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THE POLITICAL ECONOMY OF INCOME DISTRIBUTION AND
REDISTRIBUTION POLICIES OF IRAN

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AND REDISTRIBUTION POLICIES OF IRAN

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THE POLITICAL ECONOMY OF INCOME DISTRIBUTION

AND REDISTRIBUTION POLICIES OF IRAN

A DISSERTATION

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TO
THE HEROIC PEOPLES OF IRAN, ESPECIALLY
THE WORKERS AND PEASANTS

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THE POLITICAL ECONOMY OF INCOME DISTRIBUTION
AND REDISTRIBUTION POLICIES OF IRAN

CHAPTER I

INTRODUCTION

The coexistence of economic growth with income maldistribution in undeveloped countries has been a controversial subject of many debates. A recent cross-sectional study of income distribution within Middle Eastern countries revealed that most of these countries have suffered from maldistribution of income regardless of the country's endowment of natural resources and degree of economic growth.¹ As a case study, this investigation will examine the anatomy of income distribution and redistribution policies of Iran as a Middle Eastern oil exporting country.

The distribution of income in Iran will be explored in two stages. In the first stage, the degree of income inequality within rural and urban areas, between rural and urban areas, and among different regions will be investigated. This will be done by applying statistical methods to data gathered for the years 1969-79. In the second stage, the macro and micro levels of the functional distribution theory of

¹Elias H. Tuma, "The Rich and The Poor in The Middle East," The Middle East Journal, no. 34 (Autumn 1980), pp. 413-453.

income will be examined. This approach will be used to investigate the patterns of income shares for factors of production, i.e., capital and labor, for both national and household income.

The Iranian government's implementation of various strategies for income redistribution, such as land reform, public expenditures, and taxation policies, will be investigated. Major deficiencies in government policies concerning income distribution will be emphasized.

Importance of the Study

Since the distribution of income in a country can contribute to its political stability, it can be expected that this study on income distribution in Iran will significantly assist Iranian economic development planners in their decision-making processes concerning a reduction in income inequality.

Specifically, an examination of Iranian income distribution and various redistributive policies employed by the government during the period prior to the revolution of 1978-79 will bring to light those dynamic economic factors that have been responsible not only for income inequality but also for the failure of the government's economic policies. Additionally, this study will provide policy guidelines, which may be followed by a post-revolutionary government in Iran.

Purpose of the Study

In the years preceding the Iranian revolution of 1978-79, the economy of that country, aided by massive oil revenues, experienced the highest economic growth rate in its contemporary history, an average of

15 percent at constant price during 1966-76.² However, Iran's spectacular economic growth rate has been characterized by some economists³ as self-destructive during the two decades preceding 1980. This self-destruction is shown by the deterioration of the economic welfare of the majority of Iran's poor classes as opposed to the economic well-being of the minority upper classes.

As mentioned before, a major objective of this study is the consideration of Iran's structure of income distribution and the Iranian government's income redistribution policies. The study will focus mainly on the following:

1. It will present a theoretical discussion concerning the linkage between economic development and income distribution, the association between the income inequality and capital formation in the course of economic development and the relationships between social welfare and income inequality with special reference to the case of Iran.

2. It will explore theoretical frameworks and different measurements of income inequality. Income inequality indices for the period immediately preceding the Iranian Revolution will be derived. In particular, Gini coefficients for rural areas (1969-77) and urban areas (1969-79) will be estimated by application of the new methods of the estimation of the Lorenz curve (Kakwani Model). Additionally, through

²The calculation of this growth rate is based on the national income data from various issues of the Annual Report and Balance Sheet of the Central Bank of Iran for 1970s.

³M. Parvin and A. N. Zamani, "Political Economy of Growth and Destruction: A Statistical Interpretation of the Iranian Case," Iranian Studies, no. 12 (Winter/Spring 1979), pp. 43-50.

the use of different decomposition methods, overall income inequality will be partitioned into urban, rural, and between urban and rural income variations (1970-77). By this method, the relative contributors to total income inequality will be evaluated. The spatial inequality among the regions of Iran will be singled out (cross-sectional study). Consequently, the sources of income inequality and their trends will be specified.

3. It will provide a discussion of class structure and the relationships between class structure and income distribution with special reference to the class configuration in modern Iran. Moreover, at the macro level, it will examine a theoretical framework concerning (a) the linkage between economic development and factor income shares, and (b) the connection between factor income shares and the overall Gini coefficient. Applying the functional distribution theory of income which states the national income is divided between the capitalist class (i.e., profit, rent) and the laboring class (i.e., wages and salaries), it will determine trends of the relative shares of the classes in the national income of Iran (1966-76). At the micro level, the income inequality index in urban areas is decomposed into variations in income derived from labor incomes (i.e., wages) and property incomes (i.e., profit and rent) across the different income household brackets (1973-79). Then, the working-class movement and its welfare conditions during the pre-revolutionary period will be discussed.

4. It will examine income redistribution by investigating basic economic reforms, such as the agrarian reforms which began in the early

1960s. The socio-economic structure of Iranian rural areas before and during the land reforms and their impact on land redistribution and on the welfare of the rural people will be explained. Did government intervention in rural areas through agrarian reforms result in egalitarian land redistribution (equity aspect)? How did agrarian reforms affect agricultural output (efficiency aspect)?

5. It will present the components of Iranian taxation and its trends. Furthermore, the distributional impacts of overall taxation on various income brackets under different assumptions of tax burden shares among economic agents will be considered.

The main financial source of government revenue has been oil exports. The government has relied heavily upon oil revenues to achieve social, political, and economic goals. Government expenditures on public goods and direct investments through various economic development plans have significantly affected various sectors of the economy (e.g., the agricultural sector as opposed to the industrial sector), different regions of Iran, and different social programs, notably education. Consequently, public expenditure strategies can significantly reshape income distribution in Iran.

Methodology

Econometric and statistical methods will be used whenever these methods are essential for meaningful interpretations throughout this study. In particular, the OLS (Ordinary Least Squares) method will be used intensively for the estimation of the Lorenz curve. In the Kakwani model,

the coordinates of each point on the Lorenz curve are identified by the distance of the point (p) from the egalitarian line and from the origin, i.e., $p(H, \Pi)$. Then the equation of the Lorenz curve is expressed in terms of (Π, H) as $H=f(\Pi)$. Based on the coefficients of the Lorenz curve, indices of income inequality and their variances will be estimated.

Four methods of decomposition will be used in this study: the Gini decomposition, the Theil decomposition, the analysis of variance and the Atkinson index. The Gini decomposition procedure is adapted to investigate overall income inequality due to variation in factor incomes, i.e., property income and wages. The analysis of variance, in particular, is applied to express the relative importance of variation of income within areas in comparison to variations between areas. For instance total variations in income will be subdivided into variations within the rural areas and urban areas, as well as between rural areas and urban areas.

The Theil decomposition and the Atkinson inequality procedures will also be applied to decompose total variations in income into variations across and within rural areas and urban areas. The Atkinson model is based on the concept of the equally distributed equivalent level of income. As Atkinson has stated, "this means that if the level of income per head were equally distributed, it would give the same level of social welfare as the actual income distribution."⁴ The Theil inequality index is derived from the concept of entropy in information theory, or as

⁴Anthony B. Atkinson, "On the Measurement of Inequality," Journal of Economic Theory (1979):250.

Theil has defined it, "expected information of the message which transforms population shares in income shares."⁵

Concepts and Sources of Data

Several conceptual issues surface in analysis of the data relevant to patterns of income distribution of classes. The measurement of household income should be comprehensive in the sense that both cash and in kind income should be included. Additionally, it may be argued that surveys of household income should be concerned mainly with the average lifetime income of households rather than the present income, since current income is subject to random fluctuations.⁶ Moreover, there should be some adjustments in computing the income of households with respect to their size and composition.

There is also debate among economist as to whether household income itself or household consumption expenditure is the better welfare index of households in measuring the income inequality. Economists who advocate using household consumption expenditure data point out that from a welfare perspective it would be useful to go beyond household income to measure all the goods and services currently consumed by households. This argument becomes more meaningful in relation to the agrarian economies of the less developed countries where some production and consumption take place within the household without market

⁵ Henri Theil, Statistical Decomposition Analysis (New York: American Elsevier Publishing Company, 1972), p. 99.

⁶ Uma Datta Roy Choudhury, "Income Distribution and Economic Development in India Since 1950-51," The India Economic Journal 25 (1977): 143-147.

transactions. From this point of view, the measurement of the consumption of goods and services rather than the measurement of household income is more accurate. It may be argued that the consumption behavior of households is more stable and has less random transitory components over time than income.

In addition to these conceptual issues, the method of collecting data itself is also very important. One way of collecting data on income distribution by income brackets is through sample surveys. In Iran these sample surveys are conducted by two institutions, the Central Bank of Iran (CBI) and the Statistical Center of Iran (SCI). The sample surveys by the CBI are restricted to urban areas and the sample surveys by the SCI have separate parts for urban and rural areas. The primary concern of surveys by the SCI has been household consumption expenditure rather than income. The statistical data collected by the CBI are more complete and detailed, including both consumption expenditure and the sources of income of the households.

There is inconsistency between the CBI and the SCI in their techniques of conducting sample surveys. For instance, all of the data in the sample surveys by SCI are monthly and all the data of the CBI are yearly. In comparing the data of the two surveys, it is necessary to make some adjustments in the data which are collected by the SCI.

Statistical data are available only for the years immediately preceding the Iranian revolution, the period 1969-79. The data for this study have been obtained from the following sources:

- a. Urban Household Budget Surveys, Statistical Center of Iran.

- b. Rural Household Budget Surveys, Statistical Center of Iran.
- c. Urban Household Budget Surveys, Central Bank of Iran.
- d. Annual Report and Balance Sheet of Central Bank of Iran,
Central Bank of Iran.
- e. Various publications of the CBI and SCI.
- f. Intensive investigation of various literature on Iranian
economy.

The available statistical data concern the consumption expenditures of rural and urban households. In most of the statistical procedures concerning income inequality, consumption expenditure is accepted as a reliable index of approximate household income. As in most undeveloped countries, the reliability of data for Iran may be low as a consequence of deficiencies in the data collection methods employed.

CHAPTER II

THE RELATIONSHIP BETWEEN INCOME DISTRIBUTION AND ECONOMIC DEVELOPMENT

The very large differences in income and wealth will become increasingly abrasive. When the country was growing rapidly, it eased the pressure. But in a period of more limited expectations, which is here already, there is greater social friction related directly or indirectly to income and wealth inequalities.⁷

Martin L. Weitzman

In recent years, equalization of income distribution has been a major goal of economic development, overshadowing the importance of the economic growth in less developed countries. An increase in per capita income cannot, in itself, represent the degree of economic development unless it is accompanied by improvement of income distribution.

As G. M. Meier points out:

Instead of seeking development as an end, it must be viewed as a means, as an instrumental process for overcoming persistent poverty, absorbing the unemployed, and diminishing inequality.⁸

In this context, a brief review of recent studies of the relationship between economic development and income distribution is relevant. The pattern of income distribution at different stages of development and

⁷"Capitalism: Is It Working?" Time, April 21, 1980, p. 43.

⁸Gerald M. Meier. Leading Issues in Economic Development, 3rd edition (New York: Oxford University Press, 1976), p. 11.

the various economic and socio-political factors that have influenced income distribution in less developed countries are explored. Then, the question of whether income inequality at the early stages of development is a necessary precondition to the well-being of the poorer segment of the population in the future is analyzed in relation to the Iranian economy. In the final section of this chapter, the linkage between income inequality and social welfare is applied to Iranian data.

Before exploring these issues, a familiarity with the socio-economic structure of underdeveloped countries is essential.

Dual economy. A major cause of income inequality in many less developed countries is the "dual" nature of their economies.⁹ That is, the domestic economy is divided into two sectors: a traditional sector characterized by self-sufficiency, sluggish agricultural productivity, and a subsistence standard of living and an advanced industrial sector characterized by modern technology, high productivity, and highly monetarized trade. Not surprisingly, a high wage differential exists between the two sectors. Per capita income in the advanced sector is several times that of the agricultural sector. This disparity contributes to the overall income inequality in the economy.

Moreover, this inequality may become greater over time since the expanding industrial sector is the main beneficiary of economic growth in some less developed countries, while the traditional agricultural

⁹Irma Adelman and Cynthia Taft Morris. Economic Growth and Social Equity in Developing Countries (Stanford: Stanford University Press, 1973), pp. 17-21.

sector gains little, if anything, from the growth.¹⁰

This dualistic growth is completely different from the balanced growth in which a proportionate investment and advanced technology in different sectors of the economy, i.e., agricultural and industrial sectors, increase the productivity and consequently the real income in each sector simultaneously.¹¹ In this growth process, each sector, through its consumption, stimulates the growth of other sectors. Hence, all sectors benefit from growth. In consequence, this pattern of growth is different from dualistic growth in which high investment and productivity are normally restricted to the industrial sector, while the agricultural sector is sluggish and without substantial investment.

Theories Concerning the Relationship Between Economic Development and Income Distribution

Among the first economists to investigate long-run changes in income inequality during the development process is Kuznets.¹² According to his hypothesis, in the course of economic development, three different phases are distinguishable. Phase one, the transition from the pre-industrial stage to the premature industrial and urbanization stage, is characterized by widening income inequality. This increasing inequality is attributed to several factors. Initially, industrialization and

¹⁰ Clarence Zunekas, Jr. Economic Development (New York: St. Martin's Press, 1979), pp. 8-10.

¹¹ Gerald M. Meier. Leading Issues in Economic Development, 2nd edition (New York: Oxford University Press, 1970), pp. 362-366.

¹² Simon Kuznets. "Economic Growth and Income Inequality," American Economic Review (March 1955):1-28.

urbanization lead to the concentration of population in urban areas. Since income inequality is normally greater in urban than in rural areas, and the per capita income of urban areas is higher than that of rural areas because of productivity differentials, urbanization is one of the main factors of income inequality. Furthermore, the accumulation of savings in the upper income groups as a source for investment is necessary for economic development. The continued concentration of income and wealth in the upper income brackets where the marginal propensity to save is high, accentuates income inequality.

Phase two is a period of stabilization of income inequality during the process of industrialization and urbanization. Phase three is a period of maturation of industrialization and one during which there is a narrowing of income inequality. Kuznets emphasizes such economic forces as demographic and technological changes as well as salary incomes in the upper income brackets as tending to erode income inequality during development. Expanding urbanization ultimately improves the income share of lower income groups through the creation of job opportunities.

As shown in Fig. 1, the relationship between economic development and income inequality can be depicted graphically as an inverted U, with income inequality increasing at the beginning of economic development and decreasing during the last stage. Kuznets' hypothesis is based on the experiences of the currently advanced Western countries during their early stages of development.

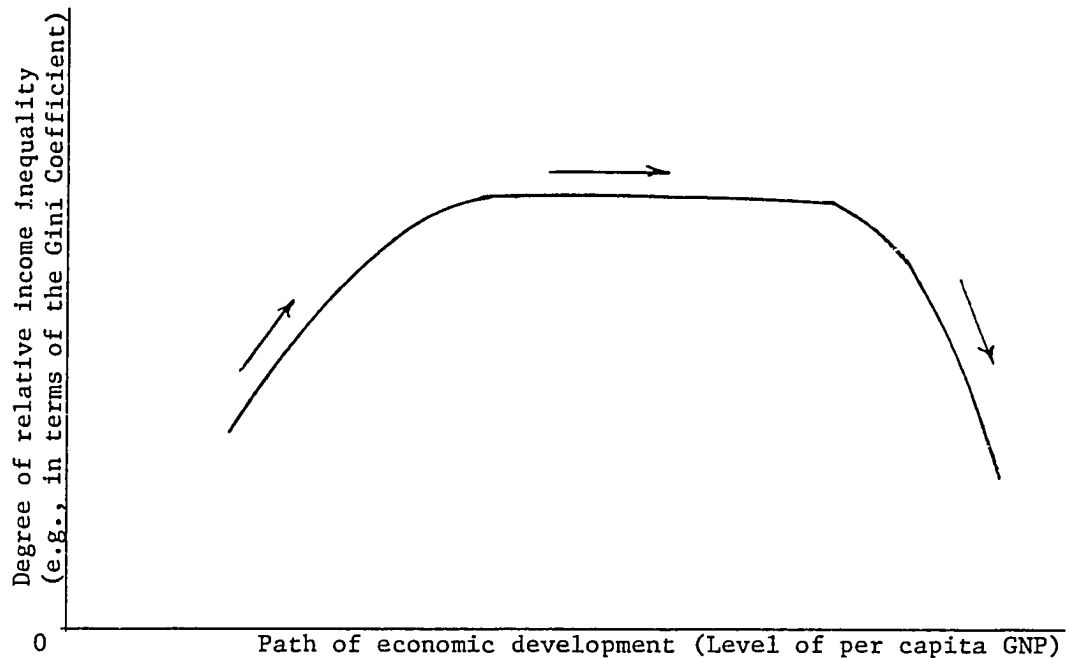


Fig. 1 - The relationship between income inequality and economic development

Following Kuznets, several other empirical cross-sectional studies on income distribution were made. The studies of Adelman and Morris focus on 43 less developed countries.¹³ They utilize 74 economic, social, and political indicators to explain variation in the income shares of the population deciles. According to their empirical results, in a less developed country which achieves economic growth under a sharply dualistic economy, the lowest income class will not benefit from growth, and its relative and absolute share of income will

¹³Adelman and Morris, Economic Growth.

decrease. Dualistic structure indicators are significant in explaining variations of income of the poorest 60 percent of the population, and the amount of the natural resource endowment has a positive influence on the concentration of income in the upper income class. However, investment by the public sector has a negative impact on the income share of this class. The share of the middle income class is positively related to the degree of development of the country. The most important factors which diminish the degree of income inequality are improvements in human resources, especially training, the total government investment package, and, to some extent, the strength of labor unions.

In Adelman and Morris's dynamic interpretation of the cross-sectional survey, the relationship between the income share of the poorest 60 percent of the population and economic growth is U-shaped. This finding implies that during the initial stage of economic development, the income share of the lowest class is relatively higher, but during the process of the development, it deteriorates while the income share of the middle and upper income classes increases. At the highest level of economic development, the income share of the lowest income class again increases. Therefore, the dynamics of economic development appear to operate temporarily to the disadvantage of the poor.

M. S. Ahluwalia's findings, based on a cross-sectional study of 60 countries, 14 developed and 40 less developed, use a multi-variate regression procedure to estimate the relationship between the income shares of population deciles and economic variables.¹⁴ In addition to

¹⁴Motek S. Ahluwalia, "Inequality, Poverty and Development," Journal of Development Economics 5 (1976):307-342.

per capita income as an explanatory variable, he uses other variables relevant to education and human resources and such structural shift variables as the production structures, i.e., the share of the agricultural sector in total Gross Domestic Product (GDP), and the proportion of rural society to the total population.

According to Ahluwalia's basic results, the structural shift variables, such as increased urbanization and industrialization, improve the income share of the lowest income brackets and reduce the income share of the upper class in the course of development. The economic reasons for these changes can be explained by the fact that increased urbanization and industrialization produce employment for migrants from rural areas, thus reducing rural population pressure. In addition, increased human capital, to a large extent, diminishes income inequality. The relationship between population growth and income inequality is positive.

According to Ahluwalia's interpretation of cross-sectional data, the relationship between the income share of the lower income group (40 or 60 percent of the total population) and the path of economic development (level of per capita GNP) has a U shape. In the early process of economic development, the income share of the lower income bracket falls; in the final stage of development, its income share rises.

The general conclusion of these studies is that most underdeveloped countries which experience dualistic development also experience widening income inequality in the course of development. The middle and high income classes benefit from economic growth while the

economic situation of the poor segment of the population worsens. Only at the highest stage of development will the lowest income class obtain a greater share of total national income, if economic growth is accompanied by expansion in human capital, public investment, and urbanization. The role of natural resource endowment in the concentration of income within the upper income class is critical in the process of development. Graphically, the relationship between the path of economic development and income inequality forms an inverted U.

Most conclusions concerning the linkage between economic development and income inequality, however, are based on cross-sectional surveys of both developed and less developed countries. These studies have some shortcomings. The intent of these studies is to generalize static conclusions concerning the dynamic development process and patterns of income distribution for less developed countries and to apply the conclusions to countries with quite different socio-economic and political environments.

According to Kuznets, it is fallacious to think that the less developed countries can reproduce the same path of income distribution that currently advanced countries have experienced.¹⁵ The political and economic environments of less developed countries are much different from those of advanced countries. Income inequality has not lessened in underdeveloped countries in recent decades. The cumulative effects of the concentration of past savings, the lack of political and social

¹⁵ Kuznets, "Economic Growth".

policies which would strengthen the position of lower income groups, a continually increasing rate of population growth, and eventually the dislocating effects during the transition from the pre-industrial period to the industrial period are very strong factors that cause the economic position of the low income groups to deteriorate.

Even Kuznets' hypothesis concerning the trade-off between economic growth (efficiency) and income equality has been under increasing criticism. A recent study by Lester C. Thurow on the cross-sectional data of the advanced Western countries during 1960-1976 has concluded that there is no strong and conclusive relationship between efficiency (economic growth, i.e., real per capita GDP growth) and the equality of income distribution.¹⁶

An Economic Justification for Income Inequality During
The Initial Stage of Economic Development

It is often argued that in the early stage of development, income inequality is a precondition for the concentration of savings which serve as the potential investment source among the upper income class in less developed countries. Over time, investments increase national income. As a result, the poor as well as the rich benefit from economic development. The initial temporary lower income of the poor generates a higher income and higher share of the national income later. This economic justification for income inequality has been challenged by

¹⁶Lester C. Thurow, "Equality and Efficiency," The Welfare State in Crises (Paris: Organization for Economic Co-operation and Development, 1981), pp. 137-140.

Kuznets. As Kuznets explains:

There is a danger in simple analogies; in arguing that because an unequal income distribution in Western Europe in the past led to accumulation of saving and financing of basic capital formation, the preservation or accumulation of present income inequalities in the underdeveloped countries is necessary to secure the same results.¹⁷

According to Kuznets, it is a fallacy that a completely free market, without any government intervention in the form of progressive taxation and other redistributational policies, can accelerate economic growth and income equality. The economic environment of the present less developed countries is completely different from that of the present modern countries. Even postulating completely free market system in the less developed countries, the following outcome, as stated by Kuznets, is anticipated:

Under present conditions the results may be quite the opposite, withdrawal of accumulated assets to relatively safe channels, either by flight abroad or into real estate and the inability of governments to serve as basic agents in the kind of capital formation that is indispensable to economic growth.¹⁸

Examination of the Iranian economy supports partially Kuznets' criticism. The economy of Iran has been heavily dependent on oil exports for its survival. During 1971-1973, because of the shortage of oil in world markets, the price per barrel of oil rose from \$1.79 per barrel in 1971 to \$11 per barrel in 1973.¹⁹ Iranian oil production was roughly 6 million

¹⁷Kuznets, "Economic Growth," pp. 25-26.

¹⁸Ibid., p. 26.

¹⁹A. O. Udovitch, The Middle East: Oil, Conflict and Hope, (The Third World Corporation, 1976), p. 479.

barrels per day during the years before the revolution.²⁰ In 1977, the petrodollars derived from oil and gas exports amounted to 23 billion annually.²¹

These facts indicate that financial conditions in oil-exporting countries like Iran are completely different from those in the other less developed countries which suffer from the lack of foreign exchange reserves. For OPEC countries like Iran, at least in the short run, revenue derived from oil exports can be regarded as an important financial source for investment in the country's economy. Therefore, emphasis on income inequality as a strategy for stimulating capital formation is much less relevant.

Economic bottlenecks such as the shortage of skilled manpower during 1973-1978 (Iran was short by 0.7 million laborers) and lack of management training have hindered the Iranian economy from absorbing the petrodollars and from rapidly expanding productive capacity.²² As a result, the injection of the oil money into the economy created a high rate of inflation (from 7 percent in 1971 to 35 percent in 1976, see Table 63). To prevent hyper-inflation, the government encouraged huge imports of goods, especially consumer goods. Consumer goods increased from 12 percent of total imports in 1972 to 18 percent in 1977.²³

²⁰Central Bank of Iran, Annual Report and Balance Sheet 1977 (Tehran: Central Bank of Iran, 1978), p. 103.

²¹Ibid., p. 46.

²²Fred Halliday, "Iran: The Economic Contradictions," MERIP Reports, no. 60, p. 16.

²³Central Bank of Iran, p. 153.

In less developed countries like Iran, however, the government has often been the major entrepreneur in giant industrial and agricultural projects, and the role of private investment has not been critical for the development of the economy. In Iran, by the help of increasing oil money, the share of the public investment in total domestic investment has increased sharply. The ratio of public sector to private sector investment in machinery and construction has increased from less than one in 1972 to more than one in 1977. This evidence is not consistent with Kuznets' argument concerning inability of government to provide capital formation.

Several factors which have been responsible for the declining relative share of private investment support Kuznets' arguments. In most cases, the concentration of savings in the upper income class has not guaranteed its productive use. Especially after 1973, when the government removed all restrictions on the transfer of capital out of Iran and the foreign exchange market, the upper income class shifted its assets to safe places in European and American banks. In 1975 alone, about 2 billion dollars was shifted abroad by wealthy Iranians because of their lack of confidence in the domestic economy and their expectations of future political instability.²⁴

In addition, the accumulation of wealth among the upper income class has induced non-productive speculation in suburban real estate and the purchase of luxury foreign goods - expenses not beneficial to Iranian economic development.

²⁴Halliday, "Iran: The Economic Contradictions," p. 16.

However, it may be questioned whether government owned and operated enterprises are efficient. In the free enterprise system, a large private investment may be needed for long run efficiency. Recently there has been some discussion in favor of income redistribution in the process of economic development. For instance, it is argued that more equitable income distribution provides a market for domestic goods among the lower income groups, resulting in the stimulation and development of the domestic economy.²⁵

The Linkage Between Social Welfare and
Income Inequality (Fields Approach)

Considering diminishing marginal utility of income, comparisons of interpersonal utility under assumption of identical income utility function for individuals, and the fact that social welfare depends upon the income utility of individuals, maximum social welfare exists when there is complete income equality among individuals.²⁶ As Lerner points out, any deviation from absolute income equality leads to loss in the social welfare of the society.²⁷ However, this theoretical framework embodies the notion of interpersonal comparisons of utility which most economists avoid making today. Rawls' maximin criterion is concerned with the welfare of the lowest income group.²⁸ According to this criterion, any policy that increases the well-being of the lowest income class of society will automatically increase social welfare.

²⁵ Zuvekas, Jr., Economic Development, p. 270.

²⁶ Richard A. Musgrave, Theory of Public Finance (New York: Mc-Graw Hill Book Company, Inc., 1959), pp. 106-110.

²⁷ Ibid.

²⁸ John Rawls, "Concepts of Distributional Equity," American Economic Association 64 (May 1974).

A static model expressing the relationship between income inequality and welfare function in a developing country is as follows:²⁹

$$(1) \quad W = W(Y, I), \quad W_1 = \frac{\partial W}{\partial Y} > 0, \quad W_2 = \frac{\partial W}{\partial I} < 0$$

The social welfare (W) is a positive function of national income (Y)³⁰, but negatively related to the degree of relative inequality (I) (e.g., Gini Coefficient) of national income distributed among the individuals of society. Economic growth of itself improves social welfare so long as there is no increase in income inequality; otherwise, economic growth that is associated with increasing income inequality may result in the deterioration of social welfare.

In the dynamic process of economic development, a fragmented economy like that of Iran's has been characterized by two dichotomized sectors.

1. The modern sector (subdivided between industrial and service sectors) which is for the most part concentrated in urban areas.
2. The traditional (agriculture) sector which is heavily concentrated in the rural areas. These sectors can, therefore, be considered as urban and rural sectors. This dualistic economy is characterized by a high wage differential between rural and urban areas. Assuming w^u and w^r as wage rates in urban and rural areas, then

$$w^u = aw^r, \quad a > 1$$

The economically active population of Iranian urban areas has

²⁹Gary S. Fields, Poverty, Inequality, and Development (Cambridge: Cambridge University Press, 1980), pp. 33-35.

³⁰National income (Y) can be replaced by its associated per capita income in the social welfare function, but for simplicity and consistency with the empirical computation, national income is applied.

risen from 36 percent of the total active population in 1966 to 46 percent in 1976.³¹ Symbolizing the economically active population in urban and rural areas as f^u and f^r , then total income of the economy can be stated as

$$(2) \quad Y = w^u f^u + w^r f^r$$

The relative income inequality index is a function of the labor forces and wages in these two sectors.³²

$$(3) \quad I = I(w^u, f^u, w^r, f^r), \quad \frac{\partial I}{\partial w^r} < 0, \quad \frac{\partial I}{\partial w^u} > 0,$$

$$\frac{\partial I}{\partial f^r} = - \frac{\partial I}{\partial f^u} > 0$$

By substituting (2) and (3) into (1), the social welfare function can be expressed as:³³

$$W = W(w^u f^u + w^r f^r, I(w^u, f^u, w^r, f^r))$$

It is obvious that changes in wages and employment of the sectors influence social welfare. In a comparative static approach to dualistic growth, a practical way of investigating this issue is to adjust the first differential of national income for the population growth rate. The net effect of economic growth (ΔY) due to higher wages and shifts in the occupational structure of labor forces is expressed by³⁴

³¹ Statistical Center of Iran, National Census of Population and Housing (Tehran: Statistical Center of Iran, 1981), pp. 34-35

³² Fields, Poverty, pp. 36-37.

³³ Ibid.

³⁴ Ibid.

$$\Delta Y = \underbrace{(w_2^u - w_1^u) f_1^u (1+\rho)}_{(\beta)} + \underbrace{(f_2^u - f_1^u (1+\rho)) (w_1^u - w_1^r)}_{(\alpha)} +$$

$$\underbrace{(w_2^r - w_1^u) (f_2^u - f_1^u (1+\rho))}_{(\delta)} + \underbrace{(w_2^r - w_1^r) f_2^r}_{35}$$

(Interaction between urban sector enlargement and enrichment effects)

where (ρ) is the annual rate of population growth, which is 2.8 percent in the case of Iran.³⁶

In dualistic development, the poor segment of the economy (the rural sector) can benefit from growth through two channels: (1) by migrating to a higher wage sector (urban sector employment effects, α); and (2) by receiving increased wages in the rural sector (rural sector enrichment effect, δ).

The total gain of the poor is $(\alpha+\delta)$, and the total benefits of the urban sector in terms of higher wages is β (urban sector enrichment effect). The changes in the social welfare function with respect to changes in α , β , δ can be expressed by

$$(4) \quad \frac{\partial W}{\partial \alpha} > 0, \quad \frac{\partial W}{\partial \beta} \leq 0, \quad \frac{\partial W}{\partial \delta} > 0$$

These inequalities imply that a rise in the well-being of rural people has a positive effect on social welfare. An increase in the well-being of urban dwellers can have an ambiguous impact on the social

³⁵In this formula, sub 1 and 2 denote times (1) and (2); for example, in the case of Iran, these subs refer to $t_1 = 1966$, $t_2 = 1976$.

³⁶United Nations, "The Demographic Yearbook (1976)," (New York: United Nations, 1977).

welfare, since an increase in (β) will, ceteris paribus, increase

Y ($\frac{\partial W}{\partial Y} > 0$) and I ($\frac{\partial W}{\partial I} < 0$). However, as far as an economy with a dualistic growth is concerned, $\frac{\partial W}{\partial Y} > 0$ does not necessarily restrict this analysis

to a quasi-pareto assumption that both $\frac{\partial W}{\partial Y^r} > 0$ and $\frac{\partial W}{\partial Y^u} > 0$ where Y^u

and Y^r are the income of urban and rural areas, respectively. On the contrary, according to Fields' argument, some economists doubt that $\frac{\partial W}{\partial Y^u} > 0$

can be a safe case for less developed countries.³⁷ As a matter of value judgment, they are willing to accept $\frac{\partial W}{\partial Y^u} < 0$ rather than $\frac{\partial W}{\partial Y^u} > 0$.

Only under this assumption does this inequality $\frac{\partial W}{\partial \beta} < 0$, hold.

In the case of Iran, figures for the per capita consumption expenditures of family units are available. Assuming an overall marginal propensity to consume of approximately 94 percent,³⁸ the per capita income of household units can be calculated for the years 1966 and 1976 in rural and urban areas (Table 1).³⁹

Per capita income can be applied instead of the wage to estimate α , β , δ for the economically active population for 1966 and 1976.

³⁷ Fields, Poverty, p. 37.

³⁸ The marginal propensity to consume is derived from the permanent income function which is relatively stable over time and shows the long run consumption behavior of the economy. In this function, marginal propensity to consume (MPC) and average propensity to consume (APC) are equal. Based on the empirical results, $APC = MPC = 0.94$ for Iran. For more information see M. Mehdizadeh, An Empirical Evaluation of Alternative Consumption Hypothesis in Less Developed Countries: A Case Study of Iran, (Ph.D. dissertation, University of Oklahoma, 1980), pp. 53-55.

³⁹ M. Parvin and A. N. Zamani, "Political Economy". p. 47.

TABLE 1

PER CAPITA INCOME OF IRANIAN HOUSEHOLD UNITS
(IN CONSTANT RIALS OF 1959)

	Urban	Rural
1966	19908	8844
1976	43392	11389

TABLE 2

THE DISTRIBUTION OF IRANIAN ECONOMICALLY ACTIVE
POPULATION BETWEEN RURAL AND URBAN AREAS

	Urban	Rural	Total
1966	2768361	5073162	7841523
1976	4335564	5460492	9796056

SOURCE: "National Census of Population and Housing, 1976."
Publication no. 186 (Tehran: Statistical Center of
Iran, 1981), p. 34.

(BILLIONS OF RIALS)

$\alpha = 16.48$	Y_1^u (estimated total income in urban areas in 1966) = 55.112
$\beta = 66.80$	
$\delta = 13.89$	Y_1^r (estimated total income in rural areas in 1966) = 44.867

The relative gain of rural and urban sectors from the economic growth can be expressed by

$$\frac{\beta}{Y_1^u} = 1.212 \quad > \quad \frac{\alpha+\delta}{Y_1^r} = 0.676$$

The relative gain of
the rich urban sector

The relative gain of
the poor rural sector

The urban sector is shown to have been the main beneficiary of Iranian dualistic growth. In other words, the relative economic position of the poor sector deteriorated because the income in that sector did not rise as fast as the income in the rich sector. One may argue that if the objective of economic development is to improve the relative well-being of the poor rural sector, this goal was not accomplished. As a consequence, with respect to the role of α , β and δ in the determination of social welfare (inequalities 4), the Iranian society as a whole was not better off at the end of 1976 than it was in 1966.

Conclusion

Chapter II has been concerned with the relationship between income distribution and economic development. Important empirical studies by Kuznets, Adelman and Morris, and Ahluwalia hypothesize that there is a trade-off between income equality and economic growth in most underdeveloped countries with dualistic economic development. The dynamics of the economic development during industrialization and urbanization increase income inequality in the course of development.

At the highest level of economic development, a set of specific policies is required to effect more equitable income distribution. This hypothesis will be tested in reference to Iran in Chapter III.

It has been pointed out that from a traditional point of view income inequality is associated with savings concentration among the upper income class and consequent capital formation which is essential to economic growth. However, Kuznets challenges this justification for income inequality and contends that private funds are diverted mostly to speculative investment in real estate and foreign banks. He doubts the ability of the government to act as entrepreneur in providing capital formation. The evidence for Iran concerning the diversion of private funds to unproductive uses support Kuznets' criticism. Since the government is a major entrepreneur in the Iranian economy, Kuznets' doubt concerning government entrepreneur is irrelevant. Overall, it can be stated that for the oil producing countries like Iran emphasis on income inequality as a strategy for the development may not be appropriate.

In a comparative static approach to the relationship between social welfare and income inequality during the course of development, a specific Fields model relevant to dualistic growth of the less developed countries, notably Iran, has been formulated. Application of this model to Iranian data reveals that the urban sector has profited most from the dualistic growth of Iran while the relative position of the poorer rural sector has deteriorated since income in the rural sector has not risen as fast as income in the rich urban sector. With respect to the different effects of the computed values of α , β , δ on the social welfare and given

that the value of $\alpha + \delta$ (the gain of the poor sector) is less than β (the gain of the rich sector), it is concluded that Iranian society was not better off at the end of 1976 in relation to 1966.

CHAPTER III

ESTIMATION OF THE INCOME INEQUALITY SOURCES IN IRAN

In Iran, the overall relative income inequality is assumed to be produced through three different channels: (1) income inequality within rural and urban areas, (2) income inequality between rural and urban areas, and (3) regional income inequality. Examining the three different sources of income inequality in Iran is the main purpose of this chapter.

To measure the income inequality within the urban and rural areas, the Lorenz curve and Gini coefficient as a graphical and mathematical framework of the relative income inequality are presented. Then, the Kakwani and Podder model is developed, as a specific approach, and the Lorenz curve and its relevant income inequality indices, the Gini coefficient and the relative standard deviations, and their variances are estimated. Application of this model to Iranian data to determine the degree of relative income inequality is restricted to the period of 1969-79 in the urban areas and to the period of 1969-77 in the rural areas, because the economic data on the urban and rural households are available for these specific periods of time only.

On the second source of income inequality, the income variations between rural and urban areas, different decomposition models, including analysis of variance, Atkinson inequality index, and Theil

decomposition procedure are used to partition overall income inequality into variations between and within urban and rural areas and to examine the degree of significance of the contribution of the income variations between urban and rural areas to overall income inequality. By employing these specific approaches to the Iranian data, especially during 1970-77, the only period of time in which the relevant and necessary data on the households are available, one can ascertain the degree to which the income variations between rural and urban areas have contributed to the total income inequality of Iran.

Finally, for the third source of income inequality, the regional income differentials, the weighted coefficient of variation and the weighted Gini Coefficient are applied as indices of the regional income inequality to estimate the degree of income inequality across different provinces of Iran for some years between 1971-78.

Determination of Urban and Rural Income Inequality in Iran

Theoretical Framework

A distinct approach to determine the income inequality in urban as well as rural areas is to apply the Lorenz curve and its associated income inequality indices. A graphical illustration of relative income inequality is presented by the Lorenz curve which indicates the relationship between the cumulative proportion of the population and cumulative proportion of income.

Consider (X) income of a household as a random variable with density function of $f(X)$ and probability distribution of $F(x) = \int_0^x f(X)dx$,

$X < x$.⁴⁰ The cumulative frequency of income is indicated by the first moment distribution function

$$F_1(x) = \frac{1}{\mu_0} \int_0^x X f(X) dX$$

where (μ) is the mean of this distribution.⁴¹

In other words, it can be stated that the Lorenz Curve is the relationship between $F(x)$ and $F_1(x)$. In Fig. 2, the vertical and horizontal axes represent the cumulative percentage of income $F_1(x)$ and the cumulative percentage of population $F(x)$.

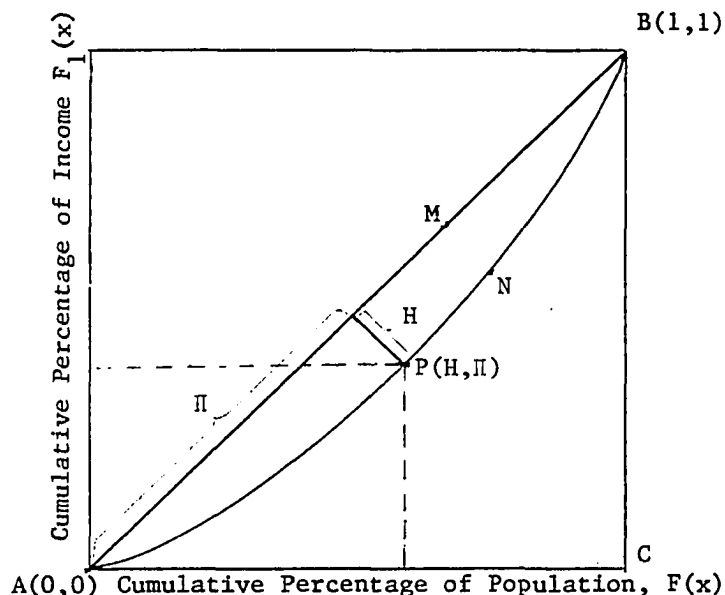


Fig. 2. The Lorenz Curve

In Fig. 2, the Lorenz Curve is shown by ANB. Each point on this curve

⁴⁰ $F(x)$ implies the probability that a household chosen at random has income less than (x) .

⁴¹ For more information see Nanok C. Kakwani, "The Lorenz Curve," Income Inequality and Poverty (U.S.: Oxford University Press, 1980), pp. 30-47.

shows the specific percentage of population which obtains a certain percentage of the total income. The area of ANBM is called the area of income inequality. The ratio of this area to the total area of AMBC is called the Gini concentration ratio or the Gini Coefficient (G). The range of variation of (G) is limited between unity and zero $0 \leq G \leq 1$. AMB is an egalitarian line. In the case of perfect income equality, the curve ANB would be identical with AMB. In this case $G=0$. In the case of perfect income inequality, ANB would be identical with ACB, and $G=1$.

Another income inequality measurement is the relative mean deviation, which is formulated as:

$$T = \frac{1}{2\mu} \frac{1}{N} \sum_{i=1}^N |X_i - \mu|, \quad 0 \leq T \leq 1$$

where (N) is the size of population, X_i is the income of household (i), and (μ) is the income mean of population. The concept of the relative mean deviation refers to the maximum distance between the egalitarian line and the Lorenz Curve. Similar to the Gini Coefficient, the variations of (T) are restricted between (0) and (1). When income is equally distributed among households, R is reduced to zero, and when the income is unequally distributed, (R) approaches (1).

The Gini Coefficient as index of income inequality is preferred to the relative mean deviation since the Gini Coefficient is sensitive to the income transfer from higher income to lower income households which preserves the income ranking of the households, e.g., the Gini Coefficient is reduced. The relative mean deviation lacks this property. It is unresponsive to the income transfer among the households on one

side of the income distribution mean.

In previous income inequality measurement investigations, the income distribution has been assumed to possess a specific density function, i.e., Pareto or lognormal density function. Based on this particular assumption, the functional form for the Lorenz Curve has been derived. However, there has been an increasing concern that this kind of estimated Lorenz Curve cannot accurately determine the concentration of income in the different income brackets of population.

Recently, a rigorous model of estimation of the Lorenz Curve and its inequality indices has been developed by Kakwani and Podder.⁴² In this model, instead of imposing specific assumptions about the density function of income distribution, a specific functional form for the Lorenz Curve is proposed. Their empirical findings suggest that this specific function can estimate the concentration of income in the various income classes more accurately.

Kakwani and Podder Model. In the Kakwani and Podder model, the coordinates of each point, like (P) on the Lorenz Curve, are identified by the distance of the point from the egalitarian line (H) and from the origin (Π), i.e., $P(H, \Pi)$, (see Fig. 2), in contrast to the previous studies in which the coordinates of each point on the Lorenz Curve were identified by its distance from $F(x)$ and $F_1(x)$ axes, i.e., $P(F(x), F_1(x))$.

It can be shown that $H = \frac{F_1(x) - F(x)}{\sqrt{2}}$, $\Pi = \frac{F_1(x) + F(x)}{\sqrt{2}}$

⁴²N. C. Kakwani and N. Podder, "Efficient Estimation of the Lorenz Curve and Associated Inequality Measures from Group Observations," Econometrics (1976):137-148.

Then the equation of the Lorenz Curve in terms of H, Π is expressed as $H = f(\Pi)$. The slope of the Lorenz Curve generally is

$$\frac{dH}{d\Pi} = \frac{\mu - x}{\mu + x} \quad (1)$$

The following functional form is proposed by Kakwani and Podder.

$$H = a\Pi^\alpha(\sqrt{2} - \Pi)^\beta, \quad a > 0, \alpha > 0, \beta > 0 \quad (2)$$

The assumption of $a > 0$ ensures that the Lorenz Curve is always below the egalitarian line. When $\Pi = 0$ or $\Pi = \sqrt{2}$, H is zero. Depending on the values of (α, β) , the Lorenz Curve is skewed toward the point $(0, 0)$ or $(1, 1)$.

By logarithm transformation, equation (2) can be expressed as:

$$\log H = \log a + \alpha \log \Pi + \beta \log(\sqrt{2} - \Pi) \quad (3)$$

However, $F_1(x)$ and $F(x)$ are parameters of the population to which there is no access, so H and Π cannot be known. Therefore, $F_1(x)$, $F(x)$, H and Π have to be estimated from a sample of households.

Assuming there are T income brackets ($i = 1, 2, \dots, T$), n is the total sample, n_i is the sample size in bracket i , $f_i = \frac{n_i}{n}$ is the relative frequency in brackets (i), $\bar{X}$ is the overall sample mean and $\bar{X}_i$ is the sample mean in each income bracket. Then the consistent estimators of $F_1(x)$ and $F(x)$ can be stated as $P_i = \sum_{\gamma=1}^i f_\gamma$, $Q_i = \frac{1}{\bar{X}} \sum_{\gamma=1}^i \bar{X}_\gamma f_\gamma$.

Hence, consistent estimators of H_i , Π_i as η_i and π_i can be stated:

$$\eta_i = \frac{P_i - Q_i}{\sqrt{2}}, \quad \pi_i = \frac{P_i + Q_i}{\sqrt{2}}$$

In the Lorenz equation (equation 3), after substituting η_i for H_i and

π_i for Π_i , a random error term like e_{i1} emerges in the equation

$$\log \eta_i = \log a + \alpha \log \pi_i + \beta \log (\sqrt{2} - \pi_i) + e_{i1} \quad (4)$$

This key equation is simply called the Lorenz regression equation and is used extensively later to estimate a , α and β . Each income bracket is considered as an observation for the estimation of the regression coefficients. Then, depending on the number of income brackets, the number of values on η_i and π_i are specified. Applying a set of values of η_i and π_i to the Lorenz regression, the coefficients of a , α , and β and their variances are estimated.

Techniques of Estimation

First, by applying ordinary least squares (OLS, method I) to the Lorenz regression equation, its coefficients and their associated variances are estimated.

Second, by using the information concerning the ranges of different income brackets, the estimations can be derived with more efficiency. The equation of $\frac{dH}{d\pi}$ for the specific function of the Lorenz Curve is expressed as

$$\frac{(\mu - x_i)}{(\mu + x_i)} \frac{\pi_i(\sqrt{2} - \pi_i)}{H_i} = (\sqrt{2} - \pi_i)\alpha - \pi_i\beta$$

where x_i is the upper boundary of the bracket (i). After substituting consistent estimations of μ , π_i , H_i in this equation, e_{i2} as a random error term is introduced:

$$\frac{(\bar{X} - x_i)}{(\bar{X} + x_i)} \frac{\pi_i(\sqrt{2} - \pi_i)}{\eta_i} = (\sqrt{2} - \pi_i)\alpha - \pi_i\beta + e_{i2} \quad (5)$$

By estimating jointly equations (4) and (5) through using a seemingly unrelated equations technique, the Zellner method (method II), the coefficients of a , α , β are estimated more efficiently.⁴³

After estimating a , α , β , the Gini concentration ratio is estimated from

$$G = 2 \int_0^{\sqrt{2}} a \pi^{\hat{\alpha}} (\sqrt{2} - \pi)^{\hat{\beta}} d\pi = 2(a)(\sqrt{2}) B(1 + \hat{\alpha}, 1 + \hat{\beta})$$

where B is beta function. The variance of the Gini Coefficient also can be derived.⁴⁴

When the relative mean deviation (T) is estimated in terms of the estimated values of parameters a , α , β , then

$$\hat{T} = (\sqrt{2})^{1+\hat{\alpha}+\hat{\beta}} \frac{\hat{a}^{\hat{\alpha}} \hat{\alpha}^{\hat{\beta}}}{(\hat{\alpha}+\hat{\beta})}$$

The variance of $(\hat{T})$ is similar to the variance of $(\hat{G})$.

Source of Statistics

The most reliable data in Iran pertain to the distribution of the consumption expenditure among households of different income classes. So the budget expenditure of each household can be regarded as a good indicator of its income level and well-being.

The information on the expenditure distribution of the urban households is available from annual reports of both the SCI and the CBI.

⁴³A. Zellner, "An Efficient Method of Estimating Seemingly Unrelated Regressions and Tests for Aggregation Bias," Journal of American Statistic Association 57 (1962):348-368.

⁴⁴The variance of $(\hat{G})$ is derived as: $\text{var}(\hat{G}) = \left(\frac{\partial G}{\partial a}\right)^2 \text{var}(\hat{a}) + \left(\frac{\partial G}{\partial \alpha}\right)^2 \text{var}(\hat{\alpha}) + \left(\frac{\partial G}{\partial \beta}\right)^2 \text{var}(\hat{\beta}) + 2\left(\frac{\partial G}{\partial a}\right)\left(\frac{\partial G}{\partial \alpha}\right) \text{cov}(\hat{a}, \hat{\alpha}) + 2\left(\frac{\partial G}{\partial a}\right)\left(\frac{\partial G}{\partial \beta}\right) \text{cov}(\hat{a}, \hat{\beta}) + 2\left(\frac{\partial G}{\partial \alpha}\right)\left(\frac{\partial G}{\partial \beta}\right) \text{cov}(\hat{\alpha}, \hat{\beta})$

The CBI's annual reports are more detailed and accurate than those of the SCI.⁴⁵ Therefore, the data for urban areas are derived from the CBI's annual reports from 1969-1979. The data for the rural areas are derived exclusively from the annual reports of the SCI on the budget of the rural households, which is available only for 1969-1977. The number of expenditure brackets varies from year to year and from urban areas to rural areas.⁴⁶

Empirical Analysis

By applying method I (OLS) and method II (Zellner method), the Lorenz Curve coefficients, Gini concentration ratio, relative mean deviation, and their relevant variances have been estimated for rural and urban areas of Iran for the years as shown in Tables 3 through 12.

From Tables 3 through 6, the figures in the parentheses are t-statistics which are quite high. So t-statistics indicating almost all of the coefficients of the Lorenz Curve which are used to estimate the Gini Coefficient and relative mean deviation are statistically significant at one percent level.

Using method I, with respect to the trend of the Gini Coefficient in urban areas, it is shown that this index fluctuates between 0.45 and 0.52 during 1969-1979, (excluding 1970 when $G=0.25$). The degree of income inequality increases from 0.45 in 1969 to the maximum 0.516 in 1974 and then

⁴⁵F. Mehran, "Income Distribution in Iran: The Statistics of Inequality," working paper no. 30, World Employment Programme Research, International Labor Office, Geneva, October 1975, p. 8

⁴⁶The sample size of the households and the number of income brackets for different years in the urban and rural areas have been specified in the Appendix tables.

begins declining very slowly to 0.45 in 1978-79, which still is not low. Using method II, the trend of the Gini Coefficient rises from 0.41 in 1969 to 0.67 in 1975. Then it starts diminishing slowly to 0.45 in 1978-1979.

The trend of the Gini Coefficient in the Iranian rural areas, as derived from method I, shows a decline from 0.391 in 1969 to a minimum level of 0.389 in 1972, then a rise to a maximum level of 0.4796 in 1977. Using method II of the estimation, the Gini Coefficient declines from 0.424 in 1969 to a minimum level of 0.3883 in 1972, then it rises significantly to 0.4812 in 1977.

Using method I, the fluctuations of the relative mean deviation in the urban areas of Iran increase from 0.31 in 1969 to a maximum level of 0.38 in 1976 and then decline moderately to 0.33 in 1979. With respect to method II, the relative mean deviation augments from 0.28 in 1969 to the highest level of 0.48 in 1975 and then lessens to 0.33 in 1979.

The range of variations of the relative mean deviation in the Iranian rural areas is limited between 0.29 in 1969 and 0.35 in 1977 in method I of estimation. In method II, the variations of the relative mean deviation extend from 0.31 in 1969 to 0.35 in 1977.

Therefore, several significant conclusions can be drawn. Both of the income inequality indices, the Gini Coefficient and relative mean deviation, indicate that the trend of income inequality in Iran did not decline between the years 1969 and 1979 in the urban and between 1969 and 1977 in the rural areas, in comparison with the degree of income

TABLE 3
THE ESTIMATION OF THE LORENZ CURVE COEFFICIENTS
AND THEIR VARIANCE FOR URBAN AREAS OF IRAN
(METHOD I)

Year	$\hat{a}' = \hat{\text{Log}} a$	$\hat{\alpha}$	$\hat{\beta}$	$\hat{V}_{\hat{a}'}$	$\hat{V}_{\hat{\alpha}}$	$\hat{V}_{\hat{\beta}}$
1969-1970	-0.932 (-33.56)*	0.825 (41.58)	0.778 (40.04)	0.00077	0.00039	0.00037
1970-1971	-1.609 (-3.74)	0.526 (1.56)	0.884 (5.99)	0.18479	0.113631	0.02177
1971-1972	-0.692 (-41.14)	0.955 (72.38)	0.962 (213.32)	0.00028	0.000173	0.000020
1972-1973	-0.780 (-268.82)	0.918 (511.84)	0.936 (973.00)	0.000008	0.000003	0.0000009
1973-1974	-0.696 (-71.96)	0.936 (168.040)	0.912 (181.12)	0.00009	0.00003	0.000102
1974-1975	-0.634 (-81.53)	0.907 (134.84)	0.966 (380.94)	0.00006	0.00005	0.000006
1975-1976	-0.594 (-35.83)	0.990 (75.33)	1.025 (141.25)	0.00027	0.000172	0.00005
1976-1977	-0.704 (-117.23)	0.925 (233.69)	0.960 (576.89)	0.000036	0.000015	0.000002
1977-1978	-0.742 (-86.94)	0.918 (203.306)	0.941 (320.45)	0.000072	0.00002	0.000008
1978-1979	-0.801 (-143.54)	0.908 (333.488)	0.933 (484.404)	0.00003	0.000007	0.000003

*t-statistics in parentheses significant at 1% level

SOURCE: The estimations are based on the data derived from Appendix Tables 48 through 57.

TABLE 4

THE ESTIMATION OF THE LORENZ CURVE COEFFICIENTS
AND THEIR VARIANCE FOR URBAN AREAS OF IRAN
(METHOD II)

Year	$\hat{a}' = \hat{\text{Log}} a$	$\hat{\alpha}$	$\hat{\beta}$	$\hat{V}_{a'}$	$\hat{V}_{\alpha}$	$\hat{V}_{\beta}$
1969-1970	-1.043 (-55.05)*	0.769 (56.27)	0.803 (60.96)	0.00025	0.00013	0.00012
1970-1971	-1.378 (-6.48)	0.868 (11.618)	0.725 (4.76)	0.03163	0.00390	0.01625
1971-1972	-0.723 (-21.22)	0.969 (105.59)	0.947 (42.25)	0.0008119	0.000059	0.00035
1972-1973	-0.780 (-258.00)	0.936 (958.99)	0.918 (505.28)	0.000060	0.0000001	0.000002
1973-1974	-0.700 (-77.06)	0.908 (193.22)	0.935 (176.08)	0.000057	0.000015	0.000019
1974-1975	-0.635 (-82.38)	0.9614 (391.21)	0.965 (136.47)	0.000046	0.000004	0.000039
1975-1976	-0.488 (-1.191)	0.879 (8.081)	0.817 (9.837)	0.13733	0.000303	0.000197
1976-1977	-0.703 (-111.36)	0.959 (579.04)	0.928 (229.05)	0.000031	0.000002	0.000012
1977-1978	-0.743 (-87.411)	0.940 (320.17)	0.918 (203.97)	0.0000578	0.000006	0.000016
1978-1979	-0.801 (-154.96)	0.929 (520.98)	0.908 (353.30)	0.000021	0.0000025	0.0000052

*t-statistics in parentheses significant at 1% level

SOURCE: The estimations are based on the data derived from Appendix Tables 41 through 47.

TABLE 5
THE ESTIMATION OF THE LORENZ CURVE COEFFICIENTS
AND THEIR VARIANCE FOR RURAL AREAS OF IRAN
(METHOD I)

Year	$\hat{a}' = \hat{\text{Log}} a$	$\hat{\alpha}$	$\hat{\beta}$	$\hat{V}_{a'}$	$\hat{V}_{\alpha}$	$\hat{V}_{\beta}$
1969-1970	-0.850 (-16.90)*	1.119 (12.07)	0.949 (71.96)	0.002529	0.00859	0.00017
1970-1971	-0.656 (-11.31)	1.26 (12.52)	0.978 (64.71)	0.0033	0.01012	0.00022
1971-1972	-0.777 (-28.43)	0.98 (38.79)	0.934 (91.55)	0.000746	0.00063	0.000104
1972-1973	-0.906 (-23.98)	1.019 (23.59)	0.936 (83.68)	0.001427	0.001867	0.00012
1973-1974	-0.834 (-25.75)	0.980 (31.54)	0.931 (83.40)	0.001049	0.00096	0.00012
1974-1975	-0.877 (-38.73)	0.914 (67.27)	0.94 (155.41)	0.00051	0.00019	0.000036
1976-1977	-0.712 (-16.159)	0.970 (28.557)	0.955 (78.441)	0.0019421	0.0011541	0.00014

*t-statistics in parentheses significant at 1% level

SOURCE: The estimations are based on the data derived from Appendix Tables 41 through 47.

TABLE 6

THE ESTIMATION OF THE LORENZ CURVE COEFFICIENTS
AND THEIR VARIANCE FOR RURAL AREAS OF IRAN
(METHOD II)

Year	$\hat{a}' = \hat{\text{Log}} a$	$\hat{\alpha}$	$\hat{\beta}$	$\hat{V}_{\hat{a}'}$	$\hat{V}_{\hat{\alpha}}$	$\hat{V}_{\hat{\beta}}$
1969-1970	-0.868 (-28.375)*	0.908 (258.138)	0.947 (21.700)	0.00046	0.0000061	0.00095
1970-1971	-0.738 (-13.69)	0.967 (69.02)	1.106 (16.53)	0.00145	0.000098	0.002236
1971-1972	-0.850 (-19.49)	0.960 (49.63)	0.931 (34.81)	0.00138	0.000272	0.00052
1972-1973	-0.967 (-41.69)	0.896 (189.58)	0.940 (43.94)	0.00039	0.000016	0.0003334
1973-1974	-0.891 (-40.87)	0.896 (130.47)	0.938 (42.290)	0.00034	0.000034	0.00035
1974-1975	-0.887 (-43.45)	0.930 (168.24)	0.909 (72.70)	0.000303	0.000033	0.00011
1976-1977	-0.714 (-21.16)	0.954 (104.54)	0.969 (38.07)	0.000797	0.000056	0.00045

*t-statistics in parentheses significant at 1% level

SOURCE: The estimations are based on the data derived from Appendix Tables 48 through 57.

TABLE 7
THE ESTIMATION OF INCOME INEQUALITY INDICES AND
THEIR VARIANCE FOR URBAN AREAS OF IRAN
(METHOD I)

Year	Gini Coefficient ($\hat{G}$)	Variance of Gini Coefficient ($\hat{V}_G$)	Relative Mean Deviation ($\hat{T}$)	Variance of Relative Mean Deviation ($\hat{V}_T$)
1969-1970	0.4515	0.00022	0.3194	0.000357
1970-1971	0.2597	0.222232	0.1816	0.130502
1971-1972	0.4913	0.000140	0.3641	0.000117
1972-1973	0.4640	0.000005	0.3408	0.000004
1973-1974	0.5059	0.000036	0.3713	0.000038
1974-1975	0.5170	0.000021	0.3840	0.000023
1975-1976	0.5167	0.000056	0.3884	0.000091
1976-1977	0.4928	0.000017	0.3637	0.000015
1977-1978	0.4807	0.000036	0.3534	0.000031
1978-1979	0.4572	0.000019	0.3352	0.000014

TABLE 8
THE ESTIMATION OF INCOME INEQUALITY INDICES AND
THEIR VARIANCE FOR URBAN AREAS OF IRAN
(METHOD II)

Year	Gini Coefficient ($\hat{G}$)	Variance of Gini Coefficient ($\hat{V}_G$)	Relative Mean Deviation ($\hat{T}$)	Variance of Relative Mean Deviation ($\hat{V}_T$)
1969-1970	0.4104	0.000108	0.2888	0.000125
1970-1971	0.2917	0.028300	0.2065	0.018268
1971-1972	0.4764	0.000435	0.3531	0.000348
1972-1973	0.4640	0.000060	0.3408	0.00033
1973-1974	0.5060	0.000022	0.3710	0.000024
1974-1975	0.5174	0.000016	0.3840	0.000018
1975-1976	0.6726	0.160755	0.4827	0.084052
1976-1977	0.4935	0.000016	0.3642	0.000013
1977-1978	0.4708	0.000031	0.3533	0.000025
1978-1979	0.45830	0.000013	0.3358	0.000010

TABLE 9
THE ESTIMATION OF INCOME INEQUALITY INDICES AND
THEIR VARIANCE FOR RURAL AREAS OF IRAN*
(METHOD I)

Year	Gini Coefficient ($\hat{G}$)	Variance of Gini Coefficient ($\hat{V}_G$)	Relative Mean Deviation ($\hat{T}$)	Variance of Relative Mean Deviation ($\hat{V}_T$)
1969-1970	0.3913	0.001567	0.2971	0.001022
1970-1971	0.4412	0.001417	0.3438	0.001143
1971-1972	0.4520	0.000289	0.3351	0.000300
1972-1973	0.3897	0.000696	0.2907	0.000592
1973-1974	0.4252	0.000455	0.3167	0.000433
1974-1975	0.42141	0.000326	0.3095	0.000237
1976-1977	0.4796	0.001101	0.3560	0.000827

*Due to insufficient data on the rural household expenditures in (1975-1976), the indices were not estimated for this period.

TABLE 10
THE ESTIMATION OF INCOME INEQUALITY INDICES AND
THEIR VARIANCE FOR RURAL AREAS OF IRAN
(METHOD II)

Year	Gini Coefficient ($\hat{G}$)	Variance of Gini Coefficient ($\hat{V}_G$)	Relative Mean Deviation ($\hat{T}$)	Variance of Relative Mean Deviation ($\hat{V}_T$)
1969-1970	0.4249	0.000941	0.3123	0.000336
1970-1971	0.4364	0.000686	0.3311	0.000559
1971-1972	0.4246	0.000768	0.3203	0.000640
1972-1973	0.3883	0.000153	0.2846	0.000153
1973-1974	0.4193	0.000265	0.3072	0.000169
1974-1975	0.4204	0.000205	0.3081	0.000144
1976-1977	0.4812	0.000547	0.3558	0.000366

inequality in 1969.

These empirical results obviously confirm the previous theoretical analyses, especially Kuznets' hypothesis, as mentioned in Chapter II, which stress that in the course of economic development, there is a trade-off between growth and income equality. With the help of the increased oil revenues, Iran's economic growth rate accelerated. However, this remarkable economic growth rate was not associated with a more equitable distribution of income. Furthermore, the degree of income inequality has always been lower in rural areas than in urban areas, a fact which confirms Kuznets' hypothesis that more industrialized and developed urban areas exhibit greater income inequality than do backward rural areas, in which industrialization has not yet spread.

So far, this study has been primarily focused on the comparisons of intertemporal distribution of income within Iran. Here it would be more productive to compare the pattern of income distribution in Iran with that in other countries (developed and less developed) as far as the statistical data allow, accepting the fact that the method of collecting and calculating data may have been different from one country to another. On the average, the Gini Coefficient in both urban and rural areas of Iran in the period of 1969-1979 was higher than that of all advanced Western countries.⁴⁷

In comparison with the income distribution of non-oil exporting countries in Asia, no conclusive result can be drawn. For instance,

⁴⁷ Fanny Ginor, Socio-Economic Disparities in Israel, (Tel Aviv: University Publishing Projects, 1979), p. 181.

the income inequality in Iran for both urban and rural areas is higher than that in India and lower than that in Turkey.^{48,49} In contrast to the trend of income inequality in Iran, the Gini Coefficient shows a marginal reduction in both urban and rural areas of India during 1953-71, and of Turkey during 1968-1973.

Income Inequality Between Rural and Urban Areas of Iran

Theoretical Foundations

Development economists strongly argue that income differentials between rural and urban areas of the less developed countries have been one of the main contributors to the prevailing overall income inequality. The main purpose of this section is to investigate how significantly income variations between rural and urban areas have contributed to the overall income inequality in Iran during 1970-1977. For this purpose, three different decomposition methodologies, (a)-the analysis of variance, (b)-the Theil inequality index, and (c)-the Atkinson inequality coefficient, are applied to decompose the total income inequality into the income variations between and within urban and rural areas.

Analysis of Variance Approach. In this approach, the household income is assumed as a dependent variable and area (rural and urban)

⁴⁸Uma Datta Roy Choudhury, "Income Distribution and Economic Development in India Since 1950-51," The India Economic Journal 25 (October-December 1977):160.

⁴⁹E. Özbudun and A. Ulusan, The Political Economy of Income Distribution in Turkey, (New York: Holmes and Meier Publishers, Inc., 1980).

is assumed as an independent variable.⁵⁰ All of the quantities of household income are applied in terms of the logarithm.⁵¹ A general mathematical expression of the analysis of variance is stated as

$$\sum_i \sum_j (Y_{ij} - \bar{Y})^2 = \sum_i \sum_j (Y_{ij} - \bar{Y}_i)^2 + \sum_i N_i (\bar{Y}_i - \bar{Y})^2$$

Total sum of square of in- come variations	Sum of square of variations within rural and urban areas	Sum of square of vari- tions between rural and urban areas
--	--	--

where $i = 1, 2$ identifies rural and urban areas, Y_{ij} is the income of household (j) in area (i), $\bar{Y}$ is overall sample mean, and $\bar{Y}_i$ is the sample mean in area (i).

Atkinson Inequality Index. In Atkinson's opinion, a notion of the social welfare function underlies any summary measures of income inequality, e.g., Gini Coefficient.⁵² However, Atkinson used directly the concept of the social welfare in his inequality measure by introducing the concept of the equally distributed equivalent level of income (Y_{EDE}). He defines (Y_{EDE}) as the income per household which, if equally distributed among the households, will yield the same social welfare as actual income distribution. Let $U(Y)$ denote the utility function of a household with income (Y), and $f(Y)$ is the density function of the income distribution. The social welfare is expressed mathematically as:

⁵⁰Gary S. Fields, "Income Inequality in Urban Colombia: A Decomposition Analysis," Review of Income and Wealth 3 (September 1979): 327-341.

⁵¹An appropriate measurement of income inequality should be independent from the income scale. By log transformation of income quantity, analysis of variance satisfies this condition. This method is known as analysis of the log variance.

⁵²Anthony B. Atkinson, "On the Measurement of Inequality," pp. 321-362.

$$W = U(Y_{EDE}) \int_0^Y f(Y) dY = \int_0^Y U(Y) f(Y) dY$$

This social welfare function implies that the actual income distribution and Y_{EDE} have the same rank with respect to social welfare. The social welfare is assumed to be symmetric, additive, and with respect to the household incomes, separable.

The Atkinson inequality index is stated as $I = 1 - \frac{Y_{EDE}}{\mu}$ where (μ) is the income mean of population.

In interpreting the Atkinson index, let us suppose $I = 0.4$. This implies that 60 percent of the actual income is necessary to achieve the same social welfare as the actual income distribution if it is distributed equally among households. The low I indicates that a high percentage of equally distributed national income is necessary to achieve the same social welfare as actual income distribution, so the degree of income inequality is low. The range of fluctuations of I is restricted between (0) and (1). $I = 1$ when there is complete income inequality; $I = 0$ when there is complete income equality.

Since most income inequality measurements, such as the Gini Coefficient and log variance, are independent from the income scale, in order to have this property in the Atkinson index, the homothetic social welfare function has been employed, which results in

$$I = 1 - \left(\sum_i \left(\frac{y_i}{\mu} \right)^{1-\epsilon} f(y_i) \right)^{\frac{1}{1-\epsilon}} \quad 0 \leq I \leq 1$$

In this overall inequality index, $f(Y_i)$ is relative frequency in income bracket (i), (μ) is the income mean of the population, and (Y_i) is the

average income in the bracket (i). (ϵ) is the degree of inequality aversion which has a significant role in determining the value of I.

(ϵ) is high or low depending on whether income transfers to the lowest income group are weighted more or less by the public.

The value of (ϵ) varies between zero and infinity. When $\epsilon = 0$, the public is indifferent to the income inequality. Increasing value of ϵ implies that society is more favorable and weights more the well-being of the lowest income class. This value judgment is similar to Rawls' criterion.⁵³

The partitioning of the Atkinson index into two components, between rural and urban inequality (I_b) and with urban and rural income inequality (I_w), will result in the following:⁵⁴

$$I = I_w + I_b \quad (6),$$

where $I_b = 1 - \frac{1}{\mu} (\sum_i \lambda_i \mu_i^{1-\epsilon})^{\frac{1}{1-\epsilon}}$

In I_b formula, (μ) is the overall household income mean, (μ_i) is the income mean in area (i), and λ_i is the population share of area (i).

Estimating I and I_b from the sample of household incomes, I_w can be derived from relationship (6).

Theil Decomposition Approach. The Theil inequality index is derived from "the expected information of the message which transforms population shares into income share."⁵⁵ The measurement unit of the Theil

⁵³A. B. Atkinson, The Economics of Inequality, (London: Oxford University Press, 1975), pp. 47-49.

⁵⁴Gary S. Fields, Poverty, Inequality and Development, pp. 106-107.

⁵⁵Henri Theil, Statistical Decomposition Analysis, p. 99.

inequality index is the nit.⁵⁶

Assuming there are two groups (urban and rural areas, $g = 1, 2$), consisting of a total (N) households, each group embodies N_g individuals and has been classified into K_g income brackets. N_i is the population of income bracket (i), q_i is the income share of bracket (i) from the total income, and Q_g is the income share of the group (g) from the total income. Then the income inequality decomposition is expressed by the formula:⁵⁷

$$T = \sum_{i=1}^N q_i \log \frac{q_i}{N_i/N} = \sum_{g=1}^G Q_g \log \frac{Q_g}{N_g/N} + \sum_{g=1}^G Q_g \sum_i \frac{q_i}{Q_g} \log \frac{\frac{q_i}{Q_g}}{\frac{N_i}{N_g}}$$

Total		
Income	Inter-area	Intra-area
Inequality	Inequality	Inequality

where the first term on the right side of the equation indicates the income inequality between rural and urban areas. In the case of equal income distribution between two areas, this term reduces to zero.⁵⁸ The second term indicates the income inequality within these areas. In the case of complete income equality within the areas, the second term reduces to zero.⁵⁹

⁵⁶The amount of information from a message can be measured by the probability of occurrence, of the message which can be stated by a decreasing function like $h(P) = \log \frac{1}{P} = -\log P$, where the amount of information $h(P)$ which has inverse relationship with probability of occurrence of the message is measured by a unit called nit.

⁵⁷Henri Theil, Statistical Decomposition Analysis, pp. 99-101

⁵⁸In this case, the ratio of $\frac{Q_g}{N_g/N} = 1$ and $\log 1 = 0$.

⁵⁹In this case, the ratio of $\frac{q_i/Q_g}{N_i/N_g} = 1$ and $\log 1 = 0$.

From the conceptual point of view, in a comparison of the different decomposition models, analysis of variance has several important advantages over the others. In this approach, the significance of urban-rural income inequality can be tested. Moreover, this model is more sensitive to the income inequality in the lower income brackets. From the economic point of view, the Atkinson inequality index may be more acceptable than others, because it directly relates social welfare to the distribution of income. Despite the fact that the Theil inequality approach does not provide as meaningful a statistical interpretation as the analysis of variance, it is widely used in the Social Sciences because of its simple procedure.

Empirical Analysis

The relevant data concerning household income in the urban and rural areas of Iran during the 1970-77 period are derived from the same source as the data used in the previous sections of this chapter.

According to data in Table 11, the analysis of variance (ANOVA) for Iranian household income during the 1970-1977 period, shows the following.⁶⁰ Despite the high values of F-statistics which indicate that the per capita income of households in urban areas has been statistically higher than in rural areas at a one per cent level of significance, less than 30 per cent of variation in household income is explained by the variations of income between rural and urban areas during the 1970-77 period.

⁶⁰ According to Gary S. Fields, the ignorance of income variations in each bracket which is based on the assumption that all of the households in that bracket receive the same amount of income, does not distort our results seriously.

Adopting the Atkinson inequality approach to estimate the income inequality between rural and urban areas during the 1971-1977 period, the empirical results have been tabulated in Tables 12 and 13. In Table 12, $\epsilon = 0.5$ and in Table 13, $\epsilon = 3$ are assumed. As can be seen from the data in these tables, when the value (ϵ) increases from (0.5) to (3), the degree of overall income inequality augments greatly. Increasing the value of (ϵ) from (0.5) to (3) indicates that society changes its attitude toward income inequality from almost indifference ($\epsilon = 0.5$) to more concern for the well-being of the lowest income class. According to data in table 13, when $\epsilon = 3$, the Atkinson inequality index indicates that the Iranian economy as a whole suffered from maldistribution of income during 1970-77. Furthermore, a small fraction of the overall income inequality index (about 20-40 per cent) in Iran was generated by the income inequality between rural and urban areas during the same period.

According to the Theil decomposition table (Table 14), 30 per cent of the overall income inequality of Iran during the 1971-1977 period was attributed to the income inequality between rural and urban areas. This demonstrates that the main source of income inequality of Iran originated in the income inequality within rural and urban areas, rather than between these areas.

The findings from using all three decomposition techniques, e.g., Theil decomposition, Atkinson index, and analysis of variance, have demonstrated that income inequality between rural and urban areas was not a major contributor to overall income inequality and variations in Iran during 1971-1977. On the contrary, the overall income inequality was affected

primarily by the income variations within the rural and urban areas rather than between these areas.

Regional Income Inequality in Iran

Theoretical Analysis

Williamson has been the pioneering economist who hypothesized the relationship between economic development and regional income inequality within a country.⁶¹ His theory is similar to Kuznets' hypothesis which was discussed in the previous chapter. According to Williamson's hypothesis, at the beginning of the process of economic development, interregional income inequality increases, then stabilizes, and only at the highest level of development is there a convergence of the income differentials (in terms of per capita income) in different regions of a country. His proposition is based on an analysis of the cross-sectional and time series data of several countries, most of them advanced. Consequently, the main results of this study may not be applicable in every way to less developed countries.

In a recent study by Gilbert and Goodman, which collected empirical evidence concerning cross-sectional and time series studies of the regional income inequalities for 15 less developed countries, Williamson's hypothesis was rejected.⁶² According to their findings, there is no

⁶¹J. G. Williamson, "Regional Inequality and the Problem of National Development: A Description of the Patterns," Economic Development and Culture Change 13 (1965):3-43.

⁶²Alan Gilbert and David E. Goodman, "Regional Income Disparities and Economic Development: A Critique," Development Planning and Spatial Structure, ed. Alan Gilbert (New York: John Wiley and Sons, 1976), pp. 113-137.

TABLE 11

THE DECOMPOSITION OF OVERALL INCOME VARIATIONS
IN IRAN THROUGH THE ANALYSIS OF VARIANCE
BY GENERAL LINEAR MODELS PROCEDURE

Year	Total Sum of Square	Sum of Square Due to Variations of Income Between Rural and Urban Areas	Sum of Square Due to Variations of Income Within Rural and Urban Areas	Degree of Freedom df	F - Statistics
1970-71	6009.37 (100)	1719.02 (28.6)	4290.35 (71.40)	(1,6318)	2531.45*
1971-72	11048.31 (100)	966.017 (8.74)	10082.30 (91.26)	(1,16622)	1592.61
1972-73	13302.20 (100)	4234.57 (31.84)	9067.72 (68.16)	(1,18387)	8586.63
1973-74	12085.78 (100)	3571.91 (29.55)	8513.87 (70.45)	(1,13575)	5695.27
1974-75	12142.37 (100)	1746.64 (14.38)	10395.68 (85.62)	(1,12689)	2131.96
1976-77	13552.015(100)	4130.30 (30.48)	9421.70 (69.52)	(1,12008)	5246.09

(---) Indicates Percentage

*F-statistics significant at 1% level.

SOURCE: The decomposition analysis is based on the data derived from Appendix Tables 41 through 55.

TABLE 12

THE DECOMPOSITION OF OVERALL INCOME INEQUALITY
IN IRAN BY THE ATKINSON APPROACH, ($\epsilon=0.5$)

Year	Overall Income Inequality Index	Income Inequality Index Between Rural and Urban Areas	Income Inequality Index Within Rural and Urban Areas
1970-71	0.2413 (100)	0.09650 (39.40)	0.1448 (60.6)
1971-72	0.1776 (100)	0.02726 (15.35)	0.15034 (84.65)
1972-73	0.2159 (100)	0.11164 (51.70)	0.10426 (48.30)
1973-74	0.2368 (100)	0.09159 (38.68)	0.14521 (61.32)
1974-75	0.2279 (100)	0.03691 (16.19)	0.19099 (83.81)
1976-77	0.2628 (100)	0.03961 (15.07)	0.22319 (84.93)

(---) Indicates Percentage

SOURCE: The decomposition analysis is based on the data derived from Appendix Tables 41 through 55.

TABLE 13

THE DECOMPOSITION OF OVERALL INCOME INEQUALITY
IN IRAN BY THE ATKINSON APPROACH, ($\epsilon=3$)

Year	Overall Income Inequality Index	Income Inequality Index Between Rural and Urban Areas	Income Inequality Index Within Rural and Urban Areas
1970-71	0.6753 (100)	0.3896 (57.70)	0.2857 (42.30)
1971-72	0.5786 (100)	0.10115 (17.48)	0.4775 (82.52)
1972-73	0.6091 (100)	0.3235 (53.11)	0.2856 (46.88)
1973-74	0.6855 (100)	0.3339 (48.70)	0.3516 (51.30)
1974-75	0.7298 (100)	0.2737 (37.5)	0.4561 (62.5)
1976-77	0.7787 (100)	0.27378 (35.15)	0.5049 (64.83)

(---) Indicates Percentage

SOURCE: The decomposition analysis is based on the data from Appendix Tables 41 through 55.

TABLE 14

THE DECOMPOSITION OF OVERALL
INCOME INEQUALITY IN IRAN
BY THEIL PROCEDURE

Year	(nits)		
	Overall Income Inequality Index	Income Inequality Index Between Rural and Urban Areas	Income Inequality Index Within Rural and Urban Areas
1970-71	0.549 (100)	0.1944 (35.)	0.3546 (65.)
1971-72	0.4157 (100)	0.0599 (14.40)	0.3558 (85.60)
1972-73	0.5188 (100)	0.2094 (40.36)	0.3094 (59.64)
1973-74	0.5581 (100)	0.1925 (34.5)	0.3656 (65.5)
1974-75	0.5171 (100)	0.0673 (13.01)	0.4498 (86.99)
1976-77	0.6031 (100)	0.1816 (30.1)	0.4215 (69.9)

(---) Indicates Percentage

SOURCE: The decomposition analysis is based on the data from Appendix Tables 41 through 55.

conclusive relationship between the national economic development and the pattern of income inequality in terms of income convergence or divergence. Overall, they are pessimistic, on several grounds, concerning the elimination of regional income inequalities in less developed countries. They contend that the less developed countries will never achieve the same level of development that present advanced countries enjoy and that the regional income inequality in less developed countries is greater than that in the present advanced countries in their early stages of economic development.

Measurement of Regional Income Inequality

In most of these studies, the weighted coefficient of variation has been adopted as an appropriate measure of income disparity among different regions of a country. The statistical expression of this measure is

$$V_w = \frac{\sqrt{\sum_i (Y_i - \bar{Y})^2 \frac{N_i}{N}}}{\bar{Y}} \quad 0 \leq V_w \leq 1$$

where V_w denotes the weighted coefficient of variation, Y_i is the average per capita income in region (i), $\frac{N_i}{N}$ is the proportion of population in region

i, $\bar{Y}$ is the overall per capita income in a country. Higher V_w indicates more regional income divergence within a country.

Another measure is the weighted Gini Coefficient (G_w) which can be stated as:⁶³

$$G_w = \frac{1}{2} \sum_{j=1}^T \left| \frac{Y_j}{Y_t} - \frac{AP_j}{P_t} \right| \quad (7)$$

T = number of regions

⁶³David M. Smith, Human Geography: A Welfare Approach, (London: Edward Arnold Publisher, 1977), pp. 132-137.

In this formula, Y_j is the per capita income of region (j), (Y_t) is national per capita income, AP_j is adjusted population in region (j) which is derived from $AP_j = (P_j)(D_j)$. In this formula, P_j is population of region (j), (D_j) is the coefficient of deprivation⁶⁴ which depends on the natural, educational, health and industrial conditions of the region j. (P_t) in formula (7) is the summation of (AP_j) .

The Data

The statistical data concerning the per capita household expenditures in urban areas in 22 provinces of Iran have been collected from that annual reports of urban household budgets by the Statistical Center of Iran for the years 1971-1974 and 1977-1978. The per capita household expenditures are regarded as a close substitution for the per capita income.

Empirical Findings

V_w and G_w have been estimated for Iran for years 1971-1974 and 1977-1978 as tabulated in Table 15. With respect to values of both $\hat{V}_w$ and $\hat{G}_w$, the degree of the regional income inequality has not been high. $\hat{V}_w$ and $\hat{G}_w$ have not fluctuated significantly for 1971-1978. The number of years that the regional inequality indices have been calculated is insufficient to reject or accept Williamson's hypothesis.

⁶⁴See David M. Smith, p. 133. In this methodology, equality is based on deservedness which is defined by David M. Smith as "equality of treatment in the same circumstances where the circumstances justify different quantity." So D_j is very subjective and depends upon the value judgment of society about deservedness and the degree of deprivation of region (j).

TABLE 15
ESTIMATED REGIONAL INCOME INEQUALITY INDICES FOR IRAN

Year	Weighted Coefficient of Variation (V_w)	Weighted Gini Coefficient (G_w)
1971-1972	0.320	0.321
1972-1973	0.292	0.329
1973-1974	0.313	0.3344
1977-1978	0.194	0.267

SOURCE: The estimations are based on the data derived from The Survey of Urban Household Budget for the years 1971-1974 and 1977-1978.

Conclusion

This chapter has estimated the sources of income inequality: income variability within rural and urban areas, between rural and urban areas, and among the different regions of Iran. The Kakwani and Podder Model is applied as a special approach for estimation of the Lorenz Curve and associated income inequality indices, the Gini Coefficient and the relative mean deviation, and their variances within urban and rural areas. The fluctuations of the Gini Coefficient and the relative mean deviation in the urban areas during the period 1969-78, and in the rural areas during the period 1969-77 show no marginal reduction in the degree of income inequality. The estimations of the Atkinson inequality index (Tables 12 and 13) indicate that the overall income inequality of the Iranian economy were augmented from 1970 to 1977. As a result, the evidence for Iran supports the hypothesis of the previous chapter that in the process of economic development, there is a trade-off between economic growth and income equality.

Three decomposition approaches: the analysis of variance, the Atkinson inequality index, and the Theil decomposition are used to test the significance of income variations between rural and urban areas. All three decomposition analysis indicate that the contribution of income variations between urban and rural areas to overall income inequality was not significant during the period 1970-77.

The weighted coefficient of variation and the weighted Gini Coefficient as indicators of regional income inequality are not high for the years 1971-78. This time period is insufficient for adequate assessment

of the accuracy of Williamson's hypothesis.

In summary, it appears that income inequality within rural and urban areas has contributed more significantly to the overall income inequality than other sources of income inequality.

CHAPTER IV

THE RELATIONSHIP BETWEEN CLASS AND INCOME DISTRIBUTION IN IRAN

Income inequality may be conceptualized from two perspectives: the concentration of income in different income brackets and income variations derived from the ownership of productive factors. Concentration of income within brackets was analyzed in the previous chapter. The present chapter examines income derived from ownership of productive factors.

For this purpose, a definition of class from an economic point of view and an exploration of class structure in Iran, mainly in the years preceding the Iranian revolution of 1978-79 are essential.

In a macro approach, the distribution of national income between the two main classes, the wage earning class and the property owning class, and trends of relative income share of each class in the national income of Iran during 1966-1976 are investigated.

In a micro approach, overall income inequality is analyzed according to income source by household (e.g., wages, salaries, and property incomes) by application of the Gini decomposition method.

The last section of this chapter touches briefly on labor organizations in Iran and their impact on the well-being of workers.

The Concept of Class. The concept of class can be interpreted as follows: (1) Gradational concept of class. This is a quantitative approach to class definition. According to this concept, the households in a society are stratified into income brackets in ascending order.⁶⁵ Then, the income brackets can be identified as upper, upper middle, middle, lower middle, and lower income classes. The classification of households according to income does not have any underlying economic justification. This concept of class was used intensively in the previous chapter. (2) Relational concept of class. This concept is vital to the issues of this chapter. Classes can be defined only according to their social relationships with other classes.⁶⁶ Classes can be determined by their social relationships within the market. For instance, the sellers of labor are the working class, and the buyers are the capitalist class. The conflict between these two classes can be considered as a matter of bargaining over wage rates.

According to Marx, classes are identified by their social relationships within the production process, e.g., the working class is identified only in its productive relationship with the capitalist class. This relationship is contradictory, an indication of antagonism between these two classes.⁶⁷

This contradictory relationship posits the exploitation and

⁶⁵Erik O. Wright, Class Structure and Income Determination (New York: Academic Press, 1979), pp. 5-6.

⁶⁶Ibid., pp. 6-18.

⁶⁷Ibid.

subjugation of the proletariat or working class by the bourgeoisie or capitalist class. The bourgeoisie possesses the means of production and controls labor power while the proletariat sells its labor power to the capitalist class. Between the bourgeoisie and proletariat, exists another class composed of small, self-employed producers with no control over the labor power of others but which possesses its own means of production. Marx termed this class the petty bourgeoisie.^{68,69}

Marxist theory differentiates between the value of the labor power and the labor hours which a worker actually works. The wage a capitalist pays to the worker is equivalent to the value of the labor power which is necessary for a worker to perpetuate his work and maintain his family. The difference between the value of the actual amount of labor hours and the value of the labor power determines the surplus value which is appropriated by the capitalist. The amount of this surplus value reflects the exploitation of the worker by the capitalist. This surplus value has a significant role in the accumulation of capital and may be considered as a major factor of income inequality in the capitalistic economy. This surplus value is the source of rent, interest, and profit for the capitalist. Denoting the national income by (Y), value of the labor power (variable capital) by (V), and the constant capital whose value is transferred to output in the period of production by (C), and surplus value

⁶⁸Ibid., pp. 25-28

⁶⁹The Marxist terminology of bourgeoisie, petty bourgeoisie, and proletariat class is frequently avoided in some political economy literature and is simply replaced by the terms upper, middle, and lower income class. However, these terms then have their own special meanings which are based on the strict Marxian interpretations which were just mentioned and do not have any meaning similar to the gradational concept of class.

by (S), then, $Y = C+V+S$.⁷⁰ Here, the value of the labor power indicates the amount of wages and salaries in the economy. Consequently, there is a conflict of interests between these classes to increase their shares (in terms of (V) and (S)) of the national income.

In general, the two classes, laboring and property owning, can be considered as the main economic, political, and social forces of the society. These classes have always had a conflict of interest concerning the distribution of national income, assuming that the total output of society is produced by two factors, labor and capital. Each class attempts to receive a higher share of the aggregate output through its own collective action, the laboring class by organizing the workers within unions and syndicates, and the propertied class by political participation.

The Class Structure of Iran. In Iranian economic history, before the agrarian reforms of the early sixties, the upper income class of Iran was identified mainly as consisting of feudalistic aristocrats, including big landholders, the royal family, tribal nobility, church representatives, and a few industrial entrepreneurs. The strength of the upper income class was not limited to economic aspects, but in fact it also possessed political and social power.

The Iranian agrarian reforms and increased oil revenue rapidly accelerated the transformation of Iran from a closed feudal system to a free enterprise system, where the role of the feudalists was substantially reduced. A new upper income class emerged, which was mainly dominated by

⁷⁰ Meghnad Desai, Marxian Economics (New Jersey: Rowman and Littlefield Publisher, 1979), pp. 39-46.

the industrial aristocrats. The former landlords simply transferred their capital from the agricultural sector to the industrial sector and changed their status to industrial entrepreneurs. Also, many petty bourgeoisie became a part of the industrial elite. Other main components of the upper income class were the royal family, financiers, merchants, clergy, and foreign investors.⁷¹

The working class of Iran was constituted of industrial and agricultural workers. The rapid industrialization of Iran in recent years was accompanied by a growing number of industrial workers in the urban areas. Most of these urban industrial workers were involved in heavy and light manufacturing industries and construction. Moreover, the land reforms in Iran have changed the status of many farmers from landholding peasants to agricultural landless workers. The main industries in rural areas were handicrafts which were located within the rural families and which used family workers. Another component of the lower income class was the masses of the tribes which lived under the worst conditions of life. The self-employed workers whose standard of living was near the subsistence level were another component of this class.⁷²

The emergence of the middle income class is a recent phenomenon in the economic development of Iran. In fact, the increased public expenditures as a result of the increased oil revenue have expanded the government bureaucrats and the service sector which have been the main

⁷¹James A. Bill, "The Social and Economic Foundations of Power in Contemporary Iran," Middle East Journal (Fall 1963):400-418.

⁷²Ibid.

source of the growing middle income class. The main component of this class is the self-employed entrepreneurs, mainly engaged in commercial and industrial sectors. Another component of this class is the bureaucratic intelligentsia whose economic position depends upon their skills and human capital. This group is not limited to the government technocrats, but also includes the bureaucratic employees in industrial and commercial activities.⁷³ Another part of this middle income class is the median landholder and peasant proprietor in the rural areas. The pyramid version of the class configuration in Iran is presented in Fig. 3. The three main classes are shown in detail.⁷⁴

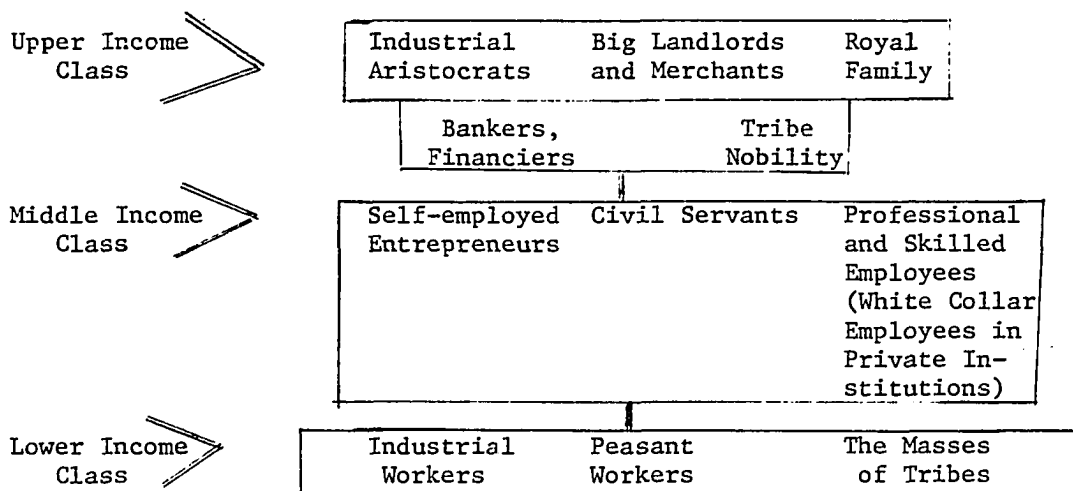


Fig. 3 - The Class Configuration in Iran

⁷³James A. Bill, The Politics of Iran: Groups, Classes, and Modernization (Columbus: Charles E. Merrill Publishing Company, 1972), pp. 53-105.

⁷⁴Ibid., p. 8.

Distribution of National Income by Factor Share in Iran, Macro Approach

The Relationship Between Economic Development and
Factor Income Share

Kuznets distinguishes three different sources of income:⁷⁵

- (1) compensation of the employees (wages and salaries in cash and kind),
- (2) income from unincorporated enterprises, e.g., income from independent businesses, (3) income from financial assets, e.g., interests from bonds and rent from land.

According to Kuznets, both time series and cross section data suggest that there is a positive relationship between the employee's share of national income and the level of per capita income. In contrast, the entrepreneur's share of the national income has been a decreasing function of the per capita income. The share of income derived from assets does not show any correlation with per capita income.

In most advanced Western countries, wages and salaries constitute a substantial part of the GNP, but in less developed countries, this share is not as significant. For instance, in 1968 the share of wages and salaries was 75 per cent of the GNP in the United States, while in the same year, the same share was 40 per cent in some of the Latin American countries.⁷⁶ In advanced countries, the accumulation of capital retards the rate of return on the capital. So, the income share of capital does not increase as fast

⁷⁵Simon Kuznets, "Distribution of National Income by Factor Shares," *Economic Development and Cultural Change* VII (April 1959):1-56.

⁷⁶Clarence Zuvekas, Jr., Economic Development, p. 276.

as does national income.

In general, based on historical evidence, it may be hypothesized that in the course of economic development, the share of labor in national income increases and, conversely, the share of capital diminishes. It is speculated that a greater share of national income for employees is associated with more equitable distribution of income since wealth as a source of the property income is concentrated.⁷⁷ The following theoretical framework demonstrates how increasing the income share of labor improves equalization of income for the entire economy.

A Theoretical Framework.⁷⁸ Consider an economy with two main productive factors, capital (K) and labor (L). Let G_y be the overall income Gini Coefficient; let G_π and G_w be the Gini Coefficients of the capital and labor income across different income brackets; let ψ_π and ψ_w be the average income shares of the capital and labor. Then,

$$G_y = \psi_\pi G_\pi + \psi_w G_w,$$

$$\psi_w + \psi_\pi = 1$$

So, G_y is a weighted average of the factor Gini coefficients.

The change of (G_y) in the process of development can be stated as

$$\frac{dG_y}{dt} = (\psi_\pi (G_w - G_\pi) \frac{d\psi_w}{dt}) / \psi_w + \psi_\pi \frac{dG_\pi}{dt} + \psi_w \frac{dG_w}{dt}$$

Functional Dis-
tributional Effect

Factor Gini
Effect

⁷⁷ Ibid.

⁷⁸ John C. H. Fei, Gustav Ranis, and Shirley W. Kuo, Growth and the Family Distribution of Income by Factor Component: The Case of Taiwan, Center discussion paper no. 223 (Yale University: Economic Growth Center, March 1975), pp. 15-17.

The overall change in G_y over time can be attributed to the change in the distributive shares of capital and labor and to the change in factor Ginis. Under the assumption that $G_\pi > G_w$, ceteris paribus, the functional distributional effect has a negative impact on the overall Gini if the income share of labor increases during the process of economic development. The improvement of the labor share partially depends on the strength of labor unions in the economy. Moreover, if other things are constant, any decrease in G_w and G_π induces a reduction in G_y . A widespread educational program which mainly concentrates in skill training for lower income households, and a wealth redistribution may be necessary to reduce G_π and G_w .

Capital and Labor Shares in the National Income of Iran

The Middle Eastern oil exporting countries can be considered as rentier states.⁷⁹ The revenues derived from oil exports are external rents which are paid by the oil importing countries. More specifically, it can be said from the economic point of view that land in these countries is more productive than that in the non-oil producing countries because of existing petroleum resources. Consequently, there is a productivity differential between the oil and the non-oil producing countries which results in rent for the oil endowed land. Moreover, the oil sector does not employ large numbers of people in Iran. The oil industry employs about 41,000⁸⁰ persons

⁷⁹ H. Mahdavy, "The Patterns and Problems of Economic Development in Rentier States: The Case of Iran," *Studies in the Economic History of the Middle East*, ed. M. A. Cook (London: Oxford University Press, 1970), pp. 428-467.

⁸⁰ Fred Halliday, Iran: Dictatorship and Development (New York: Penguin Books, 1979), p. 197.

out of a total labor force of 10.6 million in 1977.⁸¹ For all of these reasons, it is more appropriate to call Iran a rentier state.

The decade of the 1970s was a turning point in the economy of Iran in terms of oil revenue and production, as mentioned in Chapter II. However, the fundamental question is how significantly the recycling of this external rent through the domestic economy impacted the shares of labor and capital in the national income.

In a macro approach, according to the orthodox theory of the functional distribution of income, the aggregate income is simply distributed among the factors of production, labor (L) and capital (K). The rewards of the property owning class are profit, interest, and rent. The labor earnings are wages and salaries.

The theory of functional distribution of income is based on the following assumptions:⁸²

1 - The determination of the distributive shares of capital and labor is considered a part of the overall equilibrium, especially of prices and quantities, in the perfectly competitive system.

2 - The aggregate output of society is produced by two homogeneous factors, capital (K) and labor (L), which are in fixed supply. Then the aggregate production function of society is presented as $F = F(K, L)$ which is a neoclassical model with certain properties, e.g., constant

⁸¹ Ibid., p. 176.

⁸²

A. B. Atkinson, The Economics of Inequality, pp. 168-174.

returns to scale, diminishing marginal productivity of one factor, while maintaining the other factor constant and substitutability between capital and labor.

3 - Then, in a perfectly competitive equilibrium, the rewards of capital (r) and labor (w) are determined by their value marginal products.

4 - The constant returns to scale guarantee that the aggregate output is exhausted entirely by the contribution of capital and labor.

This means,

$$Y = \text{value of aggregate output of economy} = (K)(r) + (L)(w)$$

The Method of Estimating the Relative Shares of Capital and Labor in the National Income of Iran. The estimation of the relative shares of labor and capital in the national income of Iran covers the period of 1966-1976. Per capita consumption of households in both the rural and urban areas of Iran for the years 1966-1976 is based on a price index with a base year 1965. Assuming a marginal propensity to consume of 94 percent,⁸³ it is possible to estimate per household average incomes which can be considered approximate values for the wage rates of the urban and rural populations. Then, from the figures for the economically active populations during 1966-1976 for both the rural and urban areas, it is easy to estimate the income share of wage-receiving employees. Having estimated the income share of labor ($\hat{R}_L$), the income share of capital ($\hat{R}_K$) is derived simply from $\hat{R}_K = Y - \hat{R}_L$, where (Y) is the national income based on a price index with a base year of 1965. The relative shares of capital ($\hat{\pi}_K = \frac{\hat{R}_K}{Y}$) and

⁸³ M. Mehdizadeh, An Empirical Evaluation of Alternative Consumption Hypotheses in Less Developed Countries: A Case Study of Iran. pp. 53-55.

labor ($\hat{\pi}_L = \frac{\hat{R}_L}{Y}$) in national income during 1966-1976 are presented in Table 16. The results shown in Table 16 are interpreted as follows:

Empirical Results. The relative share of labor diminished from 25.1 per cent in 1966 to 17.11 per cent in 1976. Over the same period, the relative capital share rose from 74.9 to 82.89. Fluctuations in the relative income shares of capital and labor coincided with the increased oil revenues of Iran during the early 1970s. The argument can be made that increased oil revenue has contributed to the concentration of income and wealth among the upper income class (capitalists) and conversely, has caused the deterioration of the relative economic position of the lower income class (workers) in the rentier economy of Iran. There is some justification for this argument. As presented in Chapter II, the urban areas were the main beneficiaries of the dualistic growth of the fragmented economy of Iran during 1966-76 while the rural areas gained little, if anything. Even within urban areas, the commercial and industrial units which were largely concentrated in a few monopolized upper class hands were mostly benefited. For instance, most of the large corporations were in the possession of the royal family.⁸⁴ Also beneficiaries were government employees whose annual wages and salaries were 50 per cent higher than those of the private sector. It is widely believed that during the period of the oil boom of the 1970s characterized by high inflation, it was the commercial and industrial entrepreneurs along side the civil servants in the service sector which substantially benefited from the domestic economy, e.g., via

⁸⁴The Pahlavi Foundation, the largest commercial and industrial institution, controlled the majority of industrial and commercial units as well as banks in Iran.

the multiplier effects of government domestic spending of petrodollars. Consequently, it can be concluded that the increased oil revenues of the 70s increased the relative income share of the capitalist class, mostly concentrated in the upper income class in urban areas, and caused the income share of the working class, mostly concentrated in the lower income class (including the industrial as well as rural workers), to deteriorate.

The relative income shares of labor in the different sectors of the economy during 1972-1975, as shown in Tables 17 through 19, confirm the same trend.⁸⁵ In the industrial sector, the relative income share of labor fell from 40.8 in 1972 to 37.5 in 1975. In the agricultural sector, the labor income share stabilized around 10 per cent during the same period. In the oil sector, the labor income share diminished from 4 per cent in 1972 to 1.7 per cent in 1975. The relative income share of labor in the private and public sectors did not increase during the period under review.

Moreover, according to the statistical data, in 1976 the entrepreneurial class constituted 2.1 per cent of the total economically active population of Iran.⁸⁶ This fact perhaps implies that 2.1 per cent of the people received 82.89 per cent of the national income while the remaining 79.9 per cent retained 17.11 per cent of the total income. The trend of

⁸⁵ Central Bank of Iran, Annual Report and Balance Sheet (1974) (Tehran: Central Bank of Iran, 1975), pp. 18-30.

⁸⁶ Statistical Center of Iran, National Census of Population and Housing (1976), Publication no. 186 (Tehran: Statistical Center of Iran, 1981), p. 41.

TABLE 16

ESTIMATION OF THE SHARES OF CAPITAL AND LABOR IN
THE NATIONAL INCOME OF IRAN (1966-1977)

Year	National Income (at Constant 1959 Prices: Billion Rials)	Labor Share ($\hat{\pi}_L$)	Capital Share ($\hat{\pi}_K$)
1966-1967	398.7	(25.1)	(74.9)
1967-1968	443.4	(24.1)	(75.9)
1968-1969	492.0	(24.24)	(75.75)
1969-1970	537.8	(24.15)	(75.85)
1970-1971	598.0	(23.87)	(76.13)
1971-1972	676.3	(21.11)	(78.89)
1972-1973	1097.8	(13.71)	(86.28)
1973-1974	1361.2	(13.10)	(86.89)
1974-1975	1612.7	(12.33)	(87.67)
1975-1976	1465.5	(15.38)	(84.62)
1976-1977	1463.5	(17.11)	(82.89)

(-----) Indicates Percentage

SOURCES: "National Income of Iran, 1952-72" (Tehran: Central Bank of Iran, 1974).

"Annual Report and Balance Sheet of Central Bank of Iran" (Tehran: Central Bank of Iran), issues of 1970s, Tables 2 and 32.

TABLE 17

THE INCOME SHARE OF PRODUCTIVE FACTORS IN DIFFERENT
ECONOMIC SECTORS OF IRAN (1972-1975)

(Per Cent)

Sector	Year	Wages and Salaries	Rents	Interests	Depreciation	Profits
Industrial	1972-1973	40.8	13.5	3.3	14.8	27.6
	1973-1974	35.3	14.3	3.4	13.8	33.2
	1974-1975	37.5	16.6	3.9	13.6	28.4
Agricultural	1972-1973	10.3	17.4	4.2	4.7	63.4
	1973-1974	10.3	17.4	4.7	4.7	62.9
	1974-1975	10.6	17.1	4.5	4.2	63.6
Oil	1972-1973	4.0	0.1	0.5	4.0	91.4
	1973-1974	1.8	0.1	0.3	1.4	96.4
	1974-1975	1.7	0.1	0.3	1.4	96.5

SOURCE: Central Bank of Iran, Annual Report and Balance Sheet of the Central Bank, 1974, (Tehran: Central Bank of Iran), 1974, pp. 21-22.

TABLE 18

SHARE OF PRODUCTIVE FACTORS IN DOMESTIC
VALUE ADDED (NATIONAL INCOME)

(Per Cent)

Share	With Oil			Without Oil		
	(1972-1973)	(1973-1974)	(1974-1975)	(1972-1973)	(1973-1974)	(1974-1975)
Wages and Salaries	28.1	20.8	18.4	38.6	34.4	35.1
Rents	12.0	12.1	10.9	16.4	19.9	20.7
Interests	6.8	5.6	4.1	9.4	9.1	7.8
Profits	53.1	61.5	66.6	35.6	36.6	36.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Central Bank of Iran, Annual Report and Balance Sheet of the Central Bank, 1974, (Tehran: Central Bank of Iran), 1974, p. 20.

TABLE 19

DISTRIBUTION OF VALUE ADDED IN INDUSTRIES AND
MINES BY FACTORS OF PRODUCTION

(Per Cent)									
Share \ Sector	(1972-1973)			(1973-1974)			(1974-1975)		
	Private	Public	Total	Private	Public	Total	Private	Public	Total
Wages and Salaries	28.2	61.0	30.3	22.3	59.5	25.0	28.5	49.7	30.4
Rents	20.4	2.4	19.3	20.7	0.9	19.3	24.4	0.9	22.3
Interests	3.3	3.9	3.3	3.4	5.0	3.5	3.7	5.9	3.9
Depreciations	16.9	30.3	17.7	14.6	27.6	15.5	14.1	23.1	14.9
Profits	31.2	24.	29.4	39.0	7.0	36.7	29.3	20.4	28.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: Central Bank of Iran, Annual Report and Balance Sheet of the Central Bank, 1974, (Tehran: Central Bank of Iran), 1974, p. 23.

the relative share of labor income in Iran is in direct opposition to trends in both developed and less developed countries. The percentage share of employee compensation (wages and salaries) in net national product (NNP) in the industrially advanced countries increased between 1960 and 1973. These wages and salaries constituted a substantial portion of NNP, around 70 per cent in 1973.⁸⁷ In some less developed countries such as India, the relative labor income share of the overall domestic value added changed in favor of labor from 60.9 per cent in 1950 to 73.0 per cent in 1975.⁸⁸

In conclusion, the empirical evidence indicates that the relative share of labor in national income shrank while at the same time the relative share of the entrepreneurial class augmented during the period of 1966-1976, a period marked by an impressive economic growth rate. This evidence sharply contrasts with Kuznets' empirical results which emphasize an increasing relative labor income share in the process of economic development.

Decomposition of Overall Income Inequality of Iran by Income Factors (The Gini Decomposition Approach)⁸⁹, Micro Approach

The Gini decomposition measure is adopted to partition overall income inequality into factor income inequalities across the different income brackets of households. According to the Gini decomposition approach,

⁸⁷Fanny Ginor, Socio-Economic Disparities in Israel, p. 67.

⁸⁸Uma Datta Roy Choudhury, "Income Distribution and Economic Development in India Since 1950-51," p. 155.

⁸⁹Gary S. Fields, Poverty, Inequality, and Development, pp. 101-103.

the overall income inequality (G) is a weighted average of the pseudo-Gini coefficients of the different income factors ($\bar{G}_i$).

$$(1) \quad G = \bar{G}_1\psi_1 + \bar{G}_2\psi_2 + \dots + \bar{G}_i\psi_i + \dots + \bar{G}_k\psi_k$$

$$i = 1, \dots, k$$

where ψ_i is the average income share of factor (i) across the different income households, ($\bar{G}_i$) is the pseudo-Gini coefficient for income factor (i) which is derived from $\bar{G}_i = G_i \cdot R_i$. In this formula, G_i is the Gini coefficient for factor (i) and R_i is relative correlation coefficient which is defined as

$$R_i = \frac{\text{Cor}(Y_i, P)}{\text{Cor}(Y_i, P_i)}$$

where $\text{Cor}(Y_i, P)$ - the coefficient of correlation between income factor (i) and the total income rank and $\text{Cor}(Y_i, P_i)$ - the coefficient of correlation between the income factor and income factor rank. By substitution R_i and $\bar{G}_i$ in equation 1 and dividing both sides of the equation by G, the following equation results.

$$1 = \psi_1 \frac{G_1 \cdot \text{Cor}(Y_1, P)}{G \cdot \text{Cor}(Y_1, P_1)} + \psi_2 \frac{G_2 \cdot \text{Cor}(Y_2, P)}{G \cdot \text{Cor}(Y_2, P_2)} \dots$$

Each term on the right hand side of this equation is an indicator of the effect of variation in the factor income (i) on overall income inequality which is known as factor inequality weight (FIW_i). Then the above equation may be rewritten as:

$$1 = \text{FIW}_1 + \text{FIW}_2 + \dots + \text{FIW}_i + \dots$$

Data and Method of Estimation

The data on income sources in the different income brackets of

urban households were collected from several issues of Annual Report on the Urban Household Budget by the Central Bank of Iran. The data covers the period 1973-1979. Household income includes all sources of income (cash and kind) grouped into four main categories:

- 1 - wages and salaries
- 2 - income from private businesses
- 3 - income from property consisting of profits, interest, and rent (including imputed rent of owner-occupied housing)
- 4 - other non-monetarized income of the household not included in the other three categories, including transfer income from the government.

The Gini coefficient (G_i) for the different sources of income is estimated by application of the Kakwani and Podder model. The coefficients of the Lorenz Curve are estimated by application of OLS. The t-statistics in parentheses in Table 20 indicate that almost all of the coefficients of the Lorenz Curve are statistically significant at one per cent level.

Empirical Results

The overall empirical results are presented in Tables 20 and 21. In Table 20, the Lorenz Curve Coefficient and its associated Gini Coefficient for different sources of income in urban areas of Iran for the years 1973-1979 are tabulated. Using the estimated values of G_i in Table 20, $\bar{G}_i$ and FIW_i for different income sources are estimated. According to data in Table 21, the variations of wages and salaries across different income brackets contributed more than 40 per cent of the overall income inequality during the period 1973-1979. The weight for the share of overall property income

in income inequality was more than 50 per cent for the same period, if it is assumed that overall property income includes income from private, independent professions. Consequently, the source more responsible for income inequality seems to be total property income.

Labor Unions in Iran

In a previous section of this chapter, statistical evidence indicated that the income share of labor deteriorated despite the spectacular economic growth rate of Iran. This result contrasts with the experiences of advanced industrial countries. The possible influence of the trade unions is a factor not yet discussed. Labor union as a body through which workers can strike to raise wages and salaries and improve their economic position have been conceptualized by economists from Karl Marx to John Mitchell.⁹⁰ Furthermore, the earning function of individuals depends upon not only the quality of human capital and past experience of the individuals, but, also, on the degree of unionization of the occupation.

In the early twentieth century, about 90 per cent of the economically active population of Iran was mainly engaged in agricultural activities in the rural areas where most of the traditional handicrafts were located.⁹¹ After the Second World War, the expansion of industry became one of the key economic goals of the less developed countries. In Iran, the recycling of oil revenues accelerated rapid industrialization. Many

⁹⁰Orme W. Phelps, Introduction to Labor Economics (New York: McGraw-Hill Book Company, 1967), pp. 214-234.

⁹¹Fred Halliday, "Trade Unions," MERIP Reports, no. 71, p. 7.

TABLE 20

THE ESTIMATION OF THE LORENZ CURVE COEFFICIENTS AND GINI
INEQUALITY INDICES OF THE INCOME SOURCES FOR THE
URBAN AREAS OF IRAN DURING 1973-1979

Year	Sources of Income	Lorenz Curve Coefficients			Gini Co- efficients $\hat{G}_1$
		$\hat{a}' = \log a$	$\hat{\alpha}$	$\hat{\beta}$	
1973- 1974	1	-0.777 (-44.54)*	0.940 (91.17)	0.963 (260.61)	0.450
	2	-0.597 (-15.03)	1.027 (43.62)	0.976 (99.52)	0.518
	3	-0.588 (-71.23)	0.998 (206.40)	0.975 (478.36)	0.531
	4	-0.978 (-8.45)	1.254 (16.55)	0.948 (32.09)	0.326
1974- 1975	1	-0.830 (-83.87)	0.943 (94.96)	0.959 (397.15)	0.431
	2	-0.686 (-33.69)	1.007 (50.14)	0.963 (153.58)	0.481
	3	-0.649 (-54.93)	1.000 (85.58)	0.965 (381.24)	0.502
	4	-0.967 (-34.07)	1.095 (36.00)	0.936 (104.31)	0.354
1975- 1976	1	-0.748 (-64.11)	0.967 (100.19)	0.956 (275.85)	0.463
	2	-0.830 (-38.91)	0.913 (51.89)	0.944 (147.62)	0.440
	3	-0.663 (-28.10)	1.021 (52.13)	0.966 (139.03)	0.489
	4	-0.887 (-45.58)	1.191 (67.33)	0.950 (161.71)	0.366
1978- 1979	1	-0.897 (-72.92)	0.893 (148.13)	0.938 (287.4)	0.417
	2	-1.137 (-46.90)	0.852 (70.41)	0.912 (139.51)	0.340
	3	-0.909 (-63.33)	0.932 (130.16)	0.940 (246.85)	0.404
	4	-1.273 (-18.65)	1.102 (29.60)	0.907 (48.93)	0.264

*t-statistics in parentheses significant at 1% level.

SOURCE: Central Bank of Iran, The Survey of Urban Household Budget,
issues 1973 through 1979.

TABLE 21

THE ESTIMATION OF THE PSEUDO-GINI COEFFICIENTS AND FACTOR INEQUALITY
WEIGHTS OF THE INCOME SOURCES FOR THE URBAN AREAS
OF IRAN DURING 1973-1979

Year	Sources of Income	Pseudo-Gini Coefficient ($\hat{G}_i$)	Factor Inequality Weight ($\hat{FIW}_i$)	Overall Gini Coefficient ($\hat{G}$)
1973- 1974	1	0.458	(42.9)	0.4802
	2	0.518	(27.1)	
	3	0.531	(27.0)	
	4	0.303	(3.0)	
1974- 1975	1	0.431	(41.3)	0.458
	2	0.480	(28.4)	
	3	0.502	(26.9)	
	4	0.348	(3.4)	
1975- 1976	1	0.440	(46.5)	0.456
	2	0.436	(24.4)	
	3	0.489	(25.2)	
	4	0.360	(3.9)	
1978- 1979	1	0.4157	(47.6)	0.3813
	2	0.3359	(21.0)	
	3	0.40198	(27.2)	
	4	0.2416	(4.2)	

(-----) Indicates Percentage

factories were established in the urban areas. The number of industrial units with 10 or more employees increased from 1,518 in 1960 to 6,626 in 1972.⁹²

The industrialization of Iran was accompanied by a significant shift in the composition of the labor force. There was a massive migration from areas of labor surplus in the agricultural sector to the industrial centers of Iran. The concentration of the workers in industrial establishments rose from 800,000 in 1956 to more than 2.5 million in 1976.⁹³

At the same time, workers organized labor unions in the various industries to protect their interests and welfare. The most outstanding period of the labor movement was between the First and Second World Wars when well organized industrial labor unions emerged. In 1944, the first autonomous United Central Council of the Unified Trade Unions of Workers (CCUTU) was established with many branches.⁹⁴ For instance, in 1946 there were 90,000 members in the oil fields of Southern Iran and 50,000 in the factories of Tehran.⁹⁵ The members of CCUTU staged major strikes to gain higher wages and better working conditions. From 1951-1953, there were 200 strikes by CCUTU members over economic demands.⁹⁶ In

⁹²Farhad Kazemi, Poverty and Revolution in Iran: The Migrant Poor, Urban Marginality, and Politics (New York: New York University Press, 1980), p. 105.

⁹³Ibid.

⁹⁴Organization of Fedayeene-Khalq, Trade Unions of Iran (Iran: Organization of Fedayeene-Khalq of Iran, 1978).

⁹⁵Fred Halliday, "Trade Unions, p. 8.

⁹⁶Ibid.

1953, all autonomous union activities of the CCUTU were abolished by the government.⁹⁷

In the 1960s, all trade unions were regulated and controlled by direct government intervention. The labor unions were so fragmented that they could not be considered an effective factor in the determination of wages and working conditions. Table 22 presents data concerning the government-controlled trade unions in different industries. According to the new labor law, the unions did not have any right to strike, and their power in collective bargaining and gaining funds for unemployment insurance was very limited.⁹⁸

Since 1973, with increasing Iranian oil revenue, there has been an increasing number of strikes over economic demands. For instance, in 1975, there were 30 strikes.⁹⁹ The main economic demands of all of these strikes were for higher wages corresponding to the inflation rate or for improvement in the welfare of the workers. The working class in Iran was demanding a greater share of the national income which was being augmented by increasing oil revenues. However, the non-existent, weak, or non-autonomous labor unions were not able to negotiate a minimum wage policy.

The labor market does not function in Iran as smoothly as it does in the developed countries. In Iran, the imperfection in the labor market has led to the wage differentials among males, females, and children.

⁹⁷In August, 1953, a military coup returned the Shah to power.

⁹⁸Fred Halliday, "Trade Unions," pp. 10-11.

⁹⁹Ibid., p. 12

TABLE 22

STATE-RUN TRADES UNIONS 1971

Kind of Activity	Number of Organizations	
	Workers	Employer
Automobile	7	--
Metal-working	13	5
Textile	43	7
Transport	42	64
Water and Power	18	3
Leather and intestine	9	2
Oil	26	--
Chemistry	5	1
Printing	4	3
Services	56	30
Food	68	22
Abattoirs	20	--
Construction	24	10
Art, cinema and theatre	6	--
Clothing	13	3
Communication	2	--
Glass and crystal	2	1
Banks	7	--
Paper manufacturing	2	--
Health services	4	9
Carpet weaving	10	2
Miscellaneous	<u>16</u>	<u>6</u>
Total	397	168

SOURCE: United Nations, ILO Mission, Labor Legislation, Practice and Policy, working paper IX, 1973. Reported in Fred Halliday, Iran: Dictatorship and Development (New York: Penguin, 1979), p. 204.

In the majority of the small workshops, in tiny towns and rural areas, especially women and children are paid below the subsistence level of living. The enforcement of a minimum wage policy may be an effective step in improving the well-being of the Iranian workers from the equity point of view.¹⁰⁰

In addition, it should be pointed out that wage rates have not been revised often enough to maintain the real purchasing power of workers. Wages have continued to lag behind price increases.¹⁰¹

Conclusion

A consideration of class concepts from different points of view has arrived at the conclusion that the laboring and property-owning classes as the main economic forces of society have always had a conflict of interest concerning the distribution of national income. During the recent economic development of Iran three main classes have emerged: the upper income class (industrial aristocrats, landlords of great properties, the royal family), the middle income class (self-employed entrepreneurs, civil servants, professional and skilled employees), and the lower income class (industrial and peasant workers).

According to Kuznets, in the process of economic development, the relative share of employees' compensation of national income increases while the relative entrepreneurial share declines. Furthermore, through a simple

¹⁰⁰ However, the economists in the advanced countries with very well-organized labor markets argue that a minimum wage rate above the equilibrium level leads to a glut in the labor market which is not consistent with the welfare of the unemployed workers.

¹⁰¹ Mahmoud Montazer-Zohour, Economics (Tehran: University of Tehran Press, 1973), p. 262.

theoretical model, it has been demonstrated that the size of the relative income share of labor is critical in narrowing the relative income inequality.

Examination of the trends of the estimated relative income shares of labor and capital in Iran for the period 1966-76 results in the rejection of Kuznets' hypothesis. During the period under review, the oscillations of the relative income share of labor shows a downward trend and the oscillations of the relative income share of capital tend upward. It can be argued that the non-existence of autonomous labor unions in modern Iran has, to some extent, been a contributory factor in the deterioration of the well-being and the relative income share of the working class of Iran.

In a micro approach, using the Gini decomposition model, it can be concluded that the total property income variations among the different income brackets rather than wage and salary variations have been more responsible for the overall income inequality in the urban areas of Iran during 1973-79.

CHAPTER V

THE IRANIAN AGRARIAN REFORM

During the 1950s and 1960s, agrarian reform models ranging from family farms to state farms were adopted by economic planners as solutions to the stagnant agricultural sector in Middle East countries from Egypt to Syria.¹⁰² These agrarian reform models failed to accomplish the two objectives of equity and efficiency, despite the optimistic expectations in most countries of the Middle East.

An appraisal of the Iranian agrarian reform as a model for the redistribution of wealth and income is the main purpose of this chapter. The impact of the agrarian reform on the rural economy of Iran in terms of change in economic policy can be evaluated from the social welfare point of view by two basic criteria: equity and efficiency.

1. From the aspect of equity, agrarian reform mainly concerns the destruction of the old feudal mode of production, the redistribution of feudal landholdings to landless peasants, and the subsequent equitable income distribution within the villages.

2. From the viewpoint of efficiency, agrarian reform focuses

¹⁰²Robert Springliorg, "New Pattern of Agrarian Reform in the Middle East and North Africa," Middle East Journal (Spring 1977): 127-42.

on agricultural productivity. In the post-land reform period, it is expected that peasants will have economic incentives to improve the productivity of their own land since there is no longer any outside landlord to claim the fruits of their work. It is conceivable and possible that agricultural growth will accelerate. It is speculated that the per capita income of peasants will increase to match urban income levels in the long run.¹⁰³ However, massive financial and technical government assistance programs for peasants is vital for a successful land reform.¹⁰⁴ In short, successful land reform can make the rural dweller better off by increasing his relative and absolute income.

Accordingly, to understand the relationships between income inequality and economic development in Iran, it is necessary to understand the impact of Iranian land reform. As will be seen, land reform has had major repercussions on the economic structure of Iranian villages.

The Socioeconomic Structure of Iranian Villages Before the Land Reform

Before 1962, the large private landholdings which were the main characteristic of Iranian rural areas shaped social and economic relations for many years.¹⁰⁵

In each village, most of the cultivated land, more than half on

¹⁰³C. Zuvekas, Jr., Economic Development, p. 289.

¹⁰⁴Ibid.

¹⁰⁵M. Farhang, Iranian Economic Life (Tehran: Aburihan Press, 1973), p. 44

the average, had been concentrated in the hands of a few powerful, absentee landlords.¹⁰⁶ The land was cultivated by the peasants through a share-cropping system. In this mode of production, landlords through their representatives in villages assigned a specific plot of land to each peasant. The land which a peasant was allowed to retain and cultivate is called *nasaq*. At the end of each year, the crop yield from each plot was divided between the landlord and the peasant in proportion to the ownership of the factors of production. Generally, water, labor, seeds, draft animals, and land were the main contributing factors to crop production. Traditionally, the landlord was the owner of water, seed, and land, while the peasant *nasaq*-holders possessed only their own labor and oxen. Therefore, at the most, the peasant could receive only a proportion of two-fifths of the crop. The rest of the crop went to the absentee landlord.¹⁰⁷ In addition, peasants had to pay taxes in kind to the landlord for keeping sheep, chickens, and even trees. For instance, in Kurdistan, west of Iran, the number of taxes sometimes exceeded 103 types.¹⁰⁸ Furthermore, the peasant was sometimes required to work on the landlord's properties without compensation. Under this production system, the landlord extracted maximum agricultural surplus from the rural society. Nonetheless, the landlords were a major financial, managerial, technical, and marketing resource for the peasants.¹⁰⁹

¹⁰⁶ Ibid., p. 45

¹⁰⁷ D. Craig, "The Impact of Land Reform on an Iranian Village," Middle East Journal (Spring 1978):143.

¹⁰⁸ M. Farhang, Iranian Economic Life, p. 43.

¹⁰⁹ W. B. Fisher, "The Land of Iran," The Cambridge History of Iran 1 (Britain: Cambridge University Press, 1968):711.

It was usual practice for the landlord to advance payment to the peasants before time of harvest. Under these conditions, most of the peasants lived at a subsistence level of poverty.

Two main classes could be distinguished in Iranian villages: the feudalist and the peasant class.¹¹⁰ Each of these classes had sub-divisions within itself. The feudalist class was comprised of absentee landlords, the state, the crown, and wāgf¹¹¹ trustees. This class also included the small landowner who did not cultivate his own land, those who leased land from the above, and the oxen-owning nasaq-holders who hired work-teams of peasants to cultivate their nasaqs.

The peasant class included the small landholding peasant, the peasant nasaq-holder who raised crops himself and paid a share of his crop to the landlord, regular agricultural workers who worked on the nasaq on the work-teams and seasonal workers who were hired only during the busy season.¹¹²

The productive relationships of the feudal system were no longer compatible with the economic needs of the country which was developing on the path of the market oriented system. The rapid economic growth of Iran increased tremendously the demand for food in urban areas. Moreover, the expansion of domestic markets caused by the collapse of the closed

¹¹⁰N. R. Keddie, "The Iranian Village Before and After Land Reform," Journal of Contemporary History 3 (1968):74.

¹¹¹ is the church's land in Persian.

¹¹²N. R. Keddie, "The Iranian Village Before and After Land Reform," pp. 74-75.

feudalistic system was essential for stimulation of domestic industry. The old economic relationships were considered as obstacles to the economic development in the rural areas of Iran. Under the old system, the agricultural sector suffered from low investment, technology, and productivity.¹¹³ The peasants did not have an incentive to improve their productivity or use the land more efficiently, since whatever the peasant produced eventually went to the absentee landlords. In addition, the rural areas were deprived from the advantages enjoyed by urban areas such as health clinics, schools, public bathrooms, and many other public facilities.

The landlords did not pay attention to the economic needs and welfare of the peasants. For the landlords, the villages and their peasants were considered as their properties which benefited them. Any drastic change in the agrarian standard of living should have been accompanied with the collapse of this old system and land reform would be regarded as one of these changes.

Nearly 50,000 villages existed in Iran before the land reform program.¹¹⁴ The distribution of the land among the different landholders is shown in Tables 23 and 24.

According to Table 23, nearly 52 per cent of the Iranian villages (approximately 26,000 out of 50,000 villages) were owned by landlords. Each landlord owned an average of five villages. Fifty-six per cent of the cultivated land was owned by the large proprietors who individually

¹¹³Ibid., pp. 69-70.

¹¹⁴F. Halliday, Iran: Dictatorship and Development, p. 106.

possessed more than 100 hectares each (Table 24). More than half of the landowners each held more than 100 hectares of land and at least one village.

On the other hand, the permanent agricultural workers, the casual workers, and the nasaq-holders workers comprising the landless class which provided the labor for agriculture accounted for 47.5 per cent of the villagers.¹¹⁵ Of these, 14.4 per cent worked for wages and 33.1 per cent were family workers.¹¹⁶ Any egalitarian land redistribution can be effective only to the extent that change is regarding the landholding condition of the landless peasant if the basic goal is the well-being of the masses of poor peasants.

Land Reform

In Iranian land reform, two separate policies are advocated by economists.

Traditional agricultural practice, the system of farming communal open fields, by its nature is appropriate for a cooperative system of production.¹¹⁷ The cooperative farming system could benefit all productive forces, mainly landless peasant workers. This production system could have prevented the fragmentation of large landholdings into tiny enclosed plots. Under this system, a comprehensive production plan was feasible for the whole village. Theoretically, the profitability of the cooperative

¹¹⁵ N. R. Keddie, "The Iranian Village," p. 79.

¹¹⁶ Ibid.

¹¹⁷ Ibid., p. 80.

TABLE 23

LANDHOLDINGS BEFORE THE LAND REFORM IN 1962

The Landholder	Number of Villages	Percent of Villages
Large landlords (possessing more than 5 villages)	19,000	38%
Medium landlords (between 1 to 5 villages)	7,000	14%
Properties of churches controlled by religious trustees	6,000	12%
Government land properties	3,000	6%
Small land ownership and the landholding peasants	15,000	30%
	50,000	100%

SOURCE: Organization of Fedayeene-Khalq, Land Reform and Its Results, (Iran: Organization of Fedayeene-Khalq of Iran), 1972, pp. 25-29.

TABLE 24

THE DISTRIBUTION OF LAND OWNERSHIP BEFORE 1962

Type of Ownership	Percent of all Land Owned	Number of Villages	Percent of all Villages
Large proprietor (over 100 hectares)	56.0	13,569	34.43
Small proprietor	10-12	16,522	41.93
Royal Domain	10-13	812	2.06
Religious endowment	1-2	713	1.81
Tribal holdings	13.0	-	-
Public Domain	3-4	1,444	3.67
Other Holdings	-	6,346	16.10

SOURCE: W. B. Fisher, "The Land of Iran," The Cambridge History of Iran, 1 (Britain: Cambridge University Press, 1968):687.

farming system stems from two causes. First, the economies of scale used on the large mechanized cultivated lands tends to increase productivity. Second, since the peasants are the workers as well as the stockholders of the cooperatives, they have an economic incentive to try harder to raise the productivity than when they are paid by the landlords through a sharecropping system.

An alternative policy is the division of the land among a fraction of the peasants and the creation of small, inefficient family enterprises. By this policy, the distribution of land among all peasants does not take place. The title of the land simply is transmitted from the landlords to the nasaq-holders who controlled the property. In fact, there is no plan of land redistribution that provides income equality between different strata of the peasant class.

According to the first phase of the land reform of 1962, each landlord was allowed to maintain only one six-dang¹¹⁸ village or six dangs of land from different villages, and was required to sell the rest of his land to the government, receiving annual compensatory payments for 15 years.¹¹⁹ However, landlords chose to keep the most fertile land among their holdings. In addition, orchards, tea plantations, woodlands, and lands which were farmed by mechanized means and worked by daily paid workers were all exempted from the land reform. These exemptions led to the development of mechanized farms where landlords dismissed the peasants

¹¹⁸The dang is the unit measure of land in Iranian rural areas. One dang is one-sixth of a village.

¹¹⁹W. B. Fisher, "The Land of Iran," p. 693.

and began capital intensive production methods, hiring casual or daily paid peasant workers.

The government was in charge of transferring the land from the previous landlords to the peasants. Priority was given to those peasants who were nasaq-holders, land-leasers, oxen owners, or the heads of work-teams.¹²⁰ Moreover, membership in the new cooperative society was a prerequisite to receiving land. In fact, the peasant workers who accounted for nearly 50 per cent of the rural population were entirely deprived of the opportunity of receiving land by the first phase of land reform.¹²¹ Therefore, only the prosperous peasant minority could gain from this program. The price of land plus 10 per cent interest charge for loans had to be paid by the new land-owning peasants over a period of 15 years.

In the first phase of the land reform, 16,333 villages and 1,001 farms became subject to distribution, and almost 777,825 families became new owners of the land which was previously cultivated by them. However, a few dangs of each of the 16,333 villages were distributed.¹²² Conceivably, only the poorer lands of these villages, land that lacked both fertility and water, were distributed since the landlords retained the higher quality land for themselves. Furthermore, only about 30 to 40 per cent of the new land-owning peasants received two or more hectares of land,

¹²⁰F. Halliday, Iran: Dictatorship and Development, p. 110.

¹²¹Organization of Fedayeene-Khalq, Land Reform and Its Results (Iran: Organization of Fedayeene-Khalq of Iran, 1972), pp. 42-46.

¹²²Ibid. p. 44.

while the rest received very tiny plots of land. In some villages, a half dang of land would be distributed among as many as 50 peasants. In other words, each peasant owned little land, between one-half to one-third hectares.¹²³ These peasants were also accounted as new land-owners in government statistical data. Assuming that three dangs of each of the 16,333 villages were affected by the land reform, then only about 8,160 or one-sixth of all the Iranian village land has been distributed among peasants.¹²⁴ At least 50 per cent of the villages could have been subject to the reform program (Tables 25 and 26). In the process of land reform, the government has created enough loopholes for landlords to effectively avoid the reform. For instance, orchards, tea plantations and mechanized farms were exempted from distribution. In addition, some of the landlords had anticipated the reform and transferred their holdings to relatives before the land reform came into effect.

After the first phase of land reform, many villages were still in the possession of landlords. So the government added a second phase to the program. In this phase of 1964, the landlords had to distribute the rest of their lands to the peasants through one of the following schemes:

1. The landlord transfers his properties to peasants (number of peasants affected 57,226).
2. The landlord rents his land to the peasants (number of peasants affected 1,232,548).
3. The peasant nasaq-holder can own a portion of the landlord's

¹²³Ibid., p. 45.

¹²⁴Ibid., pp. 50-59.

land proportional to his share in the crop (number of peasants affected 106,580).

4. The landlord and peasants establish a farm corporation unit in which the share belonging to the landlord and each peasant is determined according to the share of each by the sharecropping system (number of peasants affected 110,126).¹²⁵

5. The landlord purchases the right to use the land from the peasant and dismisses him and cultivates the land by employing wage-paid workers (57,000 peasants affected).¹²⁶ The rent scheme was obviously more acceptable to the landlords than the others in that they maintained their positions in the villages.

In 1969, the third phase of land reform was introduced to remove the powerful landlords from rural society. This phase was based on the following scheme: The landlord was to sell or distribute his leased land to the peasant tenants proportionate to their shares in the crop or the farm corporation unit. The phase was the last stage in the land reform program.¹²⁷

The Results of the Land Reform

An assessment of the land reform from the standpoints of equity and efficiency supports the following. The unequal distribution of land inherent in the feudal system as mentioned in the beginning of this chapter could not be eliminated even after 1973 when the government announced that

¹²⁵Organization of Fedayeene-Khalq, Land Reform, pp. 52-56.

¹²⁶F. Halliday, Iran: Dictatorship and Development, p. 117.

¹²⁷Organization of Fedayeene-Khalq, Land Reform, pp. 93-96.

all of the three phases of the land reform had been implemented. At this time, the number of small landowners amounted to 1.9 million households.¹²⁸ Of those, 800,000 possessed new landholdings of an economically feasible size which had been parcelled out during different phases of the land reform as follows:¹²⁹

In the first phase, between 200,000 and 300,000 peasant households.

In the second phase, between 250,000 and 400,000 peasant households.

In the third phase, only 100,000 peasant households.

Of the rest of the 1.9 million peasant households, 1.1 million held landholdings of such a small size that they could not sustain a primary subsistence level. Also, approximately 2.1 million peasant households were landless Khushnishin* who relied totally on their wages for survival. The landless peasants were deprived of any benefits of land reform.¹³⁰

Before the land reform, there were 1,289,300 landless peasant households. The number of small landowners and the peasant nasaq-holders totalled 1,934,160 households; of this number, about 130,000 households were small landowners.¹³¹ So, the number of peasant households with access to land (small landholdings plus the peasant nasaq-holders) was 1.5 times more than the number of Khushnishin. After the land reform, the number of the households with nasaq-holdings diminished and the number of landless households increased to 1.1 times the number of the peasant households with access to land. There are several causes for

¹²⁸Ibid. ¹²⁹Ibid., pp. 98-99.

¹³⁰Organization of Fedayeene-Khalq, Land Reform, pp. 102-104.

¹³¹Ibid., p. 98.

* Khushnishin is a Persian term for landless village dwellers.

this phenomenon.

A large number of the landlords mechanized the cultivation of their land through the purchase of the use/right of the peasants to the land and dismissing them from the land or enclosing land by planting orchards in order to be exempted from the land reform.

A number of the peasants who had owned a very tiny parcel of land and were not able to maintain subsistence sold their land to other more prosperous landowning peasants and joined the rural working class.

Furthermore, the land reform by itself could only fail unless accompanied by substantial credits and technical assistance and various other subsidies from the government. The annual payments for the price of land charged the peasants were higher than the previous share payments to the landlords for a majority of 800,000 new landowning households.¹³²

There was yet another financial burden on the rural families. Previously, under the domination of the feudal system, the landlords were financial and managerial resources of support for the peasants. However, after elimination of the landlords' positions in the Iranian villages, the new landholding peasants and other small landowners needed some sort of financial aid. The government attempted to take the place of the landlord's position by establishing cooperatives. The main functions of the cooperatives were providing loans, agricultural tools, and markets for the sale of consumer goods to new landowning peasants. In the beginning, the number of cooperatives amounted to 6,700 cooperatives that covered more than

¹³²F. Halliday, Iran: Dictatorship and Development, p. 121.

two-thirds of the rural areas of Iran. This number was reduced in 1971 to 3,000, which were directly controlled by the Central Organization of Rural Cooperatives.¹³³ In practice, these cooperatives which lacked experience, staff, and credit, and required high interest rates on loans (sometimes more than eight per cent) were not able to advance necessary funds to needy peasants.¹³⁴ The maximum amount of a loan to each peasant was 20,000 Rials (\$240). This amount was too little for agricultural expenditures because of the massive poverty of the peasants.¹³⁵ The only way left for the peasants to repay their loans to the government was to borrow from the non-institutional market at a very high interest rate, often 50 per cent. So a number of the poor landowners went into bankruptcy and sold their lands to other more prosperous landowners in the village and migrated to the cities to work as laborers.

In fact, the industrial centers of the urban areas absorbed the majority of the cheap rural labor force without providing significant welfare facilities for them. Consequently, most of the rural immigrant workers lived in adobe houses in the slum areas of cities under extreme poverty conditions because of the lack of adequate income and high rent.

As much as eight per cent of the total rural population migrated from rural to urban areas annually during the early 1970s.¹³⁶ According

¹³³ Organization of Fedayeene-Khalq, Land Reform, p. 50.

¹³⁴ H. Richards, "Land Reform and Agribusiness in Iran," MERIP Reports, no. 43 (Washington: Middle East Research and Formation Project, 1975), p. 9.

¹³⁵ F. Halliday, Iran: Dictatorship and Development, p. 121.

¹³⁶ M. G. Weinbaum, "Agricultural Policy and Development Politics in Iran," Middle East Journal (Autumn 1977):435.

to a survey conducted in the slum area of four cities, Kermanshah, Hamadan, Tabriz, and Bandar Abbas in 1977, the following information has been tabulated.¹³⁷ Table 25 indicates the percentage of migrants from each socioeconomic group migrating to the slum of each city. More than 50 per cent of the people who lived in the slum areas without access to electricity, water, education, health clinics, and city welfare institutions were former peasant nasaq-holders and agricultural workers who had given up hope of finding jobs in the rural areas and migrated to urban areas after the land reform.

The incentive for a landlord to apply mechanized (capital intensive) methods and hire wage-paid workers was exclusion from the land reform. In fact, the new agricultural enterprise was established to transform the rural community into a modern free market system. In addition, the number of prosperous small landholding peasants who emerged from the land reform reinforced this transformation. However, the market-oriented system could not dominate all the rural areas of Iran; in some rural areas, where there was a lack of enforcement of the land reform laws, the feudal system persisted.

One alternative compensation for previous landlords was ownership in the state-owned factories. About 20 per cent of the landlords became stockholders in these factories. Their position was changed into that of an industrial entrepreneurial class in the urban areas.¹³⁸

¹³⁷"Slum Segments of the Iranian Cities," Daneshjoo: The Quarterly Review of I.S.A.U.S (July 1977):54-70.

¹³⁸F. Halliday, Iran: Dictatorship and Development, p. 133.

TABLE 25

PATTERNS OF MIGRATION TO THE SLUM AREAS OF CITIES

(Percent)

Migration From ↓ To →	Other Areas of the City Itself	Rural Areas Surrounding The City	Suburbs of the City Itself	Other Cities	Other Rural Areas
Kermanshah	15	59	-	4	22
Hamadan	19	44	-	-	37
Tabriz	13.7	11.3	1.2	8.3	61.3
Bandar Abbas	24.6	23.1	-	4.5	47.8

SOURCE: "Slum Segments of the Iranian Cities," Daneshjoo: The Quarterly Review of I.S.A.U.S., (July 1977):55.

Agrarian reform was not restricted to the land reform itself. The breakdown of the old feudal production system was not accompanied by an emergent stable capitalist productive relationship. The fragmentation of the rural lands into tiny plots in the possession of impoverished peasants without the advancement of substantial financial and technical aid by the government hindered the acceleration of productivity and well-being of the peasants in the countryside.

The preservation of the new economic order in the rural area was totally dependent upon external investment by the foreign and domestic (private and government) enterprises. The semi-governmental farm corporations and privately owned agri-industrial corporations were established after the land reform without any consideration of their economic impact on the welfare of the rural people.

In 1967, several semi-governmental and mechanized farm corporations were set up by the government. The number of these corporations reached 43 by 1971.¹³⁹ The main shareholders in these corporations were the new landowning peasants and the old landowners and peasants who had not been included in the land reform. The shares of the peasants in those corporations were proportional to the amount of their properties such as land and other means of production which they invested in the firm. The result was that the prosperous peasants and landowners were the final beneficiaries of the corporations. In addition to annual dividends, the peasants of the corporation could benefit further by working on the farms for pay. The main goal of this kind of corporation was to

¹³⁹H. Richards, "Land Reform," p. 10.

consolidate small plots of land and use a mechanized agricultural method for a better economies of scale and through massive financial and technical support by the government to increase the income of the shareholders. The average income of peasants increased from 29,464 to 53,671 Rials after they joined the farm corporation.¹⁴⁰

However, the share of these corporations in total agricultural output has amounted to only five per cent.¹⁴¹ Moreover, the welfare of landless peasants was adversely affected by these corporations. The capital intensive method of production of these corporations idled more rural people. The productivity of the farm corporations was much below the government expectation despite massive financial and technical assistance. For example, in 1970 the government spent 32.5 million Rials for each of the 19 farm corporations. However, the average annual return was very low, about 2.9 million Rials, demonstrating inefficiency of these corporations.¹⁴²

Another alternative productive unit was the agribusiness companies, the establishment of large scale mechanized privately owned companies which could undertake the cultivation of large irrigated plots near dams efficiently utilizing the abundant available resources and facilities of the dam such as water, electricity, transportation, and fertile soil. The construction of 17 dams before 1972 provided an excellent economic environment for domestic and foreign enterprises to invest in the agribusiness companies.¹⁴³

¹⁴⁰R. E. Looney, Income Distribution Policies and Economic Growth in Semi-industrialized Countries (New York: Praeger Publishers, 1975), p. 100.

¹⁴¹H. Richards, "Land Reform", p. 12.

¹⁴²Ibid.

¹⁴³R. E. Looney, Income Distribution Policies, pp. 94-95.

But the agribusiness activities had adverse effects on the welfare of the peasants in the vicinity of the dams. The government removed all the native peasants from their lands by purchasing their properties and leasing the land to the agribusiness corporations under 30-year leases.

In 1971, around 250,000 acres of land near the giant Dez dam were purchased by the government from the native peasants in 58 villages surrounding the dam, displacing them to the newly built small towns in the region. There they were deprived of the right to keep chickens, cows, sheep, and other livestock which were a partial source for their livelihood.¹⁴⁴ Their status was altered from that of self-employed farmer to that of a working peasant who earned wages from the newly established agribusiness farms which were under the management of foreign and domestic investors. The average daily wage was \$1.80 for native peasants, a low wage in comparison with the \$72 per day of the managing directors of the corporation. This was a high wage differential for the rural community.¹⁴⁵ The Hashem Naraghi Agro-Industries of Iran and America, the Iran-California Corporation, Trans-World Agricultural Development Corporation, and International Agricultural Corporation of Iran were major companies in the region of the Dez dam. In practice, foreign and domestic enterprises were able only to partially invest in land made available by these government projects. Some of these corporations sold their stocks to the government because the rate of return on the agricultural sector was very low and did not meet expectations for a high profit in a short time. The high rate

¹⁴⁴H. Richards, "Land Reform", p. 14.

¹⁴⁵Ibid., p. 16.

of interest, about nine and one-half per cent on the loans from the Iranian Agricultural Development Bank reduced expectations for a successful business.¹⁴⁶ However, the high capital intensive method of production by the agribusiness corporations generated a surplus of landless peasants around the dam whose villages were threatened by growing unemployment.

There has been inconsistency in the performance of the government regarding the agricultural sector. The government could have significantly changed income distribution in the rural society and narrowed the rural/urban income differential by recycling money derived from oil into projects directly benefiting the lowest income bracket of peasants, projects such as the advance of massive credit without interest, technical assistance which could make better the welfare of small landowners, strengthening of the peasants' positions in the villages, preventing their migration to the cities. In addition to these aids, the government could have established small workshops and cattle-raising fields near farms to complement farm activity, and raise the income of the rural people inducing them to stay in the villages.

However, the government ignored the economic welfare of the poor peasant masses and placed heavy emphasis on the large ambitious and expensive projects, such as the building of the Dez dam without precise investigation of its costs and benefits.¹⁴⁷ In practice, these giant projects could benefit only a few huge commercial agricultural enterprises

¹⁴⁶Ibid., p. 17.

¹⁴⁷M. Rabbani, "A Cost and Benefit Analysis of the Dez Dam," Quarterly Journal of Economic Research, Tahqiqat Eqt-e-Sadi (Tehran: Tehran University Press), Summer 1971, pp. 132-145.

without having any significant positive effect on the rural peoples. As mentioned before, these projects had an adverse effect on the well-being of the peasants by moving them off of their land.

If the government had pursued a policy which directly benefited peasant farmers in the long run, undoubtedly, it could have developed the rural areas as well as providing an equitable income distribution. The political and economic stability of the regions would have been assured.

However, emphasis on the giant expensive projects led to more income inequality and less productive results. According to empirical reports of the Iranian Agricultural Ministry for 1962, the small labor intensive farms are more productive than the large capital intensive ones.¹⁴⁸ The social benefits of the land reform have not been realized by the majority of peasants. It has not been a radical redistribution in an egalitarian manner of the landlord's properties among all the landless peasants to eliminate the roots of income inequality in the rural areas.

The 1960s were a decade of implementation of several stages of the Iranian land reform. Therefore, it is to be expected that the impact of the reform on agricultural output should be evident in the following decade. In order to investigate the effects of the land reform on the productivity of the agricultural sector, the ARIMA model (integrated autoregressive-moving average model) has been adopted for the extrapolation of agricultural output during the period of 1971-1977 under ceteris paribus conditions. The difference between the actual and projected agricultural output indicate the overall effect of agrarian reform on the efficiency of the agricultural

¹⁴⁸R. E. Looney, Income Distribution Policies, p. 96.

sector.

A stochastic time series, especially the ARIMA model, is widely used in econometrics to extrapolate the behavior of random variables based upon past values into the future. In a stochastic time series, it is assumed that the time series is generated by a stochastic process. The time series is stationary if the stochastic characteristics are unchangeable over time, otherwise, it is non-stationary. In the case of a non-stationary time series, it is necessary to transform it into a stationary model by differencing the time series several times. The number of times of the differencing is called the order of the homogenous non-stationary model.

In the ARIMA model, it is assumed that the value of the random variable is related to its past values (an autoregressive process) and to the present and lagged values of the disturbance terms (a moving average process). In order to identify the ARIMA (P, d, q) model, it is necessary to specify the order of the autoregressive process (P), the order of the moving average process (q) as well as the order of the homogenous non-stationary model (d) by checking the plot of the autocorrelation function of the time series.

The following ARIMA model based on the annual series of data on agricultural output for wheat, rice and barley during the period 1941-1970 was identified and estimated.¹⁴⁹ The data for wheat, rice and barley were gathered from several issues of the Statistical Year Book published by the United Nations.

¹⁴⁹For more information, see R. S. Pindyck and D. L. Rubinfeld, Econometric Models and Economic Forecasts (New York: McGraw-Hill Book Company, 1976).

ARIMA (0, 1, 3),

$$Y_t - Y_{t-1} = 99527.2 + e_t - 0.14387e_{t-1} - 0.06453e_{t-2} - 0.7828e_{t-3}$$

(0.86) (0.39) (4.63)

The figures in parentheses are t-statistics. In this equation, Y_t is the aggregate agricultural output in terms of thousands of metric tons; e_t is disturbance terms. This model was selected from the different ARIMA models based on the following criteria:

1. Autocorrelation function
2. Diagnostic checking
3. Standard error of the forecast.

A comparison of the projected value of agricultural output with actual value (Table 26) based on the above model reveals that there was no gain in agricultural output following the agrarian reform. On the contrary, the agricultural sector still suffered from stagnation during the 1970s. Comparison with the projected value of agricultural output demonstrates that there was a loss in agricultural products after the implementation of the land reform. In summary, the agrarian reform failed to stimulate agricultural production.

Conclusion

Before the land reform, the rural areas of Iran were characterized by the concentration of the most intensely cultivated land in the possession of a few feudal landlords. About half of the labor force of the villages were landless workers, and the rest were peasant sharecropping nasaq-holders. During all the phases of the land reform, land titles were

TABLE 26

A COMPARISON OF ACTUAL AGGREGATE AGRICULTURAL OUTPUT
WITH PROJECTED AGRICULTURAL OUTPUT AFTER 1970
(In Thousands of Metric Tons)

Year	Actual Output	Projected Output	(+gain) or (-loss)
1971-1972	4706046	5849062	-1143016
1972-1973	5555200	6591859	-1036659
1973-1974	5524334	7397303	-1872969
1974-1975	5564313	7496830	-1932517
1975-1976	7009430	7596357	-586927
1976-1977	7532566	7695884	-163318

transferred from the landlords to the peasant nasaq-holders without further redistribution of land among the landless peasants. A few new landowning peasants received adequate plots of land while those with tiny plots were not able to survive economically.

The number of landless peasants increased during the process of land reform for several reasons. A number of the peasant nasaq-holders were deprived of their land by the landlords. The poor peasants with small allotments were not able to retain their property for the lack of financial support from the government. Sooner or later, they were forced to sell their land to more prosperous farmers. In addition, modern productive units such as the agri-industrial corporations (capital intensive production) appropriated the peasants' land and made idle the peasant labor force. Some of the landless peasant workers migrated to the cities and roamed the industrial centers looking for work.

In the post-land reform period, there was still unequally distributed land between the large, prosperous, mechanized farming enterprises and the tiny impoverished family farms which contributed to persisting income inequality. Consequently, the land redistribution was not egalitarian in practice.

As shown in Chapter III, relative income inequality in rural areas increased during the period of 1969-77, an indication of the ineffectiveness of the land reform in narrowing income inequality in the rural areas.

To study the efficiency aspect of the land reform, the ARIMA model was used to extrapolate the aggregate agricultural output in the absence of land reform. In a comparison of actual agricultural output with the

projected one, it has been shown that a loss in agricultural output has occurred because of land reform. The implication is that land reform as a development policy has not been able to raise the income level of rural people. Hence, the income gap between rural and urban areas has not diminished. The alarming gap between consumption per household in the urban and rural areas continued in the 1970s. The consumption per household in urban areas was 3.8 times higher than that of rural households in 1977 (see Table 32). In short, the Iranian agrarian reform failed to increase relative income of rural dwellers.

CHAPTER VI

REDISTRIBUTIONAL IMPACTS OF THE GOVERNMENT

TAXATION AND EXPENDITURES

As has been demonstrated in welfare economics, a perfectly competitive market, in the absence of any externality, satisfies the Pareto optimal conditions for an efficient allocation of resources in an economy.¹⁵⁰

Assuming the individuals of a society can be classified into two groups, poor and rich, based on their relative income, then PP, as the grand utility frontier curve (GUFC) of poor and rich, can be drawn¹⁵¹ (Fig. 4). Choosing any point on this curve is a matter of income distribution between poor and rich.

Under a given set of prices of productive factors and commodities by a perfectly competitive market, it is always true that the market-determined equilibrium point is a point like R on the GUFC. Consequently, point R represents the distribution of income by the market when government intervention does not exist. However, this pattern of the distribution may not be just from society's point of view.¹⁵²

¹⁵⁰J. M. Henderson and R. E. Quandt, Microeconomic Theory, 2nd ed. (New York: McGraw-Hill Book Company, 1971), pp. 254-290.

¹⁵¹Ibid.

¹⁵²J. F. Due and A. F. Friedlaender, Government Finance, 5th ed. (U.S.: Richard D. Irwin, Inc., 1973), pp. 9-37.

Moreover, suppose the society possesses a social welfare function (W) which is dependent upon the utility of the poor and rich of society, $W = W(U_P, U_R)$. This function is based on the value judgment of the public concerning the welfare of poor and rich. In addition to this, the value judgment of the policy makers is representative of the individuals' preferences through the collective decision making process (e.g., majority vote). Postulate that the public gives higher priority to the poor's utility than to the rich's. In other words, the policy makers are concerned more with equitable distribution of income. Let I_1, I_2, I_3 be the social indifference curves. Then the equilibrium point of the income distribution is P which implies more equitable income distribution in favor of the poor. So, some redistributational policies are vital to move the economy from Point R to Point P. The taxation and public expenditure may redistribute the income to the advantage of the poor. But any government attempts in terms of taxation and public expenditures to move Point R to P fail by introducing

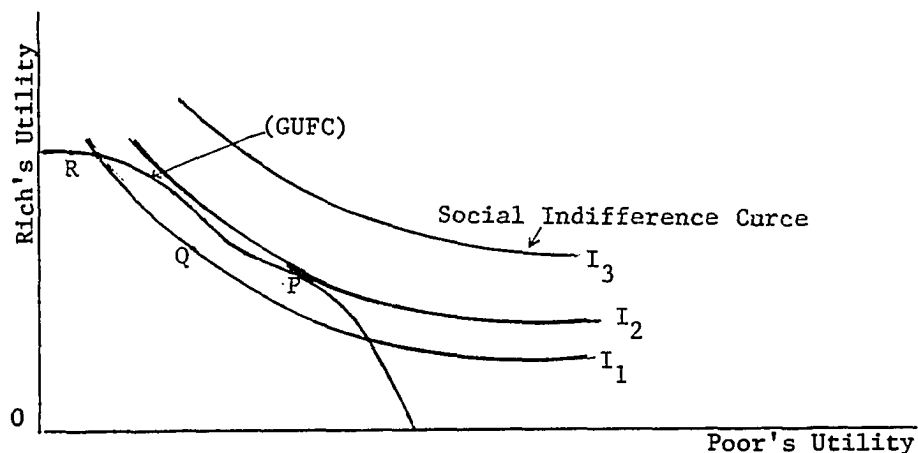


Fig. 4 - The Grand Utility Frontier Curve for Rich and Poor (GUFC)

the relative price distortions and misallocations of resources (except lump-sum tax and subsidy whose redistribution effects are zero, but which do not generate any distortion in economy).¹⁵³

By violating the Pareto optimality conditions in the case of government redistributive policies, the economy ultimately ends up at Point Q instead of Point P which is a suboptimal allocation of resources. Point R corresponds to the new factor price ratio and commodity price ratio in preference to the welfare of the poor over the rich. In other words, in this point, the society has traded off the well-being of the rich for that of the poor. Consequently, the Point Q is more desirable than R from the public's point of view.

In a rentier state like Iran, the government can change significantly the prevalent pattern of income distribution by recycling the oil revenues through the various expenditure channels. The rising oil revenue in the 1970s increased substantially the role of the government in the economy. The ratio of the public expenditures to GNP increased rapidly from 33 per cent in 1972 to 49 per cent in 1977.¹⁵⁴

Therefore, this chapter concentrates on the performance of the redistributive policies of Iran on both the taxation and expenditure sides. In the segment on taxation a brief overall view of the Iranian tax structure is presented. Then tax incidence in Iran is estimated in 1977. By applying the estimated rate of tax burden in the different income brackets, the Gini Coefficients of Pre- and Post-tax incidence are compared.

¹⁵³ Ibid.

¹⁵⁴ Central Bank of Iran, Annual Report and Balance Sheet (1977).

In the segment on public expenditures, a productive indirect approach to redistributive aspects of the government expenditure is to investigate the pattern of growth of the industrial sector versus the agricultural sector, regional economic development performances, and different social programs such as education.

Redistributive Impacts of Taxation

In less developed countries, generally, the tax policies have been formulated to achieve multiple goals such as the stimulation of economic development through the more appropriate allocation of resources, as well as a more equitable distribution of income.

From allocational aspects of the taxation, the Iranian income tax law in 1973 exempted all newly established agricultural and cattle farming units from income taxes for ten years.¹⁵⁵ Moreover, on the corporate income taxes, the government exempted from the income tax the export industries and the industrial establishments as far as 12 kilometers outside of Tehran. All of these tax policies were aimed at rechanneling existing allocation of resources which could ultimately contribute to the economic development.

Before analyzing the redistributive impacts of the Iranian taxation which is vital to this chapter, the tax structure needs to be explained briefly. Traditionally, the Iranian economy has been heavily dependent upon oil revenue to finance its current and development expenditures. Using tax policies as instruments to shape income distribution

¹⁵⁵ Robert E. Looney, Income Distribution Policies and Economic Growth in Semi-Industrialized Countries, pp. 40-50.

has not been taken seriously until recently, however. Since oil revenue stagnation in the middle of the 1970s, the taxation regained considerable attention. The tax share from the total government revenue increased from 17.1 per cent in 1975 to 21.7 per cent in 1977.¹⁵⁶

According to Table 27, the import taxes with 37.89 per cent and the corporate tax with 36.26 per cent constituted a substantial portion of the Iranian tax revenue in 1977. However, the nature of both taxes are regressive, as will be discussed. The personal income tax which comprised 13.014 per cent is progressive in nature. Finally, the excise tax, 9.98 per cent of the total tax revenue is regressive in nature. With respect to the trend of different taxes, the share of corporate taxes grew from 20 per cent in 1972 to 36.26 per cent in 1977, while the share of income tax declined from 14.6 to 13.014 per cent during the same period. The import taxes fell from 46.0 per cent in 1972 to 37.89 per cent in 1977. In addition, the sales tax decreased from 14.6 per cent in 1972 to 9.98 per cent in 1977.

The wealth tax was 2.85 per cent of the total tax revenue in 1977, which is very low. Some economists advocate an annual tax on the net wealth of individuals.¹⁵⁷ They believe that the oil boom in the 1970s widened the unequal distribution of wealth and consequently, caused more income inequality. An effective solution to this problem can be found in the heavy taxation on the wealth of individuals. Especially in underdeveloped countries like Iran where urban land is subject to speculative activities, this

¹⁵⁶ Central Bank of Iran, Annual Report and Balance Sheet (1977).

¹⁵⁷ Robert E. Looney, Income Distribution Policies and Economic Growth in Semi-Industrialized Countries.

TABLE 27
STRUCTURE OF TAXATION IN IRAN (1972-79) (BILLION RIALS)

Tax \ Year	1972	1973	1974	1975	1976	1977
Total taxes	99.4 (100.0)	131.2 (100.0)	157.8 (100.0)	270.8 (100.0)	342.9 (100.0)	441.8 (100.0)
Corporate taxes	(20.0)	(22.2)	(28.45)	(41.83)	(37.59)	(36.26)
{ government						
{ private						
Income tax	(14.7)	(14.1)	(12.92)	(11.15)	(13.96)	(13.014)
{ salaried						
{ self-employed						
{ real estate						
{ other						
Wealth tax	(4.12)	(4.19)	(4.37)	(3.10)	(3.20)	(2.85)
{ property transaction tax						
{ other						
Import taxes	(46.0)	(46.27)	(40.1)	(34.19)	(35.75)	(37.89)
{ customs duties						
{ commercial profit tax						
{ special tax on imported cars						
{ import registration fees						
{ other						
Sales tax	(14.6)	(13.4)	(13.94)	(9.71)	(9.47)	(9.98)
{ oil products						
{ alcoholic and non-alcoholic beverages						
{ automobiles						
{ domestically-made						
{ car sales						
{ other						

Numbers in parenthesis are percentage

SOURCE: "Annual Report and Balance Sheet, 1977" (Tehran: Central Bank of Iran, 1978), pp. 140-41.

tax policy can be very effective.

The Distribution of Tax Burden

Before discussing tax incidence in Iran, it is important to point out a few key concepts. There is much debate in public finance literature concerning the allocation of tax shares among the individuals of a society. This debate centers around two approaches to tax allocation: (1) the ability to pay, and (2) the benefit principle.¹⁵⁸ The former approach is concerned with horizontal and vertical equity aspects of the tax share. In this approach, there are three alternative schemes, equal absolute sacrifice, equal proportional sacrifice, and equal marginal sacrifice, for distributing the tax shares among the individuals. The tax system is progressive under the equal marginal sacrifice; however, the progressivity is not certain under the other schemes. Additionally, there is a dispute about the tax base. From the horizontal equity point of view, should the economic capacity of an individual be measured in terms of utility, consumption, or comprehensive income?

Taxes affect the real purchasing power of any economic agent through two channels, uses side and sources side.¹⁵⁹

1 - The real income of the owners of capital and labor is affected by taxes on these factors' earnings, such as personal income tax (sources side).

2 - The changes in the prices of commodities caused by different

¹⁵⁸R. A. Musgrave, The Theory of Public Finance, pp. 61-115.

¹⁵⁹*Ibid.*, pp. 205-231.

taxes, such as the excise tax, can affect the purchasing power of the economic agents (uses side).

However, after imposition of any tax, the legal tax payers which bear the tax burden initially attempt to adjust their economic behavior and shift part of the tax forward to consumers or backward to the producers, labor and capital. So the tax incidence is mainly concerned with the ultimate tax burden.

Any tax scheme but the lump-sum tax generates an excess tax burden because of distortions of the individual choices and misallocations of resources which bring additional loss to the society in the form of excess tax burden. That is an amount over the actual tax payments of economic agents; but, for simplicity, the excess tax burden is not taken into consideration in the following discussion. However, it should be noted that merely measuring the tax burden as the amount of tax revenues collected sometimes can be highly misleading; excess burdens of taxation also are important.

The Estimation of the Effective Rate of Tax Burden. The Urban Household Budget Survey (1978) by the Central Bank of Iran is used to assign the overall tax burden among different income brackets for 1977. Allocation of the tax burden requires a set of assumptions about the tax incidences. Here, a simple set of assumptions is considered. The personal income tax is assigned proportional to wages and salaries in each income bracket of households. The sales and the import taxes are assumed to be borne proportional to the consumption expenditures. The real estate tax is assumed to be borne by the households according to their rent revenues.

The monopoly and oligopoly have been the common structures of a wide range of industries from the government to the private corporations for two basic reasons, the small domestic market and the heavy tariff wall. For instance, the Iranian National Manufacturing Corporation only assembled foreign parts to produce a car called Peykan. Its annual production was 90,000 which monopolized a major segment of the domestic market.¹⁶⁰ So, the mark-up pricing policy has been the common strategy in Iran. This implies that tax imposed on the corporation income shifts forward to consumers. Consequently, the households are the ultimate tax bearer of the corporate tax.¹⁶¹ The corporate tax is partitioned into different income brackets according to their total consumption expenditures. The tax incidence assumptions are summarized in Table 28. It should be noted that these assumptions are very regressive.

Generally, the average rate (effective) of taxation in each income bracket is determined by the division of total tax revenue in that bracket by its associated total income. According to Table 29, the average rate of taxation increases with a rising income bracket. The effective rate of taxation is 3.5 per cent in the lowest income bracket and increases to 9 per cent in the upper income bracket. In consequence, it can be argued that overall taxation in Iran has been progressive. This means that the households in the upper income class bear a heavier tax

¹⁶⁰"Aladdin's Troubled Dream," Forbes, February 15, 1976, p. 34.

¹⁶¹As A. Foxley and others point out: "If one also considers the fact that corporations are concentrated in the industrial sector - which is the most protected and oligopolistic sector of all - a hypothesis of forward shifting to consumers on the part of corporations seems reasonable," for more information, see A. Foxley, E. Animat, and J. P. Arellans, Redistributive Effects of Government Programmes: The Chilean Case, (New York: Pergamon Press, 1979), pp. 32-34.

TABLE 28

ASSUMPTIONS OF TAX INCIDENCE IN IRAN

Tax item	Allocation of tax burden according to distribution of:
Corporate income taxes (government and private)	Total consumption expenditures
Personal income tax { Salaried Self-employed Real estate	Wages and salaries Independent income Real estate revenues
Sales tax { Oil products Alcoholic and nonalcoholic beverages Automobiles	Outlays on the petroleum consumption Expenditures on the alcoholic and nonalcoholic beverages Transportation expenditures
Property transaction tax	Real estate revenues
Import taxes	Total consumption expenditures
Special tax on importable cars	Transportation expenditures

burden than those in the lower income class.

The Redistributive Impacts of the Tax Burden

The survey of the urban household budget only indicates the pre-tax income distribution of the households. Using this income distribution, the pre-tax Gini Coefficient is estimated for Iran in 1978 (by Kakwani and Podder approach). Employing the effective rate of tax for the different income brackets, the Post-tax income distribution is estimated. This means that the absolute income share of each income bracket is reduced proportional

TABLE 29

THE AVERAGE RATE (EFFECTIVE) OF TAX BURDEN OF THE
DIFFERENT INCOME BRACKETS OF IRAN (1977-78)

Income bracket (rials)	Average rate of tax (per cent)	Income bracket (rials)	Average rate of tax (per cent)
under 75,000	3.5	300,000 - 400,000	7.07
75,001 - 100,000	6.6	400,001 - 500,000	7.7
100,001 - 125,000	5.51	500,001 - 600,000	8.28
125,001 - 150,000	6.3	600,001 - 750,000	8.01
150,001 - 175,000	7.0	750,001 - 900,000	8.37
175,001 - 200,000	6.7	900,001 - 1,200,000	9.09
200,001 - 250,000	6.73	over 1,200,000	8.86
250,001 - 300,000	7.24		

to its effective rate of tax. The Gini Coefficient is estimated for the Post-tax income distribution. Overall results are presented in Table 30. The Gini Coefficient has slightly fallen from 0.4 to 0.39 after including tax impacts, which indicates no significant reduction in the Gini Coefficient.

Similar to Musgrave and Thin's argument,¹⁶² $TP = \frac{G_{BT}}{G_{PT}}$ can be ap-

plied as a measure of the tax progression, where G_{BT} and G_{PT} are Pre-tax

¹⁶²R. A. Musgrave and T. Thin, "Income Tax Progression, 1929-48," Journal of Political Economy 56 (1948):498-514.

TABLE 30

THE ESTIMATION OF THE PRE- AND POST-TAX LORENZ CURVE AND GINI
COEFFICIENTS OF INCOME DISTRIBUTION IN IRAN (1978-79)

	$\hat{a} = \log a$	$\hat{\alpha}$	$\hat{\beta}$	$\hat{G}$
Pre-tax	-0.953 (-87.09)*	0.903 (165.28)	0.900 (211.43)	0.400
Post-tax	-0.964 (-80.28)	0.906 (151.093)	0.912 (224.53)	0.393

*t-statistics in parentheses significant at 1% level.

The coefficients of the Lorenz Curve is estimated by application of (OLS).

and Post-tax Gini Coefficients respectively.

Then, tax structure is	if
progressive	$TP > 1$
proportional	$TP = 1$
regressive	$TP < 1$.

In the case of Iran, $TP = 1.017$; this means that the prevailing degree of progression of taxation is low.

This study has distributed the tax burden according to the urban income distribution which is its main shortcoming since the income distribution for the rural areas of Iran was not available. However, if the information on the rural income distribution existed, then it would be possible to calculate the average income distribution of both areas. Based on this kind of income distribution, the tax burden could be allocated

more accurately.

In 1977, the taxation ratio ($\frac{\text{total tax revenue}}{\text{GNP}}$) was 8.99 per cent in Iran,¹⁶³ which is very low in comparison with other countries. This ratio percentage was 27.2 in Chile, 27.3 in the United States, 38.5 in West Germany, and 30.0 in the United Kingdom in 1965.¹⁶⁴ Therefore, it can be argued that the tax effort has been low with respect to the taxable capacity of Iran in comparison with other countries. The tax evasion has been widespread largely due to the non-monetarized household production and rural activities, and the lack of bookkeeping in a large number of small businesses. Consequently, the low amount of Iranian taxes seems not to have a significant effect on the income redistribution in Iran.

The Redistributive Aspects of the Public Expenditures

Iran's annual public expenditures have two main components, the current expenditures and the development expenditures.¹⁶⁵ The current expenditures are normally allocated to different ministries and to the defense department. The development (capital) expenditures are a part of the economic plan which primarily is concerned with the infrastructure investments in health, education, and transportation. Moreover,

¹⁶³ Central Bank of Iran, Annual Report and Balance Sheet (1977).

¹⁶⁴ A. Foxley, E. Aninat, and J. P. Arellans, Redistributive Effects of Government Programmes, p. 21.

¹⁶⁵ Jahangir Amuzegar, Iran: An Economic Profile (Washington, D.C.: The Middle East Institute, 1977), pp. 189-192.

the government establishes a set of priorities concerning the sectoral and regional investments in each economic plan. Until the revolution in 1978, Iran had accomplished five economic plans. The current expenditures have always been greater than development expenditures (Table 31).

An indirect approach to the redistributive aspects of the government expenditures is to investigate the economic growth of agricultural versus industrial sectors, the regional economic development policy, and the social programs such as education.

The Economic Growth of Agricultural Sector versus Industrial Sector

The ratio of the per capita consumption of the urban household to that of the rural household increased from 2.09 in 1959 to 3.8 in 1976 (Table 32). So the gap between consumption of rural and urban areas increased during the economic development process, while in 1976, more than 50 per cent of the total population of Iran still lived in the rural areas. Deteriorating relative well-being of the rural people in comparison with the urban dwellers can be attributed largely to the widening gap between the per capita output (as an index of productivity) of the industrial and agricultural sectors. The per capita output and its annual change in the agricultural sector have lagged behind of those of the industrial and service sectors. The productivity index of the agricultural sector has increased from 100.0 in 1961 to 138.7 in 1971, while in the same period, the productivity index of the industries and mines rose from 100.0 to 181.1 (Table 33). According to Table 33, the average growth rate of productivity in the agricultural sector was 2.6 per cent and in the industries and mines it was 5.9 in the same period.

TABLE 31

THE GOVERNMENT EXPENDITURES (1971-77) (Billion Rials)

Expenditures	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77
Current:	168.4	227.3	316.8	727.8	936.3	1165.6
Economic Affairs	(14.1)	(21.6)	(32.6)	(75.2)	(109.3)	(139.5)
Defense	(68.2)	(90.9)	(134.8)	(372.5)	(491.6)	(566.6)
Social Affairs	(36.1)	(50.0)	(63.7)	(129.8)	(160.0)	(232.7)
Public Affairs	(26.1)	(31.9)	(39.6)	(63.1)	(70.0)	(111.9)
Other	(23.9)	(32.9)	(42.5)	(82.7)	(105.4)	(114.9)
Development:	115.9	131.8	161.3	348.7	526.8	700.7
Public Affairs	(11.1)	(14.7)	(33.4)	(51.3)	(87.5)	(134.3)
Social Affairs	(19.5)	(22.9)	(35.5)	(83.3)	(123.8)	(128.1)
Economic Affairs	(85.3)	(89.7)	(92.3)	(214.1)	(309.3)	(437.6)
Other	-	(4.5)	-	-	(6.2)	(0.7)
Advance Payments for purchase of goods	-	-	-	175.6	116.7	-
Special	12.0	15.0	19.6	24.7	24.8	44.1

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SOURCE: Jahangir Amuzegar, Iran: An Economic Profile, (Washington, D. C. The Middle East Institute, 1977), p. 190.

TABLE 32
PER CAPITA CONSUMPTION EXPENDITURES OF THE URBAN AND RURAL
HOUSEHOLDS (IN 1959 RIALS)

Year	Urban	Rural
1959-60	14,923	7,012
1960-61	15,740	7,164
1961-62	15,857	7,400
1962-63	16,502	7,638
1963-64	16,213	7,443
1964-65	16,743	7,993
1965-66	16,277	8,375
1966-67	18,714	8,314
1967-68	19,197	8,648
1968-69	22,027	8,590
1969-70	24,659	8,134
1970-71	26,820	8,243
1971-72	25,866	8,036
1972-73	27,542	7,423
1973-74	31,843	8,351
1974-75	34,159	9,183
1975-76	38,595	9,328
1976-77	40,789	10,706

SOURCE: M. Parvin and A. N. Zamani, "Political Economy of Growth and Destruction: A Statistical Interpretation of the Iranian Case," Iranian Studies 12 (Winter/Spring 1979):47.

Naturally, the share of the value added of the agricultural sector in GNP declined from 32.1 per cent in 1959 to 17.0 per cent in 1971. On the contrary, the share of the manufacturing and mining sector increased from 17.1 per cent to 23.3 per cent in the same period (Table 34).

The productivity differentials between the agricultural and industrial sectors have been the natural outcome of unbalanced investment between these two sectors. In the public dominated economy of Iran, as mentioned before, a large fraction of aggregate investment has been undertaken by the government. The composition of investment in machinery and equipment by the main economic sectors is shown in Table 35. According to this table, the share of the agricultural sector of the total investment fell from 8.4 per cent in 1959 to 5.1 per cent in 1971, while the industries and mines maintained their share around more than 40 per cent. Generally, the capital formation (Gross) grew at a low rate in the agricultural sector in comparison with the industries and mines sector (Table 36). Therefore, the unbalanced capital formation in the agricultural and industrial sectors has contributed to the productivity differentials between urban and rural areas which resulted in an alarming gap between their consumption expenditures. In other words, the urban dwellers, as a result of rapid capital formation in the industrial sector, have gained more from the economic development than the rural people.

Education

In Iran there has been a positive correlation between the expenditure bracket of a household and educational level of its members. In the 1970s, in the upper expenditure bracket, 6 per cent of the households were

TABLE 33
INDEX OF PER CAPITA OUTPUT IN THE MAIN ECONOMIC GROUPS, AT CONSTANT PRICES

Sector \ Year											
	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Agriculture	100.0	99.2	98.8	98.6	106.6	112.1	118.0	129.0	133.8	142.5	138.7
Oil	100.0	107.0	107.9	128.5	136.6	150.4	169.4	189.7	211.8	234.4	305.4
Industries and mines	100.0	112.5	114.4	117.7	130.2	133.0	145.7	154.5	159.2	162.5	176.7
Services	100.0	108.8	107.3	116.7	125.1	131.3	133.2	143.6	150.0	161.6	176.7
Gross national product	100.0	105.8	106.3	113.5	123.1	132.6	141.5	153.5	163.1	176.0	193.5
Gross national product (at market prices)	100.0	105.5	105.9	113.4	122.9	132.6	141.6	153.4	162.8	175.4	192.5

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SOURCE: "National Income of Iran, 1959-1972," (Tehran: Central Bank of Iran, 1974), p. 55.

TABLE 34

SHARE OF VALUE ADDED IN THE ECONOMIC SECTORS IN GROSS NATIONAL PRODUCT, AT CONSTANT PRICES (PERCENT)

Sector	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Agriculture	32.1	31.3	30.5	29.3	28.2	26.3	25.5	23.9	23.2	22.5	21.2	20.2	17.0
Oil	10.4	11.2	12.2	13.2	13.2	15.2	15.2	15.9	16.8	17.4	18.1	18.8	19.8
Industries and mines	17.1	17.6	18.4	19.0	20.5	19.7	20.9	21.4	22.2	22.5	22.5	22.3	23.3
Services	40.5	40.6	39.6	39.5	39.3	40.1	40.7	40.0	39.0	39.9	40.5	41.5	42.5
Net factor income from abroad (ex- cluding oil)	-0.1	-0.7	-0.7	-1.0	-1.2	-1.3	-2.3	-1.2	-1.2	-2.3	-2.3	-2.6	-2.6
Gross national product	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

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SOURCE: "National Income of Iran, 1959-72." (Tehran: Central Bank of Iran, 1974), p. 23.

TABLE 35
COMPOSITION OF INVESTMENT IN MACHINERY AND EQUIPMENT BY THE MAIN ECONOMIC SECTORS

Sector \ Year													
	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Agriculture	8.4	12.9	15.4	17.5	16.6	19.5	11.4	11.1	8.5	7.3	8.4	6.6	5.1
Industries and mines	49.7	49.6	50.3	40.8	33.9	31.5	42.2	42.9	45.7	46.1	45.6	45.1	47.7
Services	41.9	37.5	34.3	41.7	49.5	49.0	46.4	46.0	45.8	46.6	46.0	48.3	47.2
Transportation and communication	3.4	3.1	2.7	3.1	4.0	4.0	3.8	3.7	3.6	3.8	3.8	3.9	3.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

SOURCE: "National Income of Iran, 1959-72." (Tehran: Central bank of Iran, 1974), p. 95

TABLE 36
COMPOSITION OF GROSS DOMESTIC FIXED CAPITAL FORMATION BY THE MAIN ECONOMIC SECTORS
(AT CONSTANT PRICES, BILLION RIALS)

Sector \ Year							
	1965	1966	1967	1968	1969	1970	1971
Agriculture	5.5	5.2	7.9	7.9	8.9	9.0	14.4
Oil and gas	9.6	7.3	11.1	12.8	12.8	8.9	13.6
Industries and mines	43.3	48.0	57.9	65.5	67.6	72.4	85.5
Services	26.2	27.5	36.2	40.1	43.1	49.1	65.8
Total	84.6	88.0	113.1	126.3	131.8	139.7	179.3

SOURCE: "National Income of Iran, 1959-72." (Tehran: Central Bank of Iran, 1974), p. 96

uneducated while 82 per cent of the households in the lowest expenditure bracket were uneducated.¹⁶⁶ Education can be regarded as an effective public policy which can increase income earnings of the lowest income classes.¹⁶⁷ Thus, it can diminish the gap between poor and rich to some extent. Education is a mixed public good which benefits both individuals and society. Individuals, especially from low income classes, can enhance their human capital, which results in more labor productivity and personal income. This is an alternative redistributational policy.

In Iran, in 1974, all education from the primary school through the university became free to the public. However, there has been a deficiency in the educational planning of Iran.¹⁶⁸ The shortage of skilled and semi-skilled manpower was one of the main obstacles to the economic development of Iran. In the revised Fifth Development Plan (1972-1977), there was a shortage of 700,000 skilled workers (Table 37). With regard to Table 38, the ratio of students in the vocational training school to the total students was low. For instance, in 1976-77, this ratio was 1.96 per cent. The shortages of industrial technicians forced the government to import the manpower. Vocational training may be considered as an appropriate channel for a fast return, especially for the poor segment of the population. Unfortunately, the vocational training programs have not been expanded so far.

¹⁶⁶ Robert E. Looney, A Development Strategy for Iran Through the 1980s, (New York: Praeger Publishers, 1977), p. 164.

¹⁶⁷ Dirk J. Wolfson, Public Finance and Development Strategy, (London: The Johns Hopkins University Press, 1979), pp. 77-80.

¹⁶⁸ Walter Elkan, "Employment, Education, Training and Skilled Labor in Iran," Middle East Journal (Spring 1977):175-187.

TABLE 37

REVISED FIFTH PLAN MANPOWER GAP (1972-1977)

Engineers	16,000
Medical staff	23,000
Teachers	57,000
Technicians	42,000
Skilled and semi-skilled workers	560,000
Ordinary workers	10,000
Miscellaneous	13,000
Total	721,000

SOURCE: Walter Elkan, "Employment, Education, Training and Skilled Labor in Iran," Middle East Journal, Spring 1977, p. 182.

TABLE 38

NUMBER OF PUBLIC AND PRIVATE SCHOOL STUDENTS IN IRAN (1974-1977)

(THOUSAND PERSONS)

School \ Year			
	1974-1975	1975-1976	1976-1977
Kindergartens	41	89	175
Primary schools	3,646	4,119	4,468
Junior high schools	906	1,151	1,248
High schools	894	813	884
Technical and professional schools	88	133	152
Colleges and teacher training colleges	34	38	44
Others	545	574	751

SOURCE: "Annual Report and Balance Sheet, 1977" (Tehran: Central Bank of Iran, 1978), p. 163.

The educational opportunities and investments have been highly unequally distributed between the rural and urban areas. Table 39 indicates that the teaching staff was low in rural areas in comparison with urban areas. However, the rural teaching staff comprised 30.0 per cent of the total in 1972 and 40.2 per cent in 1976. The ratio of the literate population in urban areas was much higher than in rural areas. In 1976, this ratio was 87.4 per cent for the urban areas and 36.5 per cent for the rural areas.

The Regional Economic Development Strategies

The regional economic planning in the process of the development has been concentrated on the growth center strategies in Iran. The growth center strategies mainly generate the structural changes of a region, from the traditional mode of production to the more modern technologies. The essence of the growth center can be stated as follows: the concentration of vast economic activities, (e.g., industrial complexes) which are highly complementary to each other in a specific area of a country. The pre-condition for the creation of the growth center is the large amount of government investment in the public infrastructure projects such as dams, roads, education, and vocational training. Consequently, there is an incentive for the private sector to invest in the growth center by taking advantage of all possible externalities.¹⁶⁹ As a matter of fact, through the persuasion of the growth center strategies, the central government attempts to decentralize

¹⁶⁹J. Appalraju and M. Safier, "Growth-Center Strategies in Less-Developed Countries," in Development Planning and Spatial Structure, ed. Alan Gilbert (New York: John Wiley and Sons, 1976), pp. 143-165.

TABLE 39

THE RATIO OF LITERATE POPULATION IN 6-29 AGE GROUPS OF IRAN (1972-76)

Area	Year					<u>Percent change</u>	
	1972	1973	1974	1975	1976	1975	1976
Total country	50.9	53.1	55.3	57.5	59.6	4.0	3.7
Urban	77.6	80.1	82.6	85.1	87.4	3.0	2.7
Rural	30.5	32.0	33.5	35.0	36.5	4.5	4.3

SOURCE: "Annual Report and Balance Sheet, 1976" (Tehran: Central Bank of Iran, 1977), p. 163.

the economic activities around the country and prevent the migration to and economic pressure on the capital of the country.

The ultimate outcome of this regional development planning is that the growth centers gain largely during economic development, to the disadvantage of the backward areas of the country, so the growth center cannot spread the economic prosperities beyond a limited boundary. On the contrary, the relative gains of the other areas are low in comparison with that of the growth center areas. Therefore, the regional income inequality may be expected to widen.

In 1961, the distribution of the large industrial units around the country was according to Table 40. The manufacturing industries were concentrated largely in Tehran, Tabriz, and Meshad. After launching the growth center strategies by the government planners in the 60s and 70s, the ultimate outcome was the emergence of several large industrial cities which were specialized in various industries in different regions of Iran. For instance, steel mill complexes in Isfaham, machine-tool factories in Tabriz, automobile and bus assembly plants in Meshad, petrochemical industry in Ahadam, heavy metal and machine industries in Ahwaz, and light industries such as telephone in Shiraz.¹⁷⁰

Consequently, these industrial centers have developed at a fast rate while the other parts of Iran have not been the beneficiaries of the economic development performance. In some areas of Iran, such as Kurdistan and Baluchestan, the mode of production, handicraft industries, has not changed during the last half century. This implies that the productivity

¹⁷⁰ Ibid.

TABLE 40
DISTRIBUTION OF LARGE INDUSTRIAL UNITS IN IRAN (1961-62)

City	Number of the units	City	Number of the units
Abadan	24	Khorramshahr	4
Arak	7	Dezful	2
Aghajari	-	Rezaye	7
Ahwaz	10	Shareray	22
Bahol	4	Zahedan	-
Bander-Bosher	1	Sari	6
Bandar-Shapor	-	Samnan	2
Bandar-Abbas	1	Sandaj	4
Bandar-Mahshur	-	Shahi	6
Tahriz	528	Shiraz	52
Torbatehidarie	1	Qam	8
Tehran	946	Kashan	5
Gashsaran	-	Karaj	10
Gargan	9	Kerman	53
Masjedseleman	1	Kermanshah	27
Mashad	93	Hamadan	25
Khorramabad	2		

SOURCE: "Statistics Related to Economic and Social Changes in Iran," Statistical Center of Iran, (1976), p. 132.

rate has remained unchanged. In these predominately traditional industries areas, the poverty is expected to be more pronounced than in other areas.

In summary, the growth centers have gained largely at the cost of the backward areas. There has been a trade-off between equity and efficiency. The growth center strategies may have provided more efficiency and productivity, but the relative regional income differentials appear not to have declined in recent years.

Conclusion

Chapter VI investigated the redistributational aspects of government taxation and expenditures. As was discussed, the competitive market mechanism may not result in a just distribution of the income from the public's point of view. Therefore, some sort of redistribution policies regarding taxation and public expenditures are vital in directing the economy to approach a just distribution of income.

After a review of the tax structure of Iran and a few key concepts of the taxation theory, the overall tax incidence has been estimated for Iran in the year 1977. The overall tax burden based on the income distribution of urban households in 1978 and under a set of assumptions relevant to the tax incidence is reckoned for the different income brackets. The estimated average tax rate rises with the income brackets indicating progressiveness. Using the average tax rates for the different income brackets, the Pre- and Post-tax Gini Coefficients in 1978 are compared. There is a low decline in the Gini Coefficient after taking into account the impact of taxation on income distribution. The slight progressiveness

of the taxation alongside the low tax effort does not appear to have a significant effect on income redistribution in Iran.

Through an indirect approach to the redistributive impacts of government expenditures, it has been shown that the per capita consumption of the rural areas has lagged behind that of the urban areas, mainly because of the lack of the capital formation and the failure of the agrarian reform, as was discussed in Chapter IV. Concerning the regional development policies, growth center strategies have concentrated the industrial complexes in a few regions and the rest of the regions did not gain from the industrial development of Iran. As to social programs such as education, poor planning, especially in the field of vocational training alongside inequality of opportunity for education between the rural and urban areas, has negatively effected equitable distribution of income in Iran.

In conclusion, government taxation and expenditures did not have a significantly positive impact on reshaping a more equitable income distribution in Iran.

CHAPTER VII

SUMMARY AND CONCLUDING REMARKS

As presented in the introductory chapter, the main concern of this study was to examine the structure of income distribution and redistribution policies in Iran during the period preceding the revolution of 1978-79. This investigation has been carried out throughout the paper.

Chapter II considered the relationship between economic development and income distribution. Empirical investigations by several development economists, especially Kuznets, hypothesize that there is a trade-off between economic growth and income equality in the course of economic development. It was argued that the income inequality policy as a channel for producing savings in the upper income class and increasing capital formation in the initial stage of economic development may not be justified for oil exporting countries like Iran. Using a comparative static approach to the dualistic development of Iran (1966-76), it was demonstrated that the urban sector was the main beneficiary of economic growth, and there was not any improvement in the relative well-being of the poor rural sector. Furthermore, the overall social welfare of Iran's people did not improve during this period.

Chapter III attempted to arrive at an estimation of the different sources of income inequality in Iran. Using the Kakwani and Podder model,

Lorenz curve coefficients and associated income inequality indices, i.e., the Gini coefficient and the relative mean deviation, were estimated for both rural and urban areas. All of these indices indicated that the degree of income inequality oscillated but did not diminish for the urban areas during 1969-79 and for the rural areas during 1969-77. Furthermore, estimation of the Atkinson inequality index for the whole economy suggests that there was not marginal reduction in overall income inequality during 1970-77. These results seem consistent with Kuznets' hypothesis which postulates that there is a trade-off between economic growth and income equality in the process of economic development.

Moreover, to test the significance of the income variations between rural and urban areas, three different decomposition methodologies, i.e., analysis of variance, Theil inequality index, and Atkinson inequality coefficient, were applied to decompose the overall income variations into the income variations between and within urban and rural areas. All of the decomposition approaches suggested that a large fraction of the overall income inequality was explained by the variations of income within rural and urban areas rather than between them during 1970-77.

The regional income inequality, as measured by the weighted coefficient of variation and weighted Gini Coefficient did not indicate significant regional income differentials for some years between 1971-78. Overall, it appears that the degree of income inequality within both rural and urban areas has been more pronounced than income variations between rural and urban areas and among regions of the country.

Chapter IV examined the relationship between class structure and

income distribution and the relationship between the factor income share and income inequality in the process of economic development. There has always been a conflict of interest between the laboring class (lower income class) and the capitalist class (upper income class) over the distribution of the national income between capital and labor. In the modern free enterprise system of Iran, the upper income class was composed of the industrial elite, the royal family, financiers, merchants, landlords, and clergy, while the working class was constituted by industrial and agricultural workers. According to factual studies, especially Kuznets' investigations, the relative income share of capital in national income tends to decline while the tendency for the relative income share of labor is to increase during economic development. As was estimated, the relative share of labor in Iran's national income declined. On the other hand, the relative income share of capital rose during 1966-76, a period characterized by enormous oil revenues. So it appears that increased oil revenues in the rentier economy of Iran have been associated with a greater concentration of income and wealth among the property owning class (upper income class) and to the deterioration of the relative income share of the laboring class (lower income class) and hence, has led to an increase in income inequality. This empirical result contradicts Kuznets' proposition. The lack of strong labor unions may be considered as a contributory factor which has aggravated the economic condition of the working class.

In a micro approach, the Gini decomposition measure was adopted to partition overall income inequality into factor income inequalities

across the different income brackets of households. According to the empirical findings, the factor most responsible for the income inequality in the urban areas has been overall property income variations rather than wages and salaries during 1973-79.

Chapter V explored Iranian agrarian reform. In Iran, in the decade of the 1960s, agrarian reform was considered an effective policy for the redistribution of wealth and income. The land reform did not effectively change the old feudal system of production, and the market-oriented system did not spread over all rural areas.

The impacts of the land reform on the welfare of rural people were examined from the two aspects of equity and efficiency. In equity aspects, after achieving the different phases of land reform, in the early 70s there was still a large number of landless peasants who did not receive any land at all. In addition, there was still unequal distribution of land with large, prosperous, mechanized farming enterprises existing along with tiny, impoverished family farms. Thus, the land reform process was not completely egalitarian in nature. As to the efficiency of the land reform, intrapolation of the agricultural output of 1971-1976 indicates that agricultural production would have increased more rapidly without land reform. It can be concluded that the agrarian reform has failed to increase the relative income of the rural dweller.

Chapter VI investigated redistributive impacts of taxation and government expenditures. Employing the urban income distribution (1978) as a base for the allocation of the overall tax burden in 1977, the effective rate of tax was estimated for different income brackets. The overall tax rate appears to be progressive, but the degree of progression

is very low. The income Gini coefficients for pre- and post-tax income distribution were compared. There was no significant reduction in the income inequality.

The redistributive impacts of the government expenditures were explored mainly through economic development of the industrial sector versus the agricultural sector, education, and the regional economic development performances. There have been unbalanced investments between agricultural and industrial sectors which caused the income differentials between the rural and urban areas. In addition, the unbalanced investments in different regions of Iran (growth center strategies) may have reinforced more interregional income differentials. As to educational planning, there were several shortcomings such as limited vocational training and unequal educational opportunity between rural and urban areas. Vocational training is essential for economic development and for increasing the earnings of the lower income groups. More educational investment in the rural areas is necessary to narrow the income inequality gap between the rural and urban areas.

In conclusion, according to this empirical investigation, it can be postulated that the dualistic economic development of Iran has been associated with increasing and widespread income inequality especially during the years immediately preceding the Iranian revolution. The urban sector has been the main beneficiary of Iranian dualistic growth at the expense of the poor rural sector. From the point of view of income concentration within income brackets, relative income inequality within both urban and rural areas has shown no marginal reduction and has been more pronounced than income variations between rural and urban areas and among the various

provinces of Iran. From the standpoint of income concentration within the different classes, there has been an increasing gap between the relative income shares of the laboring and capitalist classes. The contribution of variations in overall property income to income inequality has been more than that of labor income. The Iranian government seems doomed to failure in its policies to effect income redistribution. Its performance in terms of income redistribution by means of agrarian reform, taxation, and government expenditures has been very limited and rather poor. The agrarian reform failed to improve income distribution within rural areas and decrease the income gap between urban and rural dwellers. The distribution of the tax burden with a low degree of progression could not significantly reshape income distribution in favor of the lower income brackets. As for government expenditures, unbalanced investments among regions, between agricultural and industrial sectors, and among various educational projects did not have a positive impact on the overall income equality in Iran. Consequently, it can be hypothesized that persisting maldistribution of income was a contributing economic factor to the Iranian revolution of 1978-79. The oil rentier economy of Iran has shown that spectacular economic growth by itself, aided by oil revenues, did not automatically guarantee a more equitable income distribution. In fact, increased economic growth was accompanied by an increase in income inequality. The experience of Iran is a lesson for other oil exporting countries, demonstrating that an oil based economy should make income equality a priority. Oil revenues, appropriately allocated, can directly benefit the worst-off segments of the population as well as the more undeveloped sectors of the economy rather than be used to accelerate economic growth per se. Whether the revolution will bring about improvement in the patterns of income distribution in Iran, only history will tell.

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APPENDIX

TABLE 41

THE MONTHLY DISTRIBUTION OF THE RURAL HOUSEHOLD CONSUMPTION EXPENDITURES
ACCORDING TO THE EXPENDITURE BRACKETS (1969-70)

n = 7408*

(rials)

Expenditure Brackets	Average Consumption Expenditures	Percentage of Households	Expenditure Brackets	Average Consumption Expenditures	Percentage of Households
less than 2,500	1,677	37.68	7,500 to 9,999	8,447	4.68
2,500 to 4,999	3,530	40.06	10,000 to 19,000	13,179	3.67
5,000 to 7,499	6,012	13.20	more than 20,000	34,559	6.80

*n is the sample size of the households

SOURCE: Statistical Center of Iran, The Survey of Rural Households Budget 1969-70.

TABLE 42

THE MONTHLY DISTRIBUTION OF THE RURAL HOUSEHOLD CONSUMPTION EXPENDITURES
ACCORDING TO THE EXPENDITURE BRACKETS (1970-71)

n = 3772

(rials)

Expenditure Brackets	Average Consumption Expenditures	Percentage of Households	Expenditure Brackets	Average Consumption Expenditures	Percentage of Households
less than 2,500	1,678	35.29	7,500 to 9,999	8,850	4.80
2,500 to 4,999	3,552	41.30	10,000 to 19,999	13,905	4.35
5,000 to 7,499	5,972	13.25	more than 20,000	31,114	1.01

SOURCE: Statistical Center of Iran, The Survey of Rural Household Budget 1970-71.

TABLE 43

THE MONTHLY DISTRIBUTION OF THE RURAL HOUSEHOLD CONSUMPTION EXPENDITURES
ACCORDING TO THE EXPENDITURE BRACKETS (1971-72)

n = 14341

(rials)

Expenditure Brackets	Average Consumption Expenditures	Percentage of Households	Expenditure Brackets	Average Consumption Expenditures	Percentage of Households
less than 2,000	1,397	10.97	10,000 to 12,499	11,145	5.63
2,000 to 2,999	2,519	14.85	12,500 to 14,999	13,645	3.31
3,000 to 3,999	3,492	15.18	15,000 to 19,999	17,128	3.59
4,000 to 4,999	4,480	12.78	20,000 to 29,999	23,983	2.38
5,000 to 7,499	6,100	19.35	more than 30,000	50,765	1.60
7,500 to 9,999	8,617	10.39			

SOURCE: Statistical Center of Iran, The Survey of Rural Household Budget 1971-72.

TABLE 44

THE MONTHLY DISTRIBUTION OF THE RURAL HOUSEHOLD CONSUMPTION EXPENDITURES
ACCORDING TO THE EXPENDITURE BRACKETS (1972-73)

n = 14358

(rials)

Expenditure Brackets	Average Consumption Expenditures	Percentage of Households	Expenditure Brackets	Average Consumption Expenditures	Percentage of Households
less than 2,000	1,505.60	16.1	10,000 to 12,499	11,114.10	3.1
2,000 to 2,999	2,552.10	19.3	12,500 to 14,999	13,626.30	1.7
3,000 to 3,999	3,494.80	18.3	15,000 to 19,999	17,284.32	1.5
4,000 to 4,999	4,469.74	13.8	20,000 to 29,999	23,801.91	0.8
5,000 to 7,499	6,051.50	17.9	more than 30,000	45,714.63	0.3
7,500 to 9,999	8,659.00	7.2			

SOURCE: Statistical Center of Iran, The Survey of Rural Household Budget 1972-73.

TABLE 45

THE MONTHLY DISTRIBUTION OF THE RURAL HOUSEHOLD CONSUMPTION EXPENDITURES
ACCORDING TO THE EXPENDITURE BRACKETS (1973-74)

n = 9361

(rials)

Expenditure Brackets	Average Consumption Expenditures	Percentage of Households	Expenditure Brackets	Average Consumption Expenditures	Percentage of Households
less than 2,000	1,384.40	11.96	10,000 to 12,499	10,952.82	4.91
2,000 to 2,999	2,458.20	15.24	12,500 to 14,999	13,411.64	3.02
3,000 to 3,999	3,424.37	15.83	15,000 to 19,999	16,892.30	2.40
4,000 to 4,999	4,386.98	13.13	20,000 to 29,999	23,741.78	1.74
5,000 to 7,499	5,998.10	20.66	more than 30,000	47,495.47	0.99
7,500 to 9,999	8,433.92	10.12			

SOURCE: Statistical Center of Iran, The Survey of Rural Household Budget 1973-74.

TABLE 46

THE MONTHLY DISTRIBUTION OF THE RURAL HOUSEHOLD CONSUMPTION EXPENDITURES
ACCORDING TO THE EXPENDITURE BRACKETS (1974-75)

n = 3350

(rials)

Expenditure Brackets	Average Consumption Expenditures	Percentage of Households	Expenditure Brackets	Average Consumption Expenditures	Percentage of Households
less than 2,000	1,325.13	3.94	10,000 to 12,499	10,953.88	11.70
2,000 to 2,999	2,558.09	4.84	12,500 to 14,999	13,395.56	7.85
3,000 to 3,999	3,500.83	6.87	15,000 to 19,999	16,956.50	8.72
4,000 to 4,999	4,464.36	8.45	20,000 to 29,999	23,312.06	7.40
5,000 to 7,499	6,133.67	20.33	more than 30,000	47,945.40	4.48
7,500 to 9,999	8,495.71	15.37			

SOURCE: Statistical Center of Iran, The Survey of Rural Household Budget 1974-75.

TABLE 47

THE MONTHLY DISTRIBUTION OF THE RURAL HOUSEHOLD CONSUMPTION EXPENDITURES
ACCORDING TO THE EXPENDITURE BRACKETS (1976-77)

n = 7141

(rials)

Expenditure Brackets	Average Consumption Expenditures	Percentage of Households	Expenditure Brackets	Average Consumption Expenditures	Percentage of Households
less than 2,500	1,603.24	6.78	15,000 to 19,999	17,208.13	9.84
2,500 to 4,999	3,816.45	16.61	20,000 to 29,999	24,134.60	8.43
5,000 to 7,499	6,203.72	17.66	30,000 to 49,999	37,328.65	3.84
7,500 to 9,999	8,649.78	15.01	50,000 to 99,999	67,492.07	1.46
10,000 to 14,999	12,212.65	19.77	more than 100,000	212,357.67	0.60

SOURCE: Statistical Center of Iran, The Survey of Rural Household Budget 1976-77.

TABLE 48

THE ANNUAL DISTRIBUTION OF THE URBAN HOUSEHOLD CONSUMPTION EXPENDITURES
ACCORDING TO THE EXPENDITURE BRACKETS (1969-70)

n = 4783

(rials)

Expenditure Brackets	Average Consumption Expenditures	Percentage of Households	Expenditure Brackets	Average Consumption Expenditures	Percentage of Households
less than 30,000	16,138	7.94	150,001 to 200,000	167,354	10.64
30,001 to 50,000	42,253	14.34	200,001 to 300,000	224,331	9.78
50,001 to 75,000	62,609	15.96	300,001 to 400,000	320,314	4.08
75,001 to 100,000	86,457	13.17	400,001 to 500,000	237,025	1.99
100,001 to 150,000	121,376	18.04	more than 500,000	430,662	4.06

SOURCE: Central Bank of Iran, The Survey of Urban Household Budget 1969-70.

TABLE 49

THE ANNUAL DISTRIBUTION OF THE URBAN HOUSEHOLD CONSUMPTION EXPENDITURES
ACCORDING TO THE EXPENDITURE BRACKETS (1970-71)

n = 2548

(rials)

Expenditure Brackets	Average Consumption Expenditures	Percentage of Households	Expenditure Brackets	Average Consumption Expenditures	Percentage of Households
less than 30,000	37,044	8.08	150,001 to 200,000	246,926	10.13
30,001 to 50,000	71,971	11.85	200,001 to 300,000	281,971	9.34
50,001 to 75,000	20,222	16.95	300,001 to 400,000	419,076	4.24
75,001 to 100,000	135,061	14.52	400,001 to 500,000	365,971	2.37
100,001 to 150,000	182,820	17.97	more than 500,000	834,482	4.55

SOURCE: Central Bank of Iran, The Survey of Urban Household Budget 1970-71.

TABLE 50

THE ANNUAL DISTRIBUTION OF THE URBAN HOUSEHOLD CONSUMPTION EXPENDITURES
ACCORDING TO THE EXPENDITURE BRACKETS (1971-72)

n = 2279

(rials)

Expenditure Brackets	Average Consumption Expenditures	Percentage of Households	Expenditure Brackets	Average Consumption Expenditures	Percentage of Households
less than 30,000	21,767	7.72	150,001 to 200,000	187,994	11.01
30,001 to 50,000	44,564	11.94	200,001 to 300,000	252,207	10.57
50,001 to 75,000	67,596	13.87	300,001 to 400,000	341,216	5.48
75,001 to 100,000	93,659	12.20	400,001 to 500,000	416,670	3.25
100,001 to 150,000	130,713	18.56	more than 500,000	882,462	5.40

SOURCE: Central Bank of Iran, The Survey of Urban Household Budget 1971-72.

TABLE 51

THE ANNUAL DISTRIBUTION OF THE URBAN HOUSEHOLD CONSUMPTION EXPENDITURES
ACCORDING TO THE EXPENDITURE BRACKETS (1972-73)

n = 4032

(rials)

Expenditure Brackets	Average Consumption Expenditures	Percentage of Households	Expenditure Brackets	Average Consumption Expenditures	Percentage of Households
less than 30,000	21,475	4.12	150,001 to 200,000	169,038	11.48
30,001 to 50,000	40,630	6.97	200,001 to 300,000	236,988	15.53
50,001 to 75,000	62,540	11.66	300,001 to 400,000	326,397	7.22
75,001 to 100,000	86,114	10.62	400,001 to 500,000	423,086	4.12
100,001 to 150,000	121,488	17.24	more than 500,000	748,649	11.04

SOURCE: Central Bank of Iran, The Survey of Urban Household Budget 1972-73.

TABLE 52

THE ANNUAL DISTRIBUTION OF THE URBAN HOUSEHOLD CONSUMPTION EXPENDITURES
ACCORDING TO THE EXPENDITURE BRACKETS (1973-74)

n = 4182

(rials)

Expenditure Brackets	Average Consumption Expenditures	Percentage of Households	Expenditure Brackets	Average Consumption Expenditures	Percentage of Households
less than 30,000	20,164	3.29	150,001 to 200,000	172,971	12.77
30,001 to 50,000	40,824	6.82	200,001 to 300,000	245,744	15.22
50,001 to 75,000	62,078	9.70	300,001 to 400,000	345,900	8.75
75,001 to 100,000	86,874	10.24	400,001 to 500,000	447,842	4.69
100,001 to 150,000	124,257	16.86	more than 500,000	892,298	11.66

SOURCE: Central Bank of Iran, The Survey of Urban Household Budget 1973-74.

TABLE 53

THE ANNUAL DISTRIBUTION OF THE URBAN HOUSEHOLD CONSUMPTION EXPENDITURES
ACCORDING TO THE EXPENDITURE BRACKETS (1974-75)

n = 9346

(rials)

Expenditure Brackets	Average Consumption Expenditures	Percentage of Households	Expenditure Brackets	Average Consumption Expenditures	Percentage of Households
less than 75,000	48,177	12.33	300,001 to 400,000	348,194	10.38
75,001 to 100,000	87,892	7.29	400,001 to 500,000	444,769	7.03
100,001 to 125,000	112,745	6.81	500,001 to 600,000	547,655	4.53
125,001 to 150,000	137,112	6.37	600,001 to 750,000	668,097	4.49
150,001 to 175,000	162,020	6.42	750,001 to 900,000	818,738	3.33
175,001 to 200,000	186,679	6.11	900,001 to 1,200,000	1,043,708	3.63
200,001 to 250,000	223,047	9.92	more than 1,200,001	2,090,885	4.06
250,001 to 300,000	273,801	7.30			

SOURCE: Central Bank of Iran, The Survey of Urban Household Budget 1974-75.

TABLE 54

THE ANNUAL DISTRIBUTION OF THE URBAN HOUSEHOLD CONSUMPTION EXPENDITURES
ACCORDING TO THE EXPENDITURE BRACKETS (1975-76)

n = 9196

(rials)

Expenditure Brackets	Average Consumption Expenditures	Percentage of Households	Expenditure Brackets	Average Consumption Expenditures	Percentage of Households
less than 75,000	48,403	9.43	300,001 to 400,000	347,367	11.79
75,001 to 100,000	87,582	5.32	400,001 to 500,000	446,689	8.15
100,001 to 125,000	112,535	6.40	500,001 to 600,000	546,097	5.43
125,001 to 150,000	137,408	5.90	600,001 to 750,000	668,876	5.02
150,001 to 175,000	162,300	5.69	750,001 to 900,000	819,340	3.47
175,001 to 200,000	187,773	5.10	900,001 to 1,200,000	1,030,814	4.39
200,001 to 250,000	223,473	9.60	more than 1,200,001	2,118,918	6.30
250,001 to 300,000	274,520	7.96			

SOURCE: Central Bank of Iran, The Survey of Urban Household Budget 1975-76.

TABLE 55

THE ANNUAL DISTRIBUTION OF THE URBAN HOUSEHOLD CONSUMPTION EXPENDITURES
ACCORDING TO THE EXPENDITURE BRACKETS (1976-77)

n = 4870

(rials)

Expenditure Brackets	Average Consumption Expenditures	Percentage of Households	Expenditure Brackets	Average Consumption Expenditures	Percentage of Households
less than 75,000	47,038	5.97	300,001 to 400,000	347,258	12.94
75,001 to 100,000	87,140	4.09	400,001 to 500,000	448,070	9.76
100,001 to 125,000	113,298	4.50	500,001 to 600,000	546,958	7.02
125,001 to 150,000	136,805	4.24	600,001 to 750,000	671,010	7.68
150,001 to 175,000	162,097	4.02	750,001 to 900,000	820,210	5.23
175,001 to 200,000	187,965	4.82	900,001 to 1,200,000	1,032,553	5.90
200,001 to 250,000	223,233	7.71	more than 1,200,001	2,055,240	9.30
250,001 to 300,000	273,650	6.82			

SOURCE: Central Bank of Iran, The Survey of Urban Household Budget 1976-77.

TABLE 56

THE ANNUAL DISTRIBUTION OF THE URBAN HOUSEHOLD CONSUMPTION EXPENDITURES
ACCORDING TO THE EXPENDITURE BRACKETS (1977-78)

n = 4891

(rials)

Expenditure Brackets	Average Consumption Expenditures	Percentage of Households	Expenditure Brackets	Average Consumption Expenditures	Percentage of Households
less than 75,000	40,637	3.8	300,001 to 400,000	345,435	11.1
75,001 to 100,000	87,668	2.2	400,001 to 500,000	448,028	9.9
100,001 to 125,000	111,458	2.3	500,001 to 600,000	547,209	7.6
125,001 to 150,000	137,188	2.6	600,001 to 750,000	669,493	10.0
150,001 to 175,000	162,976	3.7	750,001 to 900,000	816,742	6.6
175,001 to 200,000	187,008	3.2	900,001 to 1,200,000	1,037,249	8.5
200,001 to 250,000	226,402	7.6	more than 1,200,001	2,126,374	14.4
250,001 to 300,000	274,612	6.5			

SOURCE: Central Bank of Iran, The Survey of Urban Household Budget 1977-78.

TABLE 57

THE ANNUAL DISTRIBUTION OF THE URBAN HOUSEHOLD CONSUMPTION EXPENDITURES
ACCORDING TO THE EXPENDITURE BRACKETS (1978-79)

n = 2492

(rials)

Expenditure Brackets	Average Consumption Expenditures	Percentage of Households	Expenditure Brackets	Average Consumption Expenditures	Percentage of Households
less than 75,000	48,407	2.34	300,001 to 400,000	351,603	12.43
75,001 to 100,000	88,452	1.96	400,001 to 500,000	448,498	9.50
100,001 to 125,000	114,151	2.29	500,001 to 600,000	550,570	10.06
125,001 to 150,000	137,246	2.64	600,001 to 750,000	675,790	9.16
150,001 to 175,000	162,266	2.48	750,001 to 900,000	820,547	6.91
175,001 to 200,000	186,537	2.57	900,001 to 1,200,000	1,030,257	9.03
200,001 to 250,000	235,560	6.67	more than 1,200,001	2,057,989	14.68
250,000 to 300,000	273,017	7.28			

SOURCE: Central Bank of Iran, The Survey of Urban Household Budget 1978-79.

TABLE 58

DISTRIBUTION OF URBAN HOUSEHOLDS ACCORDING TO INCOME BRACKETS
(INCLUDING CASH AND KIND INCOMES), 1973-74.

(rials)

Income Bracket	Average Income	Percentage of Households	Income Bracket	Average Income	Percentage of Households
less than 30,000	31,968	3.29	150,001 to 200,000	167,166	12.77
30,001 to 50,000	50,386	6.82	200,001 to 300,000	237,464	15.22
50,001 to 75,000	70,218	9.7	300,001 to 400,000	213,624	8.75
75,001 to 100,000	92,053	10.24	400,001 to 500,000	423,006	4.69
100,001 to 150,000	126,975	16.86	more than 500,001	789,084	11.66

SOURCE: Central Bank of Iran, The Survey of Urban Household Budget 1973-74.

TABLE 59

DISTRIBUTION OF URBAN HOUSEHOLDS ACCORDING TO INCOME BRACKETS
(INCLUDING CASH AND KIND INCOMES), 1974-75.

(rials)

Income Bracket	Average Income	Percentage of Households	Income Bracket	Average Income	Percentage of Households
less than 75,000	61,665	13.5	300,001 to 400,000	300,951	10.5
75,001 to 100,000	94,339	7.5	400,001 to 500,000	350,145	6.6
100,001 to 125,000	120,471	6.7	500,001 to 600,000	449,082	4.5
125,001 to 150,000	137,682	6.3	600,001 to 750,000	522,774	4.3
150,001 to 175,000	159,685	6.2	750,001 to 900,000	709,022	3.2
175,001 to 200,000	179,960	6.2	900,001 to 1,200,000	875,921	3.5
200,001 to 250,000	206,751	9.9	more than 1,200,000	1,479,572	3.9
250,001 to 300,000	236,795	7.2			

SOURCE: Central Bank of Iran, The Survey of Urban Household Budget 1974-75.

TABLE 60

DISTRIBUTION OF URBAN HOUSEHOLDS ACCORDING TO INCOME BRACKETS
(INCLUDING CASH AND KIND INCOMES), 1975-76

(rials)

Income Bracket	Average Income	Percentage of Households	Income Bracket	Average Income	Percentage of Households
Less than 75,000	70,179	9.43	300,001 to 400,000	320,038	11.79
75,001 to 100,000	108,931	5.32	400,001 to 500,000	419,130	8.15
100,001 to 125,000	131,240	6.40	500,001 to 600,000	456,746	5.43
125,001 to 150,000	150,445	5.9	600,001 to 750,000	584,747	5.02
150,001 to 175,000	166,641	5.69	750,001 to 900,000	673,796	3.47
175,001 to 200,000	204,632	5.1	900,001 to 1,200,000	831,886	4.39
200,001 to 250,000	232,850	9.6	more than 1,200,000	1,672,645	6.35
250,001 to 300,000	274,264	7.96			

SOURCE: Central Bank of Iran, The Survey of Urban Household Budget, 1975-76.

TABLE 61

DISTRIBUTION OF URBAN HOUSEHOLDS ACCORDING TO INCOME BRACKETS
(INCLUDING CASH AND KIND INCOMES), 1978-79

(rials)

Income Bracket	Average Income	Percentage of Households	Income Bracket	Average Income	Percentage of Households
less than 75,000	104,300	2.34	300,001 to 400,000	390,449	12.43
75,001 to 100,000	106,208	1.96	400,001 to 500,000	449,695	9.50
100,001 to 125,000	167,779	2.29	500,001 to 600,000	516,422	10.06
125,001 to 150,000	180,179	2.64	600,001 to 750,000	674,498	9.16
150,001 to 175,000	186,614	2.48	750,001 to 900,000	762,722	6.91
175,001 to 200,000	220,534	2.57	900,001 to 1,200,000	883,820	9.03
200,001 to 250,000	265,738	6.67	more than 1,200,00	1,722,953	14.68
250,001 to 300,000	303,171	7.28			

SOURCE: Central Bank of Iran, The Survey of Urban Household Budget 1978-79.

TABLE 62

THE IRANIAN AGGREGATE OUTPUT OF WHEAT, BARLEY, AND RICE (1940-77)

(In Thousands of Metric Tons)

Year	Output	Year	Output
1940-41	2,196,172	1959-60	3,630,550
1941-42	2,196,172	1960-61	3,732,700
1942-43	2,196,172	1961-62	3,671,662
1943-44	2,196,237	1962-63	3,520,596
1944-45	2,778,930	1963-64	3,209,156
1945-46	3,081,420	1964-65	3,341,632
1946-47	2,975,350	1965-66	4,583,848
1947-48	3,020,450	1966-67	5,462,082
1948-49	2,261,480	1967-68	5,654,042
1949-50	2,600,450	1968-69	5,354,980
1951-52	2,520,360	1969-70	5,173,020
1952-53	2,880,450	1970-71	5,088,056
1953-54	3,060,499	1971-72	4,706,046
1954-55	2,929,526	1972-73	5,555,200
1955-56	3,143,322	1973-74	5,524,334
1956-57	3,700,440	1974-75	5,564,313
1957-58	3,760,485	1975-76	7,009,430
1958-59	3,990,485	1976-77	7,532,566

SOURCES: United Nations, Statistical Year Book, various issues.

TABLE 63

PRICE TRENDS IN IRAN DURING 1959-1976

Year	Cost of Living Index (1959=100)	Wholesale Price Index (1959=100)
1959-60	100.0	100.0
1960-61	107.9	102.0
1961-62	109.6	102.2
1962-63	110.6	103.6
1963-64	111.7	104.0
1964-65	116.7	109.6
1965-66	117.0	110.6
1966-67	117.9	110.0
1967-68	118.9	110.2
1968-69	120.7	110.9
1969-70	125.0	114.7
1970-71	126.9	118.6
1971-72	133.9	127.0
1972-73	142.2	134.2
1973-74	158.1	151.7
1974-75	182.6	175.9
1975-76	200.6	185.2
1976-77	235.9	210.2

SOURCE: M. Parvin and A. N. Zamani, "Political Economy of Growth and Destruction: A Statistical Interpretation of the Iranian Case," Iranian Studies 12 (Winter/Spring 1979):46.

TABLE 64

THE IRANIAN OIL PRODUCTION AND REVENUES DERIVED
FROM OIL EXPORTS (1973-77)

Year	Revenues Derived from Oil Exports (Millions of Dollars)	Total Oil Production (Thousands of Barrels)
1973	4399	5897
1974	17155	6057
1975	18440	5386
1976	19020	5881
	21020	5663

SOURCE: Peter Mansfield, ed. The Middle East: A Political and Economic Survey. 5th edition (Oxford: Oxford University Press, 1980), pp. 552-553.