibid., p.32.

23. Aresvick, op.cit., p.207.

24. Financial Times, 28July 1975, as cited in Halliday, op.cit., p.127.

25. Statistical Yearbook of Iran, 1977, op.cit., p.232. Iran was projected, by the Government Officials, to be a food importer over the longer term. For details see Abdol-Majim Majidi, op.cit., p.271.

26. Bank Markazi Iran, Department of Economic Statistics, Section for Price Indexes for Goods and Services. The Report for 1977, Table No. 11, p.35. For the relation between agricultural production and food prices, see Henry Bruton, "Notes on Development in Iran", Economic Development and Cultural Change, 9(July 1961), p.631.

27. Ibid., Table No. 16. p.40.

28. The percentage of total population residing in urban areas.

29. Thomas Walton, "Economic Development and Revolutionary Upheavals in Iran", Cambridge Journal of Economics, 4(September, 1980), p.282.

30. Ali A. Paydarfar, "Differential Life-Styles Between Migrants and Nonmigrants: A Case Study of the City of Shiraz, Iran", Demography, (August 1974), p.516.

31. "Survey of Iran", The Economist, August 28, 1976, p.40ff.

32. Including Education. The existing Educational services in rural areas do not educate an individual to become a leader in village society; education usually results in his migration to the rapidly growing urban centers. See John Connell, "Economic Change in an Iranian Village", Middle East Journal, 28(Summer 1974), p.314.

33. T. Walton, Cambridge Journal of Economics, op.cit., p.283.

34. Imperial Organization of Social Services, "Report of the Commission on the Study of Health and Medical Problems", Second Edition, 1975, p.1, as cited in Halliday, op.cit., p.120.

35. Byron J. Good "The Transformation of Health Care in Modern Iranian History", in Michael E. Bonine and Nikki R. Keddie, Modern Iran, op.cit., p.82.

36. The introduction of a profit sharing scheme aimed to improve the financial incentives of the industrial workplace to higher levels of productivity. It however, contributed in the migration. See William H. Bartsch, "The Industrial Labor Force of Iran: Problems of Recruitment, Training and Productivity". Middle East Journal, 25(Winter, 1971), p.27.

37. Higher productivity gets translated into higher wages via combination of government policy and the several discontinued, yet effective labour movements, demanding higher wages, better working conditions and formation of independent trade unions. These movements manifested themselves by strikes in various factories, the latest has been in 1973 - oil boom year. These resulted in a situation whereby, either demands were to be met by quick official intervention with the management, or the

movements were put down. For details see Halliday, op.cit., pp.198-208.

38. Aresvick, op.cit., p.58.

39. G. Maynard, "Inflation and Growth: Some Lessons to be Drawn from Latin American Experience", Oxford Economic Papers, 13 (June 1961), p.194.

40. The Statistical Yearbook of Iran, 1977, op.cit., p.667.

41. Iran a Country Study, op.cit., p.81.

42. John D. Stempel, Inside the Iranian Revolution, (Bloomington: Indiana University Press, 1981), p.81.

43. Bank Markazi Iran, The Report For 1977, op.cit., Table No. 20. p.44.

44. "Central Cold Storage Complex, Largest in Middle East", Kayhan International, (December 9, 1976), p.8, as cited in Norriss S. Hetherington, "Industrialization and Revolution in Iran: Forced Progress or Unmet Expectation?", Middle East Journal, 36 (Summer 1982), p.371.

45. Harry Oshima, "Income Distribution", Mission Working Papers No. II, Employment and Income Policies In Iran (Geneva: World Employment Programme, International Labor Office, 1973), as cited in Robert E. Looney, Economic Origins of the Iranian Revolution, op.cit., p.248.

46. See also: International Bank for Reconstruction and Development. The Economic Development of Iran, Vol. I, the Mann Report, Report No. 378a - IRN, (June 1974); H. Ghassemi and Martin Massoudi, "Food Budgeting for Adequate Nutrition in Tehran, Iran". Journal of the American Dietitic Association, (1971), pp.219-24.

47. Firouz Vakil, "Iran's Basic Macroeconomic Problems: A Twenty Year Horizon", Economic Development and Cultural Change, 25 (July 1977), pp. 723-24.

48. The Urban-Rural Gap: ratio of private urban consumption expenditures per capita to private rural consumption expenditures per capita.

49. Jahangir Amuzegar, Iran: An Economic Profile, op.cit., p.22. An econometric model for Iran forecasted an improvement in the average standard of living of both

rural and urban areas: per capita urban consumption increases from $1,169 in 1975 to $1,759 in 1985, while per capita rural consumption increases from $174 to $301 during the same period. For details, see Ahmad Shahshahani and J. Malcolm Dowling, Jr., "An Economic Model Forecast of Iran, 1975 - 1985", Journal of Energy and Development, 2 (Autumn, 1976), p.160.

50. Mehdi Samii, the President of Agricultural Development Bank. See Wall Street Journal, Nov. 4, 1977, p.1, Col.1.

51. Bank Markazi Iran, Economic Report and Balance Sheet, op.cit., p.23.

52. Ibid.

53. Amuzegar, op.cit., p.255n.

54. Ibid, pp.255-56.

55. Joseph Kraft, "Letters from Iran", The New Yorker, (December 18, 1978), pp.134-68, as cited in Hetherington, op.cit., p.365.

56. Ibid, p.258n.

57. Although the basic reason for comparing data for studies 1969 and 1973 is their availability, however, the year 1969 can be considered as one of the last years of relative stable period of 1960's whereas 1973 can be regarded as starting point in an unstable period of mid-1970's.

58. Avervick, op.cit., p.29.

59. The notion of deteriorating poverty in Iran between 1971-76 had been challenged by Looney who did not find any evidence as such. For details see Robert E. Looney. Economic Origins of the Iranian Revolution, op.cit., p.252. For research supporting the deterioration, see M.A.H. Katouzian, The Political Economy of Modern Iran; Despotism and Pseudo-Modernism, 1962-1979, (New York: New York University Press 1981), pp.269-272; Walton, Cambridge Journal of Economics, op.cit., p.277.

60. Robert E. Looney, The Economic Development of Iran - A Recent Survey With Projection to 1981, (New York: Praeger, 1973), p.32.

61. The Statistical Yearbook of Iran, 1977, op.cit., p.573.

62. Ibid., p.648.

63. In fact the government had a tendency to do without tax income and did not try seriously to use taxation, either as a means for fairer income distribution or to prepare the citizens for the day when oil starts to run out. See Nikki R. Keddie, "Oil, Economic Policy and Social Conflict in Iran", Race & Class, 21 (Summer 1979), p.19.

64. Homa Motamen "Expenditure of Oil Revenue: An Optimal Control Approach with Application to the Irania Economy op.cit., pp.65-66.

65. Iran has been the largest importer of military equipments in Middle East; $8.1 billion in 1976-77, compared with $1.02 billion in 1971-72. For details see Robert E. Looney, Iran at the End of the Century: A Hegelian Forecast, (Lexington, Mass.: D.C. Heath, 1977), p.20.

66. Wall Street Journal, June 20, 1977, p.14, Col.4.

67. This is based on the concept that developed countries are in the stage of mass-consumption and have already passed the stage in which higher relative production and less relative consumption is required, whereas the less developed countries are in the latter stage.

VI CONCLUSION

Oil revenues play a vital role in Iran's economy. Particularly after 1973, almost every section of the economy was affected by oil revenue increases. The ambitious Fourth Development Plan (1973-78) was financed and formulated by oil money. One cannot over-emphasize the positive effects of oil revenue increases in this respect. Iran attempted to grow too quickly, to do too much in too short a time and since the country was able to sell her valuable petroleum resources at a premium, the desire to grow translated itself into substantial liquidity injections into the economy. Government expenditures increased sharply without corresponding increases in pressures on direct income taxes. This, accompanied with increases in money supply and credit expansion, which in turn, led to booming economic activities and rising of the standard of living in Iran.

On the demand side, national and per capita income grew rapidly, which meant higher purchasing power and higher overall demand. On the supply side, however, despite substantial increases in imports, the economy was unable to provide increased output to match the higher demand. The higher demand pressures, therefore, were not successfully translated into higher production. The lag of supply increases, relative to the increasing demand, created

inflationary pressures which, in turn, caused a new and high rate of inflation after 1973.

In addition to the financing of its economic plans, Iran spent the oil money on imports. High import volumes have been effective, to a large extent, in lessening inflationary pressures. However, the effect would have been more, had they been better allocated. In addition, imports created several problems of their own, among which higher imports relative to the country's absorptive capacity, the increasing weight of intermediate goods in total import bills, and imported inflation can be mentioned.

The expansion of oil industry was also accompanied by relative backwardness of agricultural sector. This sector suffered from several structural bottlenecks and hence its relative growth of production had a diminishing trend. The relative neglect of agriculture, combined with accelerating creation of job opportunities in urban areas - due to implementation of the economic development plan - led to rapid migration from rural areas to urban centers, which among other things, intensified the already existing bottlenecks and increased inflationary pressures.

The process of oil-induced development in Iran created other shortcomings as well. The distribution of income worsened and the uncoordinated urban development resulted in persistant shortages in infrastructure, particularly electric power. There also was high demand for, and hence accompanied

shortage of skilled manpower.

Iran's adjustment mechanism to sudden and substantial oil revenues, therefore, can be summarized as ambitious development plan and imports (including military). The by-products of the process of adjustment were inflation, relative backwardness in agriculture, internal migration and worsening of distribution of income.

BIBLIOGRAPHY

Books

Allen, Loring. OPEC Oil, (Cambridge, Mass.: Oelgeschager, Gunn & Hain, 1979).

Amirsadeghi, Hassein, Twentieth Century Iran (New York: Holmes & Meier Publishers Inc., 1977)

Amuzegar, Jahangir and Fekrat, M.A. Iran: Economic Development Under Dualistic Conditions, (Chicago: University of Chicago Press, 1971).

Amuzegar, Jahangir , Iran: An Economic Profile, (Washington, D.C.: The Middle East Institute, 1977).

Aresvick, Oddvar , The Agricultural Development of Iran, (New York: Praeger, 1976).

Askari, Hossein and Cummings, John Thomas. Middle East Economies in the 1970's, A Comparative Approach, (New York: Praeger, 1976).

Baer, Werner and Kerstenetzky, Isaac, eds. Inflation and Growth in Latin America, (Homewood, Illinois: Richard D. Irwin, Inc., 1964).

Baldwin, George . Planning and Development in Iran, (Baltimore: Johns Hopkins University Press, 1967).

Ben-Shahai, Haim . Oil: Prices and Capital, (Lexington, Mass.: Lexington Books, D.C. Heath, 1976).

Bharier, Julian . Economic Development in Iran: 1900-1970, (London: Oxford University Press, 1971).

Bhaltacharya, Anindya K. The Myth of Petropower, (Lexington, Mass.: D.C. Heath, 1977).

Bonine, Michael E. and Keddie, Nikki R. Modern Iran: The Dialectics of Continuity and Change, (Albany: State University of New York Press, 1981).

Boorman, John T., and Havrilesky, T. Money Supply, Money Demand, and Macroeconomic Models, (Illinois: Northbrook, AHM Publishing Corporation, 1972), pp.162-291.

Edel, Matthew. Food Supply and Inflation in Latin America, (New York: Fredrick A. Praeger, 1969).

Fisher, Irving. The Purchasing Power of Money , (New York, Macmillan, 1911).

Friedman, Milton, ed. Studies in Quantity Theory of Money, (Chicago: University of Chicago Press, 1956).

_____. The Optimum Quantity of Money and Other Essays, (Chicago: Aldine Publishing Co., 1969).

Graham, Robert. Iran, The Illusion of Power, (London: Croomhelm, 1978).

Halliday, Fred. Iran: Dictatorship and Development, (England: Penguin Books, 1979).

Harberger, A.C. 'The Dynamics of Inflation in Chile' in Measurement in Economics: Studies in Mathematical Economics and Econometrics, edited by Carl F. Christ, et.al., (Stanford: Stanford University Press, 1963).

Kahil, Raouf. Inflation and Economic Development in Brazil, (Oxford: Clarendon Press, 1973).

Katouzian, M.A.H. The Political Economy of Modern Iran: Despotism and Pseudo-Modernism, 1926-1979, (New York: New York University Press, 1981).

Looney, Robert E. Economic Origins of the Iranian Revolution, (New York: Pergamon, 1982).

_____. Income Distribution Policies and Economic Growth in Semi-industrialized Countries; A Comparative Study of Iran, Mexico, Brazil, and South Korea, (New York: Praeger, 1975).

_____. Iran at the End of the Century: A Hegelian Forecast, (Lexington, Mass.: D.C. Heath, 1977).

_____. The Economic Development of Iran - A Recent Survey with Projections to 1981, (New York: Praeger, 1973).

_____. A Development Strategy for Iran Through the 1980's, (New York: Praeger, 1977).

Mikdashi, Zuhayr. The International Policies of National Resources, (Ithaca and London: Cornell University Press, 1976).

Moran, Theodore, H. Oil Prices and the Future of OPEC: The Political Economy of Tension and Stability in the Organization of Petroleum Exporting Countries, (Washington, D.C.: Resource for the Future, Inc., 1978).

Motamen, Homa. Expenditure of Oil Revenue: An Optimal Control Approach with Application to the Iranian Economy, (New York: St. Martin's Press, 1979).

Salmanzadeh, Syrus . Agricultural Change and Rural Society in Southern Iran, (Cambridge: Menas Press Ltd., 1980).

Södersten, Bo . International Economics, (London: Macmillan and Co., Ltd., 1971).

Stempel, John D. Inside the Iranian Revolution, (Bloomington: Indiana University Press, 1981).

Visser, H. The Quantity of Money, (London: Marten-Robertson & Company Ltd., 1974).

Articles

Askari, Hossein et.al. 'Efficiency of LDC Trading Patterns: The Case of Iran', American Economic Review, Vol. 69 (May 1979), pp.191-195.

Baer, Werner . 'The Inflation Controversy in Latin America: A Survey', Latin American Research Review, II (Winter, 1967), pp.3-25.

Bartsch, William H. 'The Industrial Labour Force of Iran: Problems of Recruitment, Training and Productivity', Middle East Journal, 25 (Winter 1971), pp.15-30.

Brown Alan . 'A Note on the Consumption Function in Iran', Oxford Bulletin of Economics and Statistics, 40 (February 1978), pp.1-8.

Bryton, Henry . 'Notes on Development in Iran', Economic Development and Cultural Change, 9 (July 1961), pp.625-40.

Carey, J.P.C. 'Iran and the Control of its Oil Resources', Political Science Quarterly, 89 (1974), pp.147-74.

Connel, John . 'Economic Change in an Iranian Village', Middle East Journal, 28 (Summer 1974), pp.309-314.

Craig, Daniel . 'The Impact of Land Reform on an Iranian Village', Middle East Journal, 32 (Spring 1978), pp.141-54.

Dunn, Robert M. Jr. 'Exchange Rates, Payments Adjustment, and OPEC: Why Oil Deficit Persists', Essays in International Finance, 137 (December 1979), pp.1-22.

Friedman, Milton . 'The Demand for Money: Some Theoretical and Empirical Results' Journal of Political Economy, 67 (August 1959), pp.327-351.

_____ . 'A Theoretical Framework for Monetary Analysis', Journal of Political Economy, 78 (March/April 1970), pp.193-238.

_____ . 'A Monetary Theory of Nominal Income', Journal of Political Economy, 79 (March/April 1971), pp.323-337.

_____ . 'The Quantity Theory of Money - A Restatement', Studies in the Quantity Theory of Money, edited by Milton Friedman, (Chicago: University of Chicago Press, 1956), pp.1-21.

Ghassemi, H. and Massoudi, Martin . 'Food Budgeting for Adequate Nutrition in Tehran, Iran', Journal of the American Dietetic Association, (1971), pp.219-24.

Articles

Grittinger, J. Price. 'Planning and Agricultural Policy in Iran - Program Effects and Indirect Effects', Economic Development and Cultural Change, 16 (October 1967), pp.107-117.

Hammed, Kamel A. and Bennett, Margaret N. 'Iran's Future Economy', Middle East Journal, 29 (Autumn 1975), pp.418-32.

Hetherington, Norriss S. 'Industrialization and Revolution in Iran: Forced Progress or Unmet Expectation?', Middle East Journal, 36 (Summer 1982), pp.362-373.

Iyoha, Milton . 'Inflation and Openness in Less Developed Economies: A Cross Country Analysis', Economic Development and Cultural Change, 21 (October 1973), pp.31-38.

Johnson, Harry G. 'Monetary Theory and Policy', The American Economic Review, 52 (June 1962), pp.335-384.

Katouzian, M.A. 'Oil Versus Agriculture: A Case of Dual Resource Depletion in Iran' Journal of Peasant Studies, 5 (April 1978), pp.347-369.

Keddie Nikki, R. 'Oil, Economic Policy and Social Conflict in Iran', Race and Class, 19 (July 1977), pp.267-274.

Kirkpatrick, C.H. and Nixson, F.I. 'Inflation and 'Openness' in Less Developed Economies; A Cross Country Analysis: Comment', Economic Development and Cultural Change, 26 (October 1977), pp.147-152.

Levy, Walter J. 'The Years that Locust Hath Eaten: Oil Policy and OPEC Development Prospects', Foreign Affairs, 57 (Winter 1978-79), pp.287-305.

Liberman, Samuel S. 'Prospects for Development and Population Growth in Iran', Population and Development Review, 5 (June 1979), pp.293-317.

Majidi, Abdol-Majid . 'Iran 1980-85: Problems and Challenges of Development', The World Today, 33 (July 1977), pp.267-274.

Maynard, G. 'Inflation and Growth: Some Lessons to be Drawn from Latin American Experience', Oxford Economic Papers, 13 (June 1961), pp.184-202.

McLachlan, K.S. 'Land Reform in Iran', in Fisher W.B., (ed.), Cambridge History of Iran, I (Cambridge University Press, 1968), pp.684-713.

Articles

Metzler, Lloyd A. 'The Transfer Problem Reconsidered', Journal of Political Economy, 50 (1942), pp.397-414.

Mikesell, R.F. 'The Contribution of Petroleum and Mineral Resources to Economic Development', in Foreign Investment in the Petroleum and Mineral Industries, edited by R.F. Mikesell, et.al., (Baltimore: Johns Hopkins University Press, 1971).

Mueller, M.W. 'Structural Inflation and Mexican Experience', Yale Economic Essays, V (Spring 1965), pp.145-194.

Newman, Stephani . 'Security, Military Expenditures and Socio-Economic Development: Reflection on Iran', Orbis, 22 (Fall 1978), pp.569-594.

Paydarfar, Ali A. 'Differential Life Styles Between Migrants and Non-Migrants: A Case Study of the City of Shiraz, Iran', Demography, 11 (August 1974), pp.509-520.

Pigou, A.C. 'The Value of Money', The Quarterly Journal of Economics, 32 (November, 1917).

Schulz, Ann T. 'Iran's New Industrial State', Current History, (January 1977), pp.15-18.

Seers, Dudley . 'Normal Growth and Distortions, Some Techniques of Structural Analysis', Oxford Economic Paper, 16 (1964), pp.78-103.

Shahshahani, Ahmad and Dowling J. Malcolm Jr. 'An Econometric Model' Forecast of Iran, 1975-1985', Journal of Energy and Development, 2 (Autumn 1976), pp.148-162.

Vakil, F. 'Iran's Basic Macroeconomic Problems: A Twenty Year Horizon', Economic Development and Cultural Change, 25 (July 1977), pp.713-729.

Walton, Thomas. 'Economic Development and Revolutionary Upheavals', Cambridge Journal of Economics, 4 (September 1980), pp.271-292.

Weinbaum, M.G. 'Agricultural Policy and Development Policies in Iran', Middle East Journal, 31 (Autumn 1977), pp.434-450.

General Periodicals

Chicago Tribune, October 18, 1976, p.4, col. 1.

Economist, Various issues.

Economic Bulletin for Asia and the Pacific, 29 (December 1979). pp.37-49.

Financial Times, Various Issues.

International Financial Statistics, Various issues.

Los Angeles Times, October 7, 1977, p.1, col.1.

Middle East Journal, Various issues.

New York Times, July 11, 1977, p.35, col.4.

Quarterly Economic Review: Iran, (London) Various issues.

Wall Street Journal, Various issues.

Documents

Bank Markazi Iran, Annual Report and Balance Sheet, (Tehran, Iran: 1972 (1351)).

_____, Economic Report and Balance Sheet, (Tehran, Iran: 1977 (2356)).

_____, Annual Report, 1975, (Tehran, Bank Markazi, 1975).

_____, Department of Economic Statistics, Section or Price Indexes for Goods and Services, The Report on Price Indexes for Goods and Services in Urban Areas of Iran, (Tehran, 1977 (2356)).

Bank Melli Iran, Annual Report and Balance Sheet, (Bank Markazi Iran), Various issues.

Iran Oil Journal, (NIOC publication) Various issues.

Plan and Budget Organization, Iranian Statistical Centre, The Statistical Yearbook of Iran, Various issues.

Iran Chamber of Commerce, Industries and Mines, Iran Chamber of Commerce, Industries and Mines Directory, (Tehran, Iran, 1975).

Area Handbook for Iran, (Washington, D.C.: The American University, 1971).

Byrop, Richard F., ed., Iran a Country Study, (Washington, D.C.: The American University, 1978).

International Labour Office, Employment and Income Policies for Iran, (Geneva, 1973).

Unpublished Material

Higginbottom, John P. "Inflation and Economic Development:" A Survey of the Monetarists - Structuralists Controversy (McGill University, M.A. Thesis, 1969).