INFLATION IN THE IRANIAN ECONOMY BETWEEN 1970-1998: A THEORETICAL - CUM- EMPIRICAL STUDY

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By

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CERTIFICATE

This is to certify that the thesis entitled **INFLATION IN THE IRANIAN ECONOMY BETWEEN 1970-1998: A THEORETICAL-CUM-EMPIRICAL STUDY** submitted by me for the degree of Doctor of Philosophy is a bonafide work, which has not been submitted, in part in full, for any other degree in this or any other university.

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Introduction

There has been a continuous dispute among both economists and non-economists about the cause and consequence of inflation for past three centuries. When the under-developed countries that were already absorbed in the international capitalist system started experiencing serious inflation in the 1970s, economists were left in no doubt that inflation was not a phenomena of advanced capitalist countries only. The nature of inflation of course is not only different between developed and under-developed countries but it is also not the same among the latter countries. For example, changing oil prices in international market have different effects for the oil exporting developing countries and the oil importing countries. Therefore, an uniform theory of inflation cannot be formulated for the developing countries in general, which also is applicable to the oil-exporting countries like Iran. In this chapter, we will focus on seven most important Iranian economic characteristics that are necessary for understanding the economy. First, we begin with the interrelationship between economy and politics. The second part is the relation between the clerics and the merchant bourgeoisie in the post-Revolutionary Iran. The third is the composition of the bourgeoisie. The oil economy is the forth point that we are going to discuss. The fifth is about development pattern and planning. The Iranian experience on import substitution policy is the sixth. Seventh, we will discuss poverty and income distribution in Iran. Finally, we will present the hypothesis and our plan of study.

Political instability and economic development

Political Economy, according to classical economists, was a study of the inter-relationship between the practical aspects of political action and the pure theory of economics. In recent years, the modern economists have become more restricted in terms of the range of their

studies. In other words, the inter-relationship between politics and economics has been ignored. This recent tendency among the modern economists, no matter what its relevance in the context of the developed countries, is difficult to accept while dealing with the third world countries, and especially a country like Iran. Analysis in the context of the developed countries usually deals with the role in production of three material factors—capital, labor force and technology. Therefore, production in developed countries is seen to be the result of these three factors, and these are clearly perceivable and explicable.

In the developing countries like Iran, non-material factors such as their cultures and socio-political set up are also important for an analysis of production. Of course, in advanced capitalist countries the socio-political and cultural factors have also affected production but the difference between these countries and the developing countries is that the political structure has become consolidated in the former case. Thus, their political structure acts as a fixed parameter for the production system and need not be explicitly considered. In Iran starting from the constitutional movement of 1901-1905 right until 1997, we have observed ten major political movements, the average period of each one of them spanning around ten years. One movement superseded another and each tried to bring a radical change in the old economic structure and to introduce a new one. Consequently, we should take into account this political instability in the analysis of the political economy in Iran.

The role of cleric and merchant bourgeoisie in Iranian political economy

The relation between clergy and merchant bourgeoisie or *Bazari*[1] and the role of these groups in Iranian political economy have been deeply influencing Iranian history, and a failure to understand this fact will nullify any effort to analyze Iranian political economy. Though the reforms of Reza shah (1920-1940) and Mohammad Reza shah (1963) were able to weaken the influence of the clergy and bazari in administration, they could not remove that groups from positions of influence in Iranian political economy. Their political position again improved when the Shah's reforms reached a deadlock in the

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[1]. Merchant bourgeoisie can be divided in two groups, traditional and modern, but here when we talk about merchant bourgeoisie or *Bazari* we refer to the traditional one.

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1970s. Since 1982, the clergy and *bazari* have been dominating the political as well as the economic domains of Iranian society. The following analysis is to point out three aspects—dependency of Clergy on *Bazzar*, composition of bourgeoisie and its role during inflation in 1970s, and the role of clergy and *Bazzar* in inflationary process in the post-revolutionary Iran.

Dependency of Clergy to *Bazzar*

The financial resources of the clergy came from *awqaf* or endowments vested with the religious institutions and *khums*[2] before the Shah's reforms in 1963. The Shah's regime attempted to strip the clergy of *awqaf* lands. Consequently, the clergy became more dependent on the *khums* sources, and a significant part of it was paid by *bazari*.

Hence, the increase in the wealth of *bazari* means an increase in *khums* amount, and any decline in *bazari's* income could have considerably weakened clergy and religious institutions. It should be noted that there were different factions among the clergy as well as among *bazari*. The Hujjatiyyah, the ultra right-wing religious organization, was contituted by the disciples of Ayatollah Khoei with a non-political approach. The organization had a good number of supporters among *bazari*, Hawzahha- yi'ilmiyah (Seminary of the Islamic Sciences), and among religious people . The second faction was the pro-Musaddiq National Front that was supported by Ayatollah Shreitmedari and which was not that strong within the clergy. Finally, there was the radical group that has grown up after 26 January Movement (1962) and was led by Ayatollah Khomeini. In alliance with the intellectual radical groups, it played a very important role in overthrowing the Shah in the 1979 revolution. Although the third radical clergy group was the most important force in the struggle against the Shah regime, all the three factions in alliance with the *bazari* claimed themselves to be the inheritors of the revolution and kept out all intellectual groups, particularly the radical ones, once the revolution was won. It is necessary to note that there has always been a stream within the

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[2]. It means "one-fifth", signifying that one-fifth of annual income is expected to be contributed as a tax to Marja'-i taqlid (the highest rank among the Shiah clergy) by Shiah sect Muslims. Strictly speaking, it is not income, rather increment in wealth which is considered for this purpose. Furthermore, it should be

clergy, which believed that the clergy and Hawzahha-yi'ilmiyah should be independent from *bazar* and should rely on donations from lower and Middle classes, although they constituted a minority.

Composition of the bourgeoisie in the 1970s

There is no consensus of opinion among Iranian economists on the question of the bourgeoisie in Iran, especially after the Shah's reforms in 1963 that changed the Iranian society dramatically.

Pesaran(1982), Razaghi (1989), Jazani (1980), Moaddel (1991), Salehi-Isfahani (1989), Dadhkah (1985) and Looney (1985) have debated about the character and role of the bourgeoisie in Iran in the 1970s. Salehi-Isfahani analyzed the composition of the bourgeoisie in the last decade of the Shah's regime. Pesaran in his article focused on the dependent nature of the bourgeoisie and has mentioned two important characteristics of this dependency—dependency on the state and on foreign technology. Razaghi divided the bourgeoisie into dependent and merchant bourgeoisie, and believed that dependent bourgeoisie started consolidating in Reza Shah era (he calls this period the first stage, and the post-coup d'etat period of 1954-1979 as the second stage, then the period of liberalization starting from 1989 onwards as the third stage of imperialization of the Iranian economy). Razaghi considered the period between 1960 and 1978, during which the dependent bourgeoisie enjoyed windfall gains, as an era of dependency of Iranian economy on capitalist countries. Although he has mentioned the role of merchant bourgeoisie in the post-revolutionary inflation process, he did not discuss the links of the clergy with merchant bourgeoisie that is very important in understanding the inflationary process in 1980s and 1990s. Jazani explained the composition of the bourgeoisie in the Shah's regime. His focus was on the comprador nature of the bourgeoisie in Iran. He has recognized commercial, industrial, financial, agricultural and bureaucratic bourgeoisie in the post-coup d'etat era. Jazani argues that all sections of the bourgeoisie are based on the increasing growth of foreign exploitation, and he adds that the industrial bourgeoisie has

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noted that this contribution is not mandatory and forced by the government, but voluntary on the part of the payer.

developed faster than any other section. Looney and Dadhkah's work was related to the inflationary process in the Iranian economy in the 1970s. According to the authors, inflation in the second half of the 1970s hit *bazaris* on the one hand and small industrial capitalists on the other. Dependency of *bazaris* and small industrialists on state credits to finance many of their activities further worsened during inflationary phase, while big industrialists enjoyed cheap financial credits that the Shah's regime offered to them. Looney and Dadhkah argued that the discrimination against *bazaris* and small industrialists, favouring big industrialists in credit distribution was the reason behind the former classes joining anti-government forces. Among all authors that we have mentioned above, Salehi-Isfahani and Moaddle wrote about the composition of bourgeoisie in the 1970s, and Moaddle's study covers one decade of the post-revolutionary era. The study of Slehi-Isfahani focuses on credit subsidy policy in Iran in the 1970s. He categorized the bourgeoisie into traditional and modern ones. He distinguished these two social groups based on differences in economic character, political attitudes (that modern bourgeoisie had towards the west and Shah's family), and their life styles and cultural values. The identified the traditional bourgeoisie with *bazaris* and industrialists who had close relation with *bazaris*, their economic activities being domestic and foreign trade, money-lending and industrial activity on small scale. Finally, he referred to the discriminatory policy of credit rationing. If the supplier of credit is the government, then credit distribution can have political dimensions. Where considerations regarding race, sex, social classes and religious beliefs or anything relating to such socio-cultural divisions become important, then credit policy will definitely show an element of political discrimination. Among all of the authors, Moaddle and Salehi-Isfahani considered *bazaris* as a more important factor in Iranian political economy; the former even referred to the tie between the clergy and *bazaris*. Moaddle argued that a large section of these two classes was non-political in their attitude in the pre-revolution period, but after revolution, in alliance with other sections of clergy and *bazaris*, they influenced the entire new regime. The very important point of Moaddle's analysis is that some law founded by the Islamic republic after the revolution, like the land reforms, nationalization of foreign trade, etc., it was termed un-Islamic by the *bazaris* and the conservative clergy. But all the studies cited above lack in one very important dimension

and that is the role of *bazaris* and the clergy in the inflationary process in post-revolution Iran, which over proposed study intends to take up.

Oil economy

With the witnessing of two booms in oil prices in the international market in the 1970s, a new term "oil economy" was added to the existing economic literature. OPEC's oil revenue was $11 billion in 1971 which rose to $ 87 bn. with the first oil boom in 1974 and further to $ 264 bn. in 1980. The OPEC's import had increased to 10 percent of the total world import in 1980 while it was just 1.5 percent 1970. Oil is, probably, the most important single traded commodity in the world market, and this led to immense increase in OPEC's role in the stability of international currencies and in the determination of the rate of growth of the world economy. We propose to examine the "oil economy" in the following order: division of oil exporting countries, role of trade in oil and OPEC in the world economy, and finally we will explain some major "oil economy" characters.

Division of oil exporting countries

Pesaran (1988) divided oil exporting countries in two groups—industrialized countries such as UK, and semi-industrialized countries such as Mexico. He criticizes the ideas of Worswick, Barker, Corden and Byatt, whose studies had shown the effects of oil and gas revenue on the economies of Canada, Mexico, the Netherlands, Norway and UK. These, he argued, where inappropriate for analyzing the case of the oil exporting countries in the Middle East, Africa, and Latin America. Pesaran argues that their assumptions regarding financial markets, floating exchange rate and an already developed international mobilization of private capital, hold good only for developed oil-exporting countries, and cannot be observed in oil-exporting countries of the Middle East, Africa, and Latin America.

Katouzian (1985) has recognized two types of oil economies. The oil exporting countries with a large agricultural sector and a large population, like Iran and Iraq, with low rates of agricultural growth and low per capita income. The second category covers many

small Arabian countries, including Kuwait and United Arab Emirates. This group of countries that are located in the Persian Gulf region have small agriculture sector, small population with high per capita income, and perhaps they do not have a very skewed income distribution. The problems of the latter type of countries are that they are totally dependent on foreign countries in terms of skilled and unskilled labor and import of foodstuff. Bo Sodersten (1990) categorized OPEC countries into three groups. The first group consists of Saudi Arabia and the small Emirates around the Persian Gulf. These countries that jointly have about 12 million population, produce approximately 60 percent of OPEC production. Their savings are larger than their domestic investment. The second group consists of four large countries—Algeria, Iran, Iraq and Venezuela—the joint population of which is about 5.5 times that of first group, and their production constitutes 30 percent of total OPEC production. These countries had a surplus of savings over investment during the 1970s. The third group, consisting of Indonesia and Nigeria, with a joint population of 200 million, produces only 11 percent of the OPEC production. It is interesting to note that the author's data refer to the 1970s. In the later years, OPEC was involved in two very expensive wars. One was the war between Iraq and Iran (1980-1988), the other was between Iraq and Kuwait in 1989. We also witnessed a fall in oil price in 1999. At present, most of the OPEC members have both large balance of payments and budget deficits.

The OPEC's position in the international oil market

The oil reserves are spread the world over and the oil-rich areas are distributed in the Middle East, North Sea, Mexico, and the United States. The share of OPEC is between 60 and 70 percent of the known oil reserves in the world.

Table 1: Share of group of countries in total oil production in the world (1974- 1996)

(in percent)

Group of countries	1974	1978	1982	1986	1992	1996
OPEC	54.4	49.5	33.4	30.6	40.5	40.5
American& West European	18.3	19.9	24	23.8	20.1	20.6
American	18.3	16.9	18.5	17	13.7	11.9
West European	0.00078	3	5.5	6.8	6.4	8.7
Others	27.3	30.6	42.6	45.6	39.4	38.9
Total	100	100	100	100	100	100

Sources: BP Bulletin & Economic Report & Balance Sheet of Central Bank of IRI, various years.

As can be observed in Table 1, the OPEC's share of crude oil production has been fluctuating between 30 to 54 percent during past three decades. Two groups of countries within OPEC exert influences on OPEC policies—the radical tendency, led by Algeria, Iran and Libya, makes efforts to adjust oil prices with international rate of inflation, and the conservative tendency, led by Saudi Arabia, which maintains low oil prices. It is interesting to discuss these tendencies in some detail.

Saudi Arabia, with the biggest oil reserve and being the largest oil supplier in the international market, continuously avoids high oil prices. This is because of their understanding of the microeconomic rule according to which the supply of any commodity in the long run is considered elastic, and therefore, a higher oil price will make industrial countries search for substitute commodities; in such a case, there will a fall in the prices and the OPEC countries will be the biggest losers. The radical tendency has a different idea. According to this group, oil is a non-renewable resource; hence, one

should maximize the gains by ensuring maximum possible revenue. Consequently, they suggest that the increase in oil prices should at least match the world rate of inflation.

It must be mentioned that since World War I, oil has been considered as the cheapest and the most appropriate source of energy by capitalist countries. Demand for fuel for automobiles and also planes is less elastic. Oil prices constitute an important part of the costs of production in advanced capitalist countries on the one hand, and are a major source of foreign exchange revenue for OPEC countries on the other. Furthermore, any change in international oil prices affects the interests of industrial countries and OPEC countries in an opposite ways. Advanced capitalist countries' efforts to keep the oil price low are based on the argument that the oil prices should be determined according to the cost of production which is very low in the Middle East.[3] The difference in positions taken by the two sides on the determination of oil prices is based on their different considerations about price formation. The advanced capitalist countries do not give real significance to oil as the most important material for production and thus emphasize its cost of production in price determination. The OPEC argues that oil is a crucial input in producing numerous commodities, and therefore, oil prices should be determined keeping in mind the prices of its substitutes, and the rate of world inflation should be taken into account.

Some important characteristics of "oil economy"

The common characteristics of OPEC countries are the following. First, their foreign exchange revenues are coming largely from oil exports (for example more than 90 percent of the foreign exchange revenue of Iran and other middle east countries of OPEC has been coming from oil exports for the last three decades). Secondly, the government budgetary revenues come neither from tax receipts nor from returns to public enterprises as in socialist countries. Thirdly, there was an attempt to make the oil-producing sector independent, at least financially, from the social classes, and thus, secluded from the rest of the political economic considerations. Finally, dependency of these countries on other

countries for import of foodstuff, capital, intermediate, and consumption goods and services is another characteristic features.

In order to clarify the causes of inflation in an "oil economy" we start with a situation where oil prices are increased in the international market. In such a case the balance of payment of oil exporting countries would earn surplus and this surplus would accrue to the government to be held in the form of foreign assets by the Central Banks of the Countries (CBC). This in turn would either reduce the claim of the CBC on the government, or increase the government's deposits with CBC, or lead to a larger supply of high powered money which the government spends. In this last case, the money base would become larger, and the money supply would increase consequently. Therefore, if there is an increase in aggregate demand with inability to raise aggregate supply, either through an increase in domestic production (that is impossible for most OPEC countries), or through imports, the economy would experience a demand pull inflation. Pesaran and some other Iranian economists believe that devaluation is desirable for an "oil economy" like Iran. However, it should be noted that devaluation in an "oil economy" might also lead to cost-push inflation. In this regard, we will argue that devaluation policy is not desirable in Iranian case, both theoretically and empirically.

The pattern of economic development and planning

The main goal of economic development in the third world countries is industrialization. The world has experienced two patterns of economic development. The first pattern was capitalist pattern of economic development that was attractive for the world before World War I with the emphasis on less state intervention. The second pattern was socialist economic development where state intervention was one of the central pillars. The latter one had become popular with the success of former Soviet Union economy, and also the triumph of Keynesianism in the advanced capitalist countries. In the post-second world war period, we have observed that planning became popular in the third world countries. Some sort of planning was already there in the industrial countries during war, in order to

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[3]. In addition, some western economists argue that price of oil is high not because of its shortage but because of OPEC. Bruce Scott, OPEC The American Scapegoat , Harvard Business Review , January 1981

facilitate rational utilisation of scarce sources in some parts of their economies. Thus, planning policy in underdeveloped countries was supported not only by socialist block but by capitalist countries too. Even the U.S. suspended its financial supports to the governments which supported rich classes, because the U.S. wanted to avoid events like the Cuban revolution in the third world countries. It is necessary to note the Import Substitution Policy (ISP) that was ideologically supported by former Soviet Union and accepted by many of the underdeveloped countries. Therefore, the import substitution policy that had dominated the development plans in the pre-revolutionary Iran must be studied within the framework of dynamics of world monopoly capitalism and its reflection in Iran. The following discussion has two sections—first examining the import substitution as the Iranian pattern of development, and second examining the planning experience in the pre and post revolutionary Iran.

The import substitution policy in Iranian experience

In the post-war period until now (about half a century), twelve economic development plans were conceptualized, but only four in the pre-Revolutionary Iran and two in the post-Revolutionary Iran were actually implemented. Import substitution policy dominated the plans' orientation in the pre-Revolutionary period, but monetarists dominated the central bank, and the plan and budget organizations during implementation of the first and the second plans in the post-revolutionary period. However, they could not eliminate ISP fully even then.

American policy in post-war period for third world countries was complex, because on the one hand they wanted to replace previous old colonialism and simultaneously they had to reform the political and economic system among those countries in order to prevent left revolutionary movements. Thus, it supported any group in underdeveloped countries which supported land reforms and economic development through plans. In other words, the idea was to protect the industrial bourgeoisie and a grown-up middle class in order to ensure political stability in these countries. The Iranian King, though unwilling to do the America-dictated reform, had to accept the reform because of the

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American pressure. In order to cope with the problem of lack of planners, the Iranian plan and budget organizations invited Harvard economists and asked international engineers to complete the projects. Iran, like many other undeveloped countries chose ISP as a popular solution and that was welcomed by the bourgeoisie in those countries. As Patnaik mentioned:

"To widen the domestic market, to carry import substitution further, the bourgeoisie needed active state involvement; to take advantage of the widening domestic market so provided, the bourgeoisie needed state support for mobilizing adequate capital, for obtaining the requisite infrastructure facilities, and for keeping down its risks; and above all, to ensure that the expanding opportunities did not slip altogether out of its own hands into those of metropolitan capital, with which it perforce had to collaborate, the bourgeoisie needed the protection of the state. In short, state spending on a large scale, state setting up of financial institution for providing capital for investment projects, protectionism, state regulation of multinational corporations, state investment in key infrastructure sectors: all these were directly essential for the domestic bourgeoisie embarking upon accelerated capitalist development." [4]

Import Substitution Policy in Iran was accompanied by liberal tax policy, high tariffs on import of consumer goods and the liberal tariff policy on intermediate and capital goods, low interest on loan for industrial sector and even appreciation of rial against U.S. dollar to encourage import of intermediate and capital goods and also to offer foodstuff at low prices for the urban consumers.

We can mention some important points regarding the implementation of ISP in Iran during 1960s and 1970s. Due to a liberal tariff rate for the import of intermediate and capital goods, it was cheaper to buy from abroad than from domestic firms. Thus, import-substituting firms in these sectors were largely left unprotected. Secondly, increased dependence on foreign technology resulted in small employment gains. Finally, the foreign exchange policy, which was in favor of import of intermediate and capital goods and foodstuff, slowed down the rate of growth of agricultural and traditional sectors.

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[4] . Patnaik Prabhat, "What☐ever Happened to Imperialism "Tulika , New Delhi, 1995.pp175.

Economic development plans

The first plan (1948-1955)

The process of planning for development in Iran dates back to 1935. During the World War II and the subsequent occupation of Iran, however, planning was interrupted and suspended. The process was revived in 1948 with the onset of the first seven-year development plan (1948-1955). The plan involved nationalization of oil production, and the Iranian government was boycotted by the west. Despite the participation by two American companies in the preparation of the plan, the agreement of American government to give a $ 25 million loan for the implementation of the plan was withdrawn. The first development plan started with a planned expenditure of 62 billion Iranian rials, but later it declined to 21 billion rials due to the shortage of financial resources and lack of qualified human resources. Therefore, the plan implementation was imperfect.

The second development plan (September 1955-1962)

This plan was started after the CIA coup and overthrow of the national government. It saw resumption of oil exports and foreign financial resources and participation of western consultants in the preparation of the plan. The second plan's attention was the same as that of the first plan, namely, to build new infrastructure for the whole economy, transformation and development of technology and mobilization of human power. It is interesting to note that these two seven-year development plans did not have the characteristics of a real development plan. Their attention was only on the implementation of a series of governmental projects. The third, fourth and fifth five-year plans that took place between 1962 and 1978, can be called development plans in a fuller sense.

The Third, fourth and fifth development plans

The period of development plan declined to five years. The political situation that was not stable during the previous two plans had become stable now. The targets of these plans clearly indicated that a new economic era had started. From 1962 to 1978, Iran performed three sets of five-year plans. The credit allocation to third plan increased to 204.6 million rials from 75 million rials in the second plan and further to 506 million rials and 33678.7 million rials in the fourth and the fifth plans respectively. The dramatic increase in the credit allocation in the fifth plan was related to a rise in oil prices in the international market.

Table 2 shows sectoral growth rate of GDP for the three development plans. The average annual real rate of agriculture growth during fifteen years is 4.4 present which is a higher rate in comparison with the experience of other developing countries in the same period, but less than one-third of the average growth of the industrial sector. Another outstanding point is the average annual growth rate of GDP, which is 9.3 percent for fifteen years.

Table 2: Average annual growth rate of Iran's Five Year Plans (in percent)

Sector	Third plan (1963-1967)		Fourth plan (1968-1973)		Fifth plan (1974-1978)	
	Target	Actual	Target	Actual	Target	Actual
Agriculture	NA	4.6	4.4	3.9	7	4.6
Industrial and Mines	NA	13.7	12.4	13	18	15.5
Services	NA	8	7.5	14.2	16.4	15.3
Gross Domestic Production	6	9.7	10	11.4	NA	6.9

Source: Annual Reports, Central Bank of Iran, various issues.

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In Table 3 there is a comparison regarding the credit allocation to different sectors during the first five plans. In the first plan 40.4 and 29.1 percent of total credit were spent for agriculture and industrial sectors respectively. However, it has been reduced to 23.1 and 8.4 percent in the third, and 6.6 and 18 percent in the fifth plan. Therefore, we can say that the plan orientation was shifted from agricultural to industrial sector.

Table 3: Five Year Plans and Credit distribution to agricultural and industrial sectors   (In million rials)

Plans	Agriculture and irrigation	Industry and mining
First plan (1948-1955)	5.7 (40.4)	4.1 (29.1)
Second plan (1956-1962)	17.4 (20.9)	7 (8.4)
Third Plan (1963-1967)	47.3 (23.1)	17.1 (8.4)
Fourth Plan (1968-1972)	41.2 (8.1)	113.1 (22.3)
Fifth Plan (1973-1978)	30.9 (6.6)	84 (18)

Note: Figures in parenthesis are percentage allocation of total credit to the respective sectors.

Source: Annual Report of IRI Central Bank, various issues.

Per capita income increased from $176 to $2,160 between 1963 to 1978 which raised demand for both agricultural and industrial commodities. For example, per capita demand for red meat increased from 8 kg per annum in 1959 to 18 kg per annum in the early 1970's, and it was increasing at a rate of 12 percent per annum as compared to an average annual increase of 9 percent in the local production of meat.[5]

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[5] Afshar Haleh. "An assessment of Agriculture Development policies in Iran ", World Development , Vol. 9 , Aug-Dec. 1981, P,1010.

The strategy of industrial development and the process of industrialization were based on the expansion of consumer industries, intermediate good industries, and finally of basic industries. Efforts were made to transform the Iranian economy from exporting oil and traditional commodities to exporting industrial and agriculture commodities in the international market. Industrial sector during these plans grew at a rate of 12 percent per year, because of which the share of the value added by industry in GNP increased from 16.4 percent to 19.2 percent over these fifteen years.

Table 4 shows import of industrial commodities in pre- and post-plan implementation periods. According to the table, import of consumer goods was 30.2 percent of total imports in the pre-plan period and fell to 18.6 percent in 1978, while import of intermediate goods and capital goods increased from 49.2 and 20.6 to 54.2and 27.2 respectively in the same period. In other words, Iran has become more dependent on technology of capitalist countries.

Table 4: Import of consumer, intermediate, and capital goods in (1960-1978)

(percentages)

Commodity	1960	1970	1978
Consumer goods	30.2	10.9	18.6
intermediate goods	49.2	64	54.2
Capital goods	20.6	25.1	27.2

Source: Annual Report of central Bank of IRI, various issues

Data about export and import of staple food show that the import of rice and wheat grew faster than the average annual growth rate of production during the period between 1959 to 1972. Rice production increased from 540,000 tons to 1,008,000 tons and wheat production from 2,929,000 tons to 4,398,000 tons respectively. While export amount fell from 1170 tons to 212 tons for rice, rice and wheat import increased from 56 tons to 91,872 tons and from 9,851 tons to 771,323 tons receptively in the same period (see table 5).

Table 5: Productions, import and export of Rice and Wheat (1959-1972)

	Rice (tons)			Wheat (tons)		
Year	Production	Export	Import	Production	Export	Import
1959	540,000	1170	56	2,929,000	NA	9,851
1961	400,000	140	11,281	2,93,367,5	NA	138,321
1963	573,973	1770	933	3,46,814,0	NA	70,900
1965	681,335	3157	47,818	3,648,713	NA	198,178
1957	640,000	1360	10,187	3,800,000	74,463	61,805
1969	1,350,000	305	5,676	4,360,000	611	22,639
1972	1,008,000	212	91,872	4,398,000	NA	771,323

Source: Ministry of Agriculture, development of National Statistics,

The above discussion can be summarized briefly:

The experience of planned development in Iran appears to be successful in ensuring expansion of industry and in terms of achievement of high rates of growth. The rate of growth of Iranian economy was the highest in the 1960s and 1970s, but it was not achieved through the export of (non-oil) primary and agricultural commodities as was the case with only underdeveloped countries in 1950s and 1960s, oil revenue was the main sources of economic development. Consequently, it became more and more dependent on its oil sector and on the international market reflecting the fact that it was getting enmeshed in the international economic order at an increasing rate.

The main target of economic development was to reduce the deficit in the balance of payments by following the import-substitution policy and putting more emphasis on local production. What happened in reality was totally different. We observe that import of agricultural commodities increased and the industrial sector became more dependent on imports from other countries. It should be noted that in the third year of fifth development plan, Iranian industrial exports were $105 million or just 1.1 percent of her foreign exchange revenues.

The pattern of development and planning in the post revolutionary Iran

The first nine years after the revolution in Iran have been described as a period of plan holiday. During this period no planning was done. The major reason for this was the eruption of sharp differences within the ruling elites as to which economic approach was in line with the Islamic doctrine. These differences basically arose from the question as to whether the market economy or the planned economy was appropriate for Iran to follow. Another major reason that stopped the planning process was the eight-years war with Iraq (1980-1988). The government in the years 1984, 1987 and 1988 had submitted the five-year plan that was not approved either by the *Majles* or by the Guardian Council. Finally, a year after the end of the war, the *Majles* approved the plan. Post-revolutionary Iran was able to implement only two development plans during the two decades after 1979. The political atmosphere during these two plans was fundamentally different from those what prevented during the plans implemented in the pervious regime. The *demand side approach* that was backed by Keynesians in the advanced capitalist countries and former Soviet Union in 1960s and 1970s lost its appeal in favor of the *supply side approach*. Thus, in our analysis attention should be given to the new atmosphere which we witness in the plans' perspective, where state intervention was looked upon as an important source of damage to the economy. Frequently the policies talked about privatization and cut-down in the size of the government and elimination of state's role in industries. Finally Iran's government followed the liberalization and export promotion policy (EPP), and there was a devaluation of rial against foreign currencies.

During the fourth year of the first plan, in the wake of wide-spread social protests against rising rate of inflation and growing unemployment, the government was forced to revert back to the war period government economy policy. In the middle of the second plan (1997) a new government came to power that did not adhere to the monetarists' argument.

The targets of the first five year plan (1994-1999)

It is possible to identify the main targets of the plan as follows:

The GDP was expected to grow at an average growth rate of 8.1 percent annually at constant prices (1988) and the per capita production at a rate of 4.9 percent on an average.

An increase in non-oil export was targeted during the plan, to make possible a diversification of the foreign exchange sources of the country. It was expected to reach a total of $1736 million over the plan.

The rate of expansion of the total private sector liquidity (money and quasi-money) and rate of inflation was targeted to be limited to an average rate of 9.4 percent and 15.7 percent respectively.

Unification of the exchange rate at the end of the plan[6]

As we have mentioned above one of the important plan targets was to raise the rate of GDP growth, which had declined after the revolution and in particular during the second half of the war and in 1986 when oil prices fell in international, market. An estimate shows that the GDP in the year just before the first plan (1987), decreased by 19.9 percent at constant prices as compared to the year before overthrow after shah's regime in 1979.[7] The plan target was to achieve an annual average rate of growth of 8.1 percent in real GDP, but the actual rate was 7.1 percent, which was close to the target. (see table 6).

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[6]. Plan and budget organization,"The five year plan" Tehran 1988.
[7]. Ibid, pp.216-231.

Table 6: The rate of Growth of Gross Domestic Product in the first five year plan after Revolution

(1989-1995)

Sector		Agriculture	Oil	Industry & mines	Water & electricity	Services	GDP
1989	Planned	4.2	21.4	14.8	6.5	5.1	7.9
	Actual	3.7	7.7	6.6	11	1.8	4.2
1990	Planned	4.6	9.6	14.2	7	7.1	9.2
	Actual	8.1	19.6	13.6	14	9.7	11.5
1991	Planned	6.1	3.4	14.6	14.6	7.2	6.8
	Actual	5.1	11.12	17.2	15.3	9.9	10.12
1992	Planned	7.1	11.3	6.4	5.3	7	8.5
	Actual	7.4	2.1	4.7	8.5	8	6
1993	Planned	8.5	3	13.8	47.8	7.1	8.4
	Actual	3.5	5.5	21	9.4	2.9	3.3

Sources: Economic Report of Central Bank of IRI, various issues.

Increasing non-oil export was in the agenda of Iranian policy makers during both the pre- and the post-revolutionary periods. The targeted non-oil export revenue was $17.36 billion during the plan, but in reality, it could reach just $ 11.7 billion in the first five-year plan. A moderate rate of inflation was an objective the government in the 1970s as well as in the post-revolutionary period, during the eight-year war. Control over the rate of inflation was an important task of the post-war government too. According to the plan target the rate of inflation was to decline from 18.5 percent in the year just before the first five-year plan to an annual average of 15.7 percent, but it came down only to 17.6 percent in terms of the retail price index, which is close to the plan target. However, taking into account the GDP price deflator, the average rate of inflation during the plan period has been around 25.3 percent, which shows a huge gap between the planned and actual rate of inflation.

Another important aspect of liberalization was an attempt towards unification of foreign exchange rate, but again the government was not successful completely, although it

reduced the number of foreign exchange rates and devalued the rial. Even so, there was a considerable gap between the official rate of foreign exchange and the black market rates at the end of the second plan.

The second plan (1994-1999)

The second five-year plan was started with three important targets: an annual average rate of growth of 6 percent, limiting the rate of inflation and the rate of unemployment to 13 percent and 9 percent respectively, an increase in export of non-oil commodities from $17.36 billion to $32.33 during the second plan [8].What happened in reality was a failure to achieve plan's predictions. Perhaps three reasons were responsible for this failure. First, there were no unused capacities in the economy (as during the war when the economy was working at full capacity) as was available during the first plan. Second, in the first year of the second plan, oil prices fell drastically in the international market, and the government chose contractionary policy in order to stabilize the economy. Third, repayment of foreign loans which had helped the government to keep a high rate of growth in the first plan period, and interest payments, weakened the growth potential during the second plan. Thus, the annual average rate of growth stood at just 3 percent, which was half the anticipated rate. Inflation rate not only did not decline from 17.6 percent to 13 percent but increased to 26 percent, and the rate of unempolyment increased to 16 percent from 13 percent while the plan target was to X it to 9 percent. The plan target was to increase export of non-oil commodities to $32.33 billion but during three years of the plan it increased to $11.18 billion only, and there is little hope that it will achieve the target.

Poverty and Income Distribution

Income distribution is a complex matter in macroeconomics. Shortage of data and information on income distribution in developing countries makes it even more difficult to study it. Of course, political factors add to this problem in countries like Iran where

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[8].Ibid ,pp. 1-10 .

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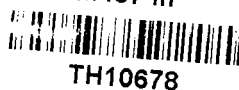
governments are unwilling to undertake such studies. One of the reasons for this is that, the upper income groups manning the government have been receiving the significant benefits of economic growth in these countries. Income distribution studies began in early 1970s when Iranian government showed an interest in it. The analysis below considers both the pre-revolutionary and the post revolutionary periods. Section I deals with income distribution during the Shah's regime (periods of 1960s and 1970s). Section II discusses income distribution during the war period. We will discuss the early years of the post-revolutionary and war periods and liberalization period separately.

Income distribution in the pre-Revolution period (1960-1978)

Until 1974, there was not any serious study on poverty and income distribution in Iran. Perhaps International Labor Organization's (ILO) work (1973) is the first study about poverty and income distribution in Iran. ILO study includes consumption, urban and rural household expenditure and income distribution for the period 1969 to 1970. Accordingly, the Gini coefficient of income distribution for urban and rural areas was found to be 0.6 and 0.7 respectively. The urban higher income group has large positive savings and the rural lower income group has large negative savings. It is interesting to mention some important points of the ILO's study:

Income distribution in large cities is more equal than in smaller ones except Tehran, where the inequality is the highest.

Income distribution in urban areas seems to be more unequal than in the rural areas.

Inequality appeared to be higher in labor-intensive sectors than in capital intensive sectors.

Azimi's work (1977) shows household consumption for both urban and rural areas. The period of study covers two years only, 1975-1976. According to the study, 47 percent of the urban population and 48 percent of rural population had poverty in form of nutrition in Iran. Pesaran and Gahvary's paper (1978) is a study of "growth and distribution" in Iran during 1960 to 1974. Their result shows increasing inequality of income distribution in this period. Azemi (1992) has also found that income distribution has become more

unequal in the period 1973-1978.[9] Finally, Looney (1982) summarized his idea on poverty and income distribution in the following words: "... while one might make a good case for an increasing disparity of income during the 1960s and 1970s, there is no evidence of increasing poverty. Quite the contrary, poverty seems to have lessened somewhat dramatically during the 1970s".[10]

Poverty and Income Distribution in the post- Revolutionary (1979-1995)

This section is divided in two parts. Part one covers nine years from 1978 to 1988, which in turn is divided into two sub-sections— one covering the period 1978 – 1984, and the second the period 1984 – 1988. Part two covers the liberalization period from 1989 to 1997.

Part one
War economy, Poverty and Income Distribution (1978-1984)

I. Redistribution of economic assets (the land reform and nationalization of industries and other assets): In the earlier years of the revolution many economic assets which belonged to the big comprador bourgeoisie and modern landed classes that had close ties with the previous regime were appropriated. The nationalized enterprises went under the ownership and control of the government; properties were put under the control of the Foundation For the Oppressed (FFO) and other foundations and agricultural lands were either distributed among poor peasants or went under the control of the agriculture ministry. In a report about the FFO it is mentioned that "(T)he holding of the FFO in 1982 consisted of 203 mining and manufacturing enterprises, 472 commercial farms, 101 construction companies, 238 trading and other service enterprises, and 2,780 real estate properties".[11] Distribution of about one million hectares of land among poor peasants, distribution of a significant part of the surplus generated by public enterprises among the

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[9]. Azine Hossen, 1992, pp. 205.
[10]. Looney 1982, pp.253.
[11]. Behdad ,1989,pp328-229 and Bank Markazi Iran." A survey of National Economic Conditions , PP 270

workers, and a decline in the income disparity between the blue-collar and white-collar jobs suggest a decreasing inequality in the early years of the post-revolutionary period.

II .The pries policy and tax policy: The Mehran's study (1975), shows that the taxation policies had no effects on income distribution in the pre- Revolutionary period. In the post-Revolutionary period the government changed the rate of taxes thrice—in April 1979, in May 1980 and in October 1982 . The new rates were slightly progressive and favored lower and middle sections of the middle-income households and were unfavorable to upper and higher middle households. These left unaffected the low income workers of agricultural sector and workers of small enterprises in urban societies, because they were out of the tax net even in the earlier regime. The reduced rate of taxes were applicable in the private as well as the public sectors. In addition, the Government, in order to control inflation, planned to follow a price policy that was favorable to low income and lower middle income groups, making them acquire essential goods at low prices, although the higher middle class could also get the benefit of this price policy. An increase in the minimum wage rate in the months after the revolution also contributed to reducing income inequality.

Table 7: Gini index based on Expenditure Measures for Urban and Rural areas (1977-1984)

	1977	1979	1980	1982	1983	1984
Gini index for urban areas	0.04998	0.04702	0.0404	0.04168	0.04282	0.04205
Gini indx for rural areas	0.04375	0.04789	na	.04.51	0.04161	0.04293

Source: Tables 5 and 8, Bahdad (1989).

Table 7, shows Gini index based on expenditure for both urban and rural areas during 1977-1984. As the table shows the Gini index for urban areas declined from 0.4998 in 1977 to 0.404 in 1980, but the trend got reversed during 1982 and 1983. It again declined in the last year of the estimate. In other words, the gap of expenditure distribution of urban households has become narrower in the post-Revolutionary period. The Gini index for rural households shows a different pattern. The index has declinnd from 0.4375 in

1977 to 0.4051 in 1982, but the trend got reversed in the subsequent years. Despite the fact that there is a reversal in trends in the later years overall income distribution has improved in the post-revolution period, as the table suggests that the Gini coefficient in 1984 is smaller than in 1977.

Section two (1984-1988)

There is a consensus among economists that during the period 1984-1988, both poverty and income inequality has increased. The expensive and protracted eight-year war with Iraq, economic embargo imposed by the United States on Iran, sharp reduction in oil production and a steep fall in the oil prices in the international market (1987) can be considered as important factors for a 19.9 percent decline in the real GDP in 1988 as compared to 1978, and this, in turn, can be said to be one of the reasons for increasing poverty in the post-Revolutionary Iran in general, and during this five-year period in particular. But for factors affecting income inequality we should explore other possible reasons. As one of the fundamental targets of the revolution was ensuring equality, a redistribution of wealth and income, provision of jobs, shelter and education to people by the government, found place in the constitution. From the very beginning of the revolution, the conservative clergy and *bazaris* had focused their attack on the trade nationalization law and the land reform law in this original form, and they succeeded in stopping the implementation of the trade nationalization and the land reform laws. The corruption in the distribution of rationed commodities, the benefit of which was appropriated by the *bazaris*, was another reason for worsening of income distribution in the period 1984 -1988.

Part two

Liberalization, Poverty and Income Distribution (1989-1997)

The liberalization period saw the implementation of the two five-year plans during 1989-1997. Here first we consider in brief the arguments of liberalization ideologists for resolution of poverty and income distribution, then we will focus our discussion on two

opposite claims: one claiming that the income distribution has improved during the first five-year plan, and the other claiming just the opposite in the light of these arguments.

The main arguments in favor of liberalization have two central points regarding increasing the welfare of society and equality among people: (1) reducing the consumption level of society in order to increase savings, and (2) increasing the share of profit in the gross national production that will reduce the rate of unempolyment and improve the standard of life of poor. As a result, in the long run, when the level of investment increases, the share of profit will decline, and the disparity among factors of production will get reduced. The ideologues put some pre-condition in order to achieve these liberalization targets. One of which is a high and steady growth for a long period. As we have mentioned earlier, in the last one hundred years Iran has experienced only fifteen years (1962-1977) of high and steady growth. During liberalization period, we observe that in the first five-year plan there was a high rate of growth, but when unutilised capacity got exhausted, the rate of growth came down considerably. Secondly, they put an increase in the share of net fixed investment in GNP in general, and in industry and agriculture, in particular, as another pre-condition. But, what we see in Iran is that the share of services in total capital formation is quite high, as in other underdeveloped countries, because of a high rate of profit and a high degree of security. Therefore, this sector, with less employment generation potential, absorbed a significant part of investment. Moreover, only 30 percent of gross investment in the fourth year of the first five-year plan was net investment.[12] The third pre-condition put forward is that in order to reduce unemployment, the emphasis should be on capital saving technology. However, the actual experience was not the same as these ideologists imagined. The experience tells us that the technology that has been used in the first five year plan and subsequent years was capital intensive.

Let us, now, consider some of the studies on the actual trends in poverty and income distribution during this period. Pajoohan study (1996) focuses on income distribution in urban and rural areas in the period 1989-1993 in terms of distribution of household expenditure. His study suggests that the distribution of food expenditure in urban area improved after the adjustment policy. Accordingly, the Gini coefficient came down from

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[12] . Dini 1997. Pp127.

0.416 in 1989 to 0.292 in 1993 .The shares of 40 percent of the urban population at the bottom and that of 20 percent at the top in total food expenditure in1989 were 14.7 and 47.7 percent, respectively in 1989, which became 21 and 38 percent, respectively, in 1993. Pajoohan estimates for rural areas show the opposite trend. Finally he concluded the adjustment policy had positive effect and 3.2 percent of urban poor could improved their position and shift to above poverty line in 1994. Dini's work (1997) is a study of the adjustment policy and malnutrition in Iran. He has used the Engel index as a measure to estimate poverty and malnutrition in the post-Revolutionary period in general and the Liberalization period in particular.

According to his estimate the amount of calories per day consumed by urban and rural population in 1989, were 2472 and 2599 units respectively, which is higher than the average per capita unit calories considered necessary (the necessary amount of unit calorie is suppose to be 2300). While shares of red meat and bread in total foodstuff expenditure for urban and rural households were 34 and 53 percent and 11.8 and 8.3 percent respectively in 1977 these have change to 46.2 and 59.31 percent and 4.1 and 2.2 percent respectively, in 1987. The trend however changed in 1989, which suggests that Iranian people substituted bread for meat which was a sign of increasing malnutrition. The important part of the research focused on the adjustment policy and poverty in 1989-1994. Dini found that the Engel index on base prices, for rural areas came down from 47.4 percent in 1990 to 37.3 percent in 1992 and it increased to 52.1 percent in 1994, that nutrition conditions under the adjustment policy for rural people have become worse. The index for urban people rose from 32.6 percent in 1990 to 37.8 percent in 1992 and then fell to 29.9 percent in 1994. The author argued that the falling Engel index in 1994 does not mean better nutrition conditions for urban people, because bread substituted for other foodstuff. The study has suggested two important points: in the post-Revolutionary period poverty increased and the level of nutrition in Iran has become worse in general, and adjustment policy has increased malnutrition in particular.

In the second five year plan period we observe that the rate of growth came down and rate of inflation and unemployment increased. Iran could not hope to reduce poverty and malnutrition under these circumstances. In sum, the high and steady rate of growth in 1960s and 1970s could not narrow the gap between poor and rich but there is no evidence

of increasing poverty. Although the earlier years of the post-Revolutionary period inequality became narrow, in subsequent years the trend changed. Poverty in the 1980s and 1990s increased.

Literature Review:

We will examine works of others which deal with the inflationary theories and Iranian economy, published both in English and in Persian. Though a whole specific chapter will not be dedicated to the literature review, it will be undertaken in each chapter wherever relevant.

Hypothesis of the Study:

The proposed study intends to verify the following hypotheses:

The Iranian inflationary process is not a monetary phenomenon caused by a single reason and may have various reasons in different periods of time.

Inflation in Iran has deep rooted linkages with the dependency of its economy to the advanced capitalist countries.

a. dependency of the foreign exchange revenue and of the general budget to the oil revenue.

b. dependency of output to imported inputs.

Increased supply is the way of keeping down the rate of inflation. And any tight fiscal and monetary policy will involve the Iranian economy in stagflation, since it can not affect the demand side without also affecting the supply side through reduced investment in infrastructure (in the case of public investment cuts) or through reduced availability of credit for production (in the case of tight monetary policy).

Methodology

Methodology for the study is exclusively based on the secondary sources of data collected from books, journals, and articles, and the publications by the Iranian Central

Bank, the Iranian Budget and Planning Organization, the Center of Statistics of Iran, and various other institutions. The study uses the historical analytical method and relies on both quantitative and qualitative analysis

The plan of the study

The study intends to focus on the causes of inflation during the period of 1960-1998, but will also briefly discuss the inflation in Iran since 1941 till 1960. The introductory chapter gives a background on some important characteristics of the Iranian economy. The next two chapters, which are empirical and theoretical, will be the core of this thesis. In the empirical chapter, we will examine whether there is any tangible relation between money supply and output. And in the theoretical chapter, we first critically study "the quantity theory of money", then go on to Keynes' theory of money, new monetarists' theory, and structuralist's theory on causes of inflation. Second, we will discuss the various causes of inflation in the Iranian economy. Chapter four will address inflation in the Iranian economy during the 1970s, where the oil boom played a major role in raising prices in Iran. We will argue that excess demand is the main reason for the rise in rate of inflation in Iran during the 1970s. The fifth chapter is devoted to inflation in the Iranian economy during 1980-88. In this chapter, we will argue that excess demand was the reason behind the increasing prices during this period- the war time. Chapter six deals with liberalization in the post-war economy period of 1988-98, when the devaluation of rial made the Iranian economy experience cost-push inflation for the first time. The various aspects of anti-inflation policies will be discussed in chapter seven. After arguing that the cause of inflation in Iran is not a monetary phenomenon, that cutting down money supply cannot stop rising prices without causing stagnation, we will suggest some policies in order to cope with inflation in Iran. The conclusions are detailed in the final chapter.

Chapter 2

Empirical Work: Inflation in the Iranian Economy Since

1962-1995

Chapter 2:

Introduction

Inflation before the 20th century had different face from what it has today. As Hume mentioned in the 17th century when the new world was discovered, substantial quantities of gold and silver flowed to Europe and were changed to money, and it created inflation. Of course the nature of inflation in industrial countries has totally changed from the time that Hume was writing. Before the 19th century in Iran, drought was the major reason for inflation but the analysis of inflation has been more complex when foreign exchange revenue and the government budget started to depend on oil money in the early 20th century. Therefore, any analysis of inflation in the Iranian context must consider the of the dependence of the economy on oil revenue. This chapter is the empirical one that will be divided into six sections: we begin with pre-1960s inflationary period as the first section, and the next will be a discussion on inflation in the 1960s and our attempt is to argue that the major reason for low rate of inflation was because of price stability in its trade partner countries. The third section will pay our special attention to the oil-boom and its effect on excess demand in Iran in the 1970s. The next section also will be discussing excess demand in the 1980s. The fifth section that is concerned with liberalization will argue that the cost-push element is the major factor behind inflation in the 1990s. In the last section, we will use regression to interpret relation between two variables, income and money supply. Conclusions will be contained in the last section.

Section One
Inflation in Iranian economy since 1960s

In this chapter, we try to draw a picture of Iranian inflation since the 1960 until 1990s, but before we embark on a discussion of Iran's inflation trends in the post 1960s period,

it is necessary to give a brief picture of the pre-1960s scenario. We may divide the pre-1960s inflationary period into three episodes.

The First Episode (1941-1945)

There were perhaps three reasons behind the inflation during in this period; the limitation of import, hoarding and speculation that reduced aggregate supply, and finally devaluation. When the Allies wanted to occupy Iran (1940), they promised non-intervention in the country's internal affairs and an immediate departure from Iran at the end of the war. They also promised full payments for reparation as well as for their use of the country's economic resources. This payment was to be made later. The Allies occupation had been creating excess demand for commodities financed by money printed against foreign assets which were like "IOUs" to be redeemed later. This created inflationary pressure on the economy. The inflation was further worsened by devaluation, which was not an outcome of any balance of payment problem, because trade balance was insensitive to exchange rate. Iran, in this situation, devalued RIS (Iran's currency) by more than 100 per cent, from 68 rial to 140 rial against a pound sterling, and from 17 rial to 35 rial against an American dollar (and almost same proportion for other foreign currencies). This devaluation was undertaken at the behest of Allies forces in order to obtain cheap commodities for occupation forces during the war and to help bring down Iranian future claims on the latter. As a result of devaluation, Allies forces' demand increased (because after devaluation their purchasing power increased) and the aggregate demand rose while the country was involved with low elasticity of the supply of goods. Therefore, excess demand could not be covered by supply and the economy evolved with inflation due to demand-pull.

The devaluation policy was inflationary for the following reasons. First, expansionary monetary policy in the circumstance described above was entirely inflationary because the increasing money supply was intended to enable the Allies to get local currency in order to cover their expenditures in the country. Secondly, Britain and the Soviet Union had given separate agreements that 60 per cent of Iranian annual trade surplus with Britain, and the whole of the annual

credit given to Russia must be repaid after the war, in gold, according to the new rate of exchange of the rial (or the rate of rial after devaluation). Thirdly, two factors can be considered as follows. i) The demand for Iranian exports (or the demand of the Allies forces for Iranian goods and services) was perfectly inelastic on the one hand. ii) Iran's demand for its import was highly inelastic on the other hand. The government's anti-inflation policy was pricing policy, constant credit policy, and rationing that could not halt the inflation. The index of living cost during the first two years of the war rose by 312 percent.

The Second Episode: Imported Inflation

A closed economy where foreign trade is absent can never experience imported inflation. In other words, we can have an imported inflation only in an open economy. Hence, we can define imported inflation as an increase of the imported production factors, such as laborer, materials, technology, capital, etc. Iran's domestic prices, as is to be expected in the case of a small country, were a function of the world prices. Therefore, after the Second World War and during the Korean War, the Iranian economy experienced the first and the second imported inflation respectively.

The first imported inflation

After the end of the Second World War, the rate of inflation declined because the majority of occupation forces left the country. On the one hand, as Iran's imports increased and the domestic production rose consequently, the aggregate supply increased. Table 1 provides information about Iranian import during the period of 1938-1948.

Table 1: Iranian import (in volume and value) in 1938-1948

(Million tons and billion rials)

Year	Volume	Value
1938	0.65	1.19
1940	0.41	1.02
1941	0.34	0.74
1942	0.38	2.39
1944	0.46	3.35
1946	0.81	5.23
1948	0.69	5.48

Source: Razzing. E, 1992,Table no 74.

As can be observed from the table, when the Second World War began in 1941, Iran's import declined both in volume and in value. For instance, it fell from 0.65 million tons to 0.34 million tons in volume and from 1.19 billion rials to 0.74 billion rials in value during 1938 and 1941 respectively.

During 1944 to 1946, immediately after the Second World War, Iran's import increased from 0.46 million tons to 0.81 million tons in volume, and from 3.35 billion rials to 5.23 billion rials in value. The important point of the table relevant to Iran's import during 1946-1948 is that its volume declined from 0.81 million tons in 1946 to 0.69 million tons in 1948, while its value increased from 5.23 billion rial at the 5.48 billion rial in same time (see table 1). It means that Iran's trade partners were experiencing inflation immediately after the Second World War when boom resumed in those countries.

After 1946, prices in Iran again started to rise. Two major reasons can be behind the inflation; one is the internal wars in Azerbaijan, Khuzestan and Kurdistan, and the other one is the increasing budget deficit resulting from rise in administrative expenditure, which effected a rise in the prices. But the main reason was the increase in the international prices (or imported inflation).

Table 2 :Wholesale Price Index of Major Iranian Trade Partners In 1940s (In percent)

Year	USA	U.K	Switzerland	Belgium	Turkey	France	Japan	India
1946	140	161	193	330	429	728	1290	252
1947	176	176	201	355	435	1112	3837	297
1948	191	202	219	389	468	1924	10190	367
1949	180	212	199	370	505	2379	16580	381

Source: Annual Statistics, United Nations, 1950

Table 2 shows the wholesale price index of Iran's trading partner. As observed in the table Switzerland had the lowest rate of price increase during the four years. USA and Belgium were in the second position with regard to inflation while Japan had the highest rate of inflation. It may be surprising that the second lowest rate of inflation in the U.S. and the highest rate of inflation in Japan: This was owing to the fact that the former was the winner and the latter was the loser in the Second World War. The average rate of inflation during this period was around 7 percent in Iran. The government had chosen to reduce the money supply and introduce open door policy in order to control inflation; consequently a huge amount of import caused the falling rate of inflation on the one hand, and created depression on the other .

Traders stopped importing and the supply gradually came to match the demand. In 1949, the prices rose again, and even in such a situation, the government devaluted rial against pound in order to increase exports. For the following reasons, the devaluation policy was not appropriate.

The major part of Iranian non-oil export commodities was agricultural and influenced by the atmospheric fluctuations; therefore, devaluation of rial could not help much to increase export.

The main reason for devaluation should be the creation of a for balance of payment surplus, while it already in surplus.

In inflationary situations, export of less elastic commodity accelerates inflation. Therefore, the devaluation keeps prices up even more. Only in September 1949 when

Britain devalued pound (or rial appreciated versus pound), the rate of inflation fell in Iran.

The Third Episode: Korean War and Imported Inflation

Iranian economy enjoyed low prices for more than a year after the Second World War. When Korean War started, the world economy experienced the first imported inflation experience in the post World War II Period. Between June 1950 to January 1951, the price of primary commodities rose by 60 percent in the international market in reaction to the American army's demand (the demand pull inflation). But it came as cost push inflation in many countries with small production like Iran. Nonetheless, after the 1954 coup, this inflation further came down. In addition, from 1951 to 1962 which was the first year of the land reform, prices continuously increased at an average rate of 6.6 percent yearly.

Summary of Section One

In this section we have discussed the three episodes of inflation in Iran between 1940s and 1950s. Then we have mentioned that the important reason for the inflation in the first episode was devaluation of Iranian currency against pound Sterling and American dollar. We also found out the main reason for inflation in the second and the third episodes, which was imported inflation.

Section Two
Inflation in 1960s

In 1962, Iran initiated a land reform program that changed its socio-economic structure. This program had adverse effects on prices later on (which will be discussed later), in the 1970s.

We find the following reasons for low-levels of inflation in the 1960s. i) The commissioning of the government projects in 1960s that were started in 1950s, which

helped to increase the supply of domestic production. ii) Expansionary monetary policy by the Iranian Central Bank in 1962, e.g. decline of legal deposits from 15 percent to 12 percent, reduction of legal deposits for savings account from 15 percent to 7.5 percent and decline of sight deposits from 40 percent to 35 percent. Therefore the credit policy could make a cheap money supply for investors. iii) Oil price increased enough to cover increasing exchange increasing expenditures, therefore Iran had no problems with the balance of payment in the 1960s. Farther, increase of oil price in the international market enabled the Iranian government enables to import either consumption goods or intermediate and capital commodities for domestic production. iv) The major reason for low rate of inflation in the 1960s was the price stability in the major Iran's trade partners countries (65 percent of Iranian import was from these countries in the 1960s). Owing to the above reasons, the high growth rate of GDP (an average annual rate of 10.5 percent) during the third and fourth development plans between 1963 and 1973 caused the demand to match the supply in 1960s. Table 3 shows the price indices for these countries during 1960s. The average rate of price increase in Iran's major trade partners during the1960s was less than 3.8 percent; for Iran, this percentage was less than 1 percent.

Table3: Rate of Change of Consumption Goods Price of Iran and Its Trading Partners during 1961-1970

Year	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
USA	1.1	1.2	1.2	1.3	1.7	2.9	2.8	4.2	5.4	5.9
Germany	2.3	2	3	2.4	3.1	3.7	1.7	1.6	1.9	3.4
France	3.3	4.8	4.8	3.4	2.5	2.7	2.7	4.5	6.4	5.2
Japan	5.3	6.8	7.5	3.9	6.6	5.1	4	5.3	5.2	7.7
U.K	3.4	4.3	2	3.3	4.8	3.9	2.5	4.7	5.4	6.4
Italy	2.1	4.7	7.5	5.9	4.6	2.3	3.2	1.4	2.6	5
Iran	1.02	0	1.02	1.04	0	0	1.02	1.02	1.04	0
Average of the six countries	2.6	3.9	4.33	3.36	3.9	3.43	2.8	3.6	4.48	5.6

Sources: IMF, World Bank and International Financial Statistics, 1971 and Budget and planning organization of Iran,"Magmoe Amari", 1997.

Therefore, the above factors resulted in an increase in the domestic supply on the one hand and ensured cheap import of consumption and intermediate goods for the industrial sector on the other, which helped to keep down the rate of inflation in 1960s.

Section Third

. Inflation In 1970s

Three events had impacts on the Iranian economy, especially on the rate of inflation in Iran in the 1970s, imported inflation, rise of oil prices in international market and Iranian revolution in 1979. Of course the land reform and the third and the fifth five year plans, which were executed in the 1960s and early the 1970s, had transferred a considerable part of rural population to the urban areas, but the absence of a appropriate increase in the supply of food can be considered as another factor for inflation in the 1970s (we will

discuss it in the next chapter). Without doubt, the phenomenon of inflation in 1970s was one of the important events in political macro economics in the post-war period and it has affected the entire Iranian economy for the past three decades. The attempt below is to analyze the imported inflation and excess demand as the main causes of inflation in the Iranian economy in 1970s.

Imported Inflation in the 1970s

We can look at the imported inflation in two periods; the pre oil boom period before in 1973 and the one after that. The industrial countries had enjoyed low rates of price increase during the post-Second World War period-apart from the Korean War years. According to UN statistics, between 1953 and 1968 the average rate of inflation in 11 industrial countries (including the five major Iranian trade partners) was 2 percent only. But since 1968, the prices started to rise in the industrial countries. The average increase was 4.56 percent in Iran's trade partners between 1967 and 1973. Other data show that between 1970 and 1973, wheat price increased in the international market by two-hundred percent and prices of other essential goods like meat, sugar, cooking oil and cement increased considerably. When the oil boom took place in the international market, the prices rose in all industrial countries. For instance, between 1973 and 1975, the average rate of inflation was 26 percent for all O.E.C.D countries and 39 percent and 13 percent for Japan and West Germany respectively. The countries kept down the rate of inflation with the fiscal and monetary contractionary policy after 1975 on the one hand, and exported their inflation by maintaining high price of export commodities to Third World Countries on the other hand.

Table 4: Composition of Imported Commodities.

Year	Consumption	Intermediate	Capital
1959	30.25	49.14	20.60
1963	24.15	55.52	20.33
1967	12.60	59.723	27.67
1971	11.73	64.84	23.43
1974	15.38	64.50	20.12
1977	18.63	54.17	27.19

Source: Looney, 1982, Table 8.2, pp 150.

Figure 1 : Composition of Iran's Import In (1959-1977)
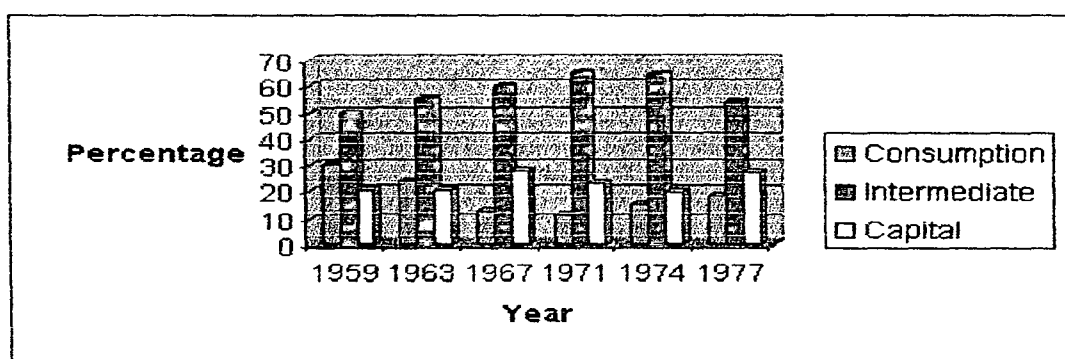
Table 4 shows the Iranian imports from 1959 to 1977 in three categories; consumption, intermediate and capital commodities. Import reduces cost- push pressures, but an increase in its own prices will affect internal prices that can be inflationary. As is observable from the table, 64.84 percent and 54.17 percent of intermediate goods were imported in 1974 and 1977 respectively. The percentages for consumption and capital commodities were 54.17 and 27.19 respectively in 1977. Clearly, there is significant scope for a linkage between increases in international prices in general and of five major Iranian trading partners in particular, and similar increases in Iranian increase prices. Therefore, there is no doubt that one segment of Iranian inflation in the 1970s was rooted in imported inflation when prices rose in the Iranian major trading partners after 1974.

Table 5 shows the trend of prices in Iran and among its trading partners during 1970s. As can be observed from the table, all countries have a single digit rate of inflation before 1973 and this becomes double-digits after the oil-boom.

Table 5: The Growth Rate of Wholesale Price Indices of Iran and its Major Trading Partners, During 1970s.

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
U.S	3.6	3.3	4.4	13.1	21.2	9.2	4.6	6.1	7.8	12.5
Japan	3.6	-0.7	0.8	15.9	31.4	3	5.1	1.9	-2.5	7.3
France	7.5	2.1	4.6	14.7	13.4	5.7	7.4	5.6	4.3	13.3
Germany	4.9	4.2	2.6	6.6	30.9	4.6	3.7	2.8	1.1	4.8
Italy	7.6	3.3	4	17.8	40.8	8.6	22.8	16.6	8.3	15.5
U.K	6.6	9	5.3	7.3	23.4	23.1	16.2	18.2	9.9	10.9
Average	5.63	3.53	3.52	12.6	26.85	9	9.97	8.5	4.8	10.7
Iran	5.5	0.17	6.8	4.8	13.8	17.6	5.7	13	14.4	9.2

Source: International Financial Statistic Year-book, 1990

The rate of inflation for Iran became double-digit immediately one year after the oil-boom, when the prices increased in the industrial countries and imports became costly for Iran.

Rate of Inflation in Iran and Its trading Partners during 1970s

40

Figure 3

Rate of Inflation in Iran and Its trading Partners During 1970s.
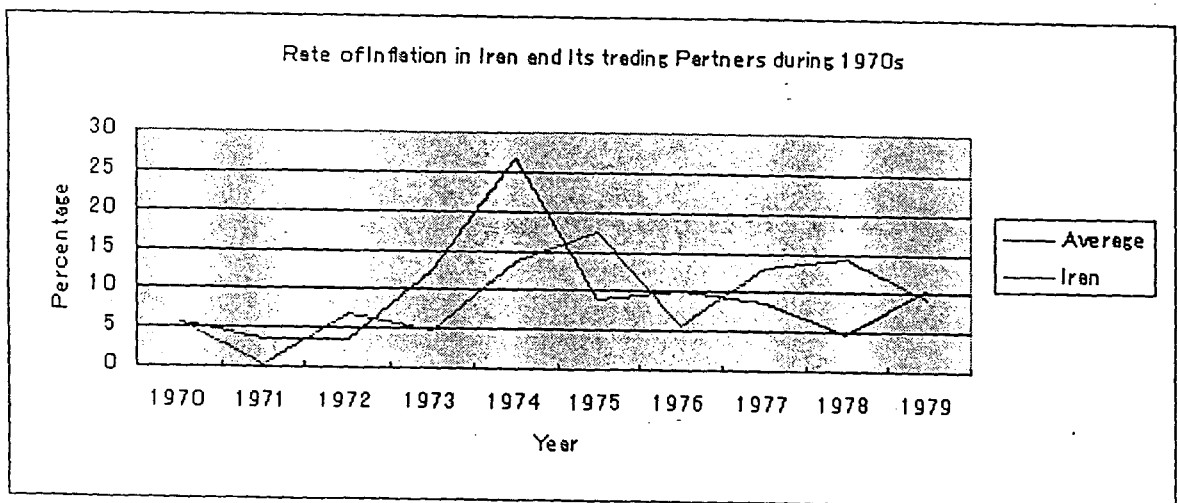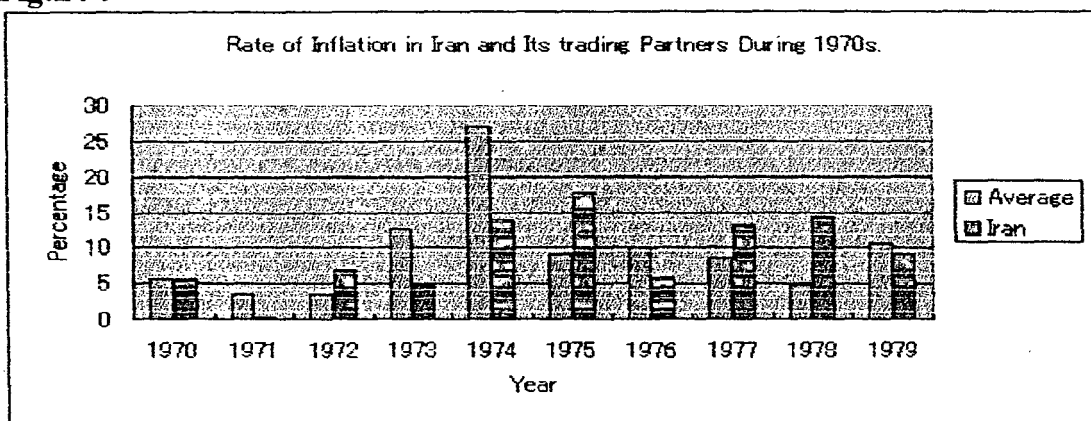
Table six provides the share of oil and non-oil exports and trade balance of Iran for the 1970s. The outstanding point to note is that the share of non-oil export is very small, and it changed from 5.3 percent before the first oil boom in 1972 to 3 percent in 1978. In other words, the share of non-oil export in the total Iranian foreign exchange revenue was coming down when oil price has increased in the international market.

Table 6: Oil and Non-Oil Exports During 1970-1997(in billion $)

Year	Total Exports	Oil & Gas Exports		Non-Oil Exports		Trade balance
		Value	Percent	Value	Percent	Value
1970	922.8		95.4		4.6	NA
1971	1109.3		94.8		5.2	NA
1972	1851.1	3.6	94.7	0.44	5.3	-0.13
1973	6.7	5.6	95	0.63	5	0.52
1974	21.097	20.515	97.2	0.582	2.8	8.58
1975	19.691	19.099	96.9	0.592	3.1	2.47
1976	21.142	20.68	94.5	0.472	5.5	4.08
1977	21.429	20.905	94.5	0.524	5.5	3.55
1978	18.658	18.115	97	0.543	3	4.98
1979	20.127	19.315	95.5	0.812	4.3	8.28

Source: Central Bank of IRI, Centre for Statistics, various years.

Excess Demand

Model of demand pull inflation

Suppose additional revenue due to oil price-hike is S. Let proportion λ be held abroad in foreign bonds and securities. S (1-λ) comes into the economy. Let "e" be the proportion of this S (1-λ) that is spent by the government. Let "m" be the propensity to import out

of this expenditure and the subsequent rounds of expenditure this leads to. Let "d" be the expenditure generated per unit of domestic income created; d<1.

Under what conditions will demand for domestic goods increase as a result of a rise in oil-revenue by S?

$$S(1-\lambda).e.(1-m)+S(1-\lambda).e(1-m).d.(1-m)+S(1-\lambda).e(1-m).d(1-m).d.(1-m)$$

$$= S (1-\lambda).e (1-m) [1+d (1-m) +d (1-m) +.....] = \frac{S (1-).e (1-m)}{1-d (1-m)}$$

This will be positive if $\frac{S (1-\lambda).e (1-m)}{1-d (1-m)} >0$

Condition: i) $\lambda<1$

　　　　ii) $e>0$

　　　　iii) $m<1$

If these conditions are satisfied then domestic demand increases. If supply cannot increase by this much, then the economy will experience with inflation.

i) Government Expenditure

According to the above model, when oil prices rise in the international market, we can expect the Iranian government budget to expand. Table seven provides information about Iran's composition of government expenditure in the 1970s. It is clear from the table that total government revenue increased dramatically from 465 billion rial in 1973 to 1394.9 billion rials in 1974 and it reached 2126.7 billion rials(or 4.57 times) in 1977.

Table 7: The Iran's Composition of government expenditures During 1970s (in b rials)							
Year	Current Expenditure	Share	Development Expenditure	Share in total	Total Expenditure	Total General Revenue	Budget Deficit
1970	124.5	56.3	96.6	43.7	221.1	182.4	-38.7
1971	199.4	63.2	116	32.8	315.4	258.3	-57.1
1972	283.3	68.2	131.8	31.8	415.1	302.1	-113
1973	370.2	69.7	161.2	30.3	531.4	465	-67.1
1974	825.7	70.3	348.7	29.7	1174.4	1394.9	220.5
1975	969.4	64.8	526.8	35.2	1496.2	1582.1	85.9
1976	1083.8	64.7	591.6	35.3	1675.4	1743.8	68.4
1977	1248.1	57.4	926.8	52.6	2174.9	2126.7	-48.2
1978	1387.1	67.9	657.1	32.1	2044.2	1699.3	-344.9
1979	1494.9	74.07	523.3	25.3	2018.2	1791.8	-226.4

Source: Central Bank of IRI, Various years.

Comparing current and development expenditure, the share of the former has always been more than the latter through the decade. The share of current expenditure reached 74.07 percent in 1979 from 68.2 percent in 1972(the year before oil boom). The interesting point is the budget deficit. As we can see from the table, it has fallen from RIs 113 billion to RIs 67.1 billion in 1973 when oil boom begun and the government revenue increased. Budget deficit increased to 344.9 billion rials in 1979 while it was 67.1 billion rials in 1973 before oil-boom. This was despite the increase in government revenue. The fifth development plan was revised upward to accommodate the desire of the government for a high rate of growth.

Another element that affects the excess demand is tax composition. Government, through changes in the rates of taxes, can control or expand investment, consumption and aggregate demand.

The data about tax composition of Iran in the 1970s are provided in table 8. As is observable from the table, 23.6 percent of Iran's government revenue comes from taxes

.The share of direct tax, is smaller than the share of indirect tax (the annual average percentages are 47.6 and 52.4 percent respectively).

Table 8 Composition of Tax Revenue				
Year	Tax Revenue	Total Tax to Total Revenue	Direct Tax to Total Tax	Indirect Tax To Total Tax
1970	70.6	36	38	62
1971	82.2	30	39	61
1972	102.6	32	40	60
1973	131.2	27	40	60
1974	157.8	11	46	54
1975	270.8	17	56	44
1976	342.8	19	55	45
1977	443.6	20	52	48
1978	465.9	25	58	42
1979	368.3	20	62	38

Source: Centre for Statistic and Central Bank IRI various issues .

Figure 4: Composition of Taxes During 1970s
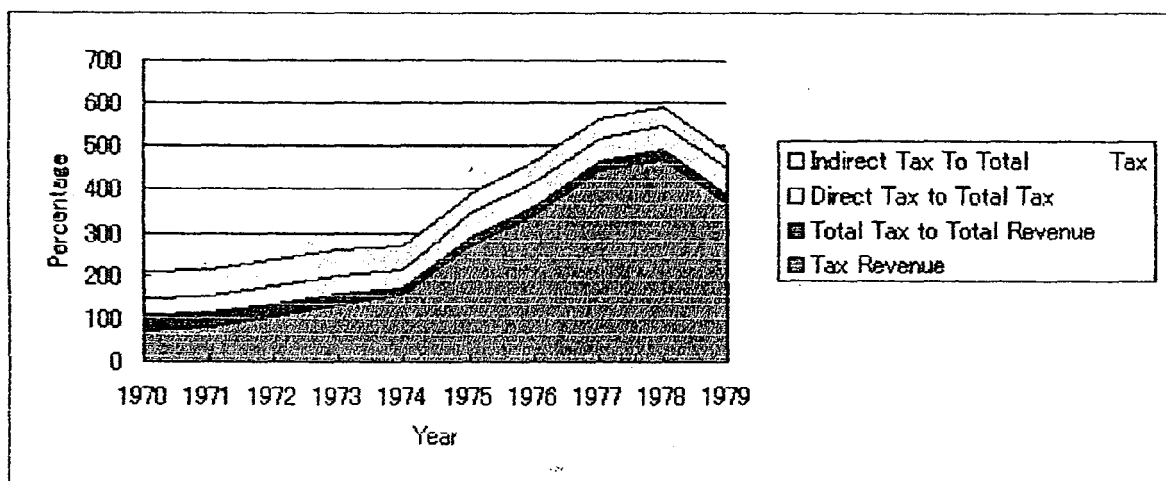
There are two outstanding points to discuss about the table. The first is regarding the proportion of total tax to total government revenue which declined in the post-oil boom period. This means that when oil revenue increases, the government does not pay as much attention to other revenue resources. The second point is that the share of direct tax to total tax revenue increased after the oil boom. As the table shows, the share of the direct tax increased from 40 percent in 1972 to 62 percent in 1979.

ii) Investment

Investment is another factor that has significant impact on aggregate demand. Table 9 shows investment of Iranian government in agriculture, oil and gas industry, and mining sectors both in Rls and in percentage terms. As the table suggests, except the agrarian sector, the remaining sectors show significant increases in investment; this is true especially of investment in the service sector. In addition, the rate of growth of investment in the agrarian sector fell in the late of 1970s in comparison to the earlier decade, while the rate of investment in service sector which was more or less falling from 1970 to 1976, started rising after that. Rate of investment in service sector fell from 65.5 percent in 1970 to 54.4 percent in 1976. By 1979 it had bounced back to 71.6 percent (see table 9).

Table 9: Investment and Percentage of Investment in Different Sectors (1970-1979).

Year	Invt in Agri Sector	%	Invt in Oil & Gas	%	Invt in Industry & mines	%	Invt in Service sector	%	Total I. of Private sect.	%	Total I. of Gov. Sector	%	Total Invest
1970	13.5	7.3	12.5	6.7	38.1	20.5	121.6	65.5	86.9	47	98.8	53	185.7
1971	18.6	8.4	18.2	8.2	40.8	18.3	145	65	102.9	46	120.2	54	222.8
1972	27.5	9.4	30.7	11	49.8	17	184.4	63	153.1	52	139.2	48	292.3
1973	32.6	8.4	35.5	9.2	67.5	17.5	249.9	65	184.2	48	201.3	52.2	385.5
1974	52.8	9.7	49.2	9	103.1	19	336.4	62	218.1	40.2	323.4	60	541.5
1975	72.2	7.6	75.9	8	233.3	25	566.7	60	462.4	49	485.7	51.2	948.1
1976	80	5.3	274	18.4	325.1	22	809.6	54.4	625	42	863.7	58	1488.7
1977	87.7	4.9	226.2	12.7	442.2	24.8	1027.9	57.6	780.1	43.7	1003.9	56.2	1784
1978	69.2	4.4	177.4	11	327.7	20.9	990.3	63.2	502.2	32	1062.4	67.9	1564.6
1979	70.7	6	92.7	7.8	170.2	14.5	842.9	71.6	565.2	48	611.3	52	1176.5

Source: Plan and Budget Organization and Central Bank of IRI. Various Issues.

Figure 5 : Composition of Investment During 1970s

Figure 5 : Composition of Investment During 1970s
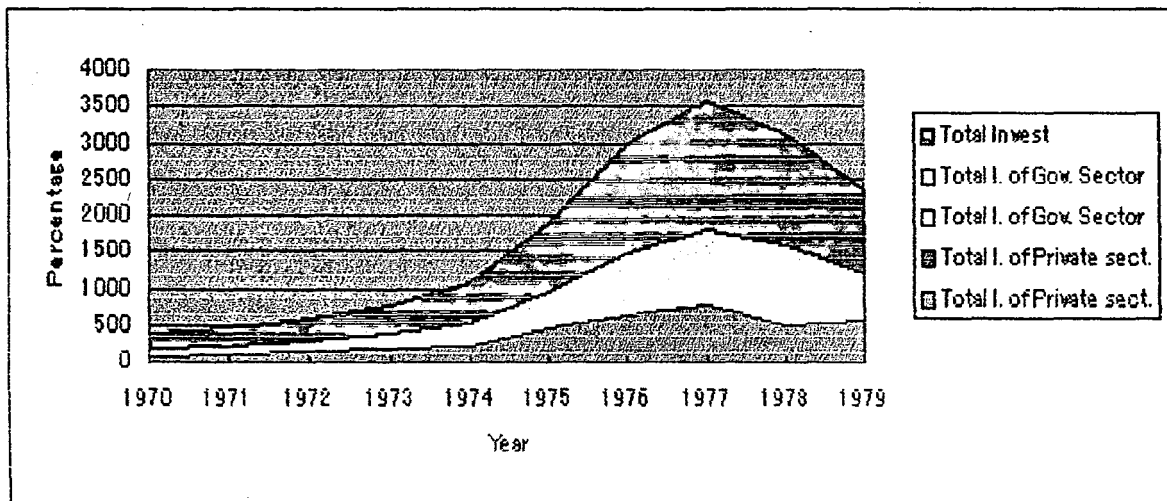
Figure 6

Figure 6
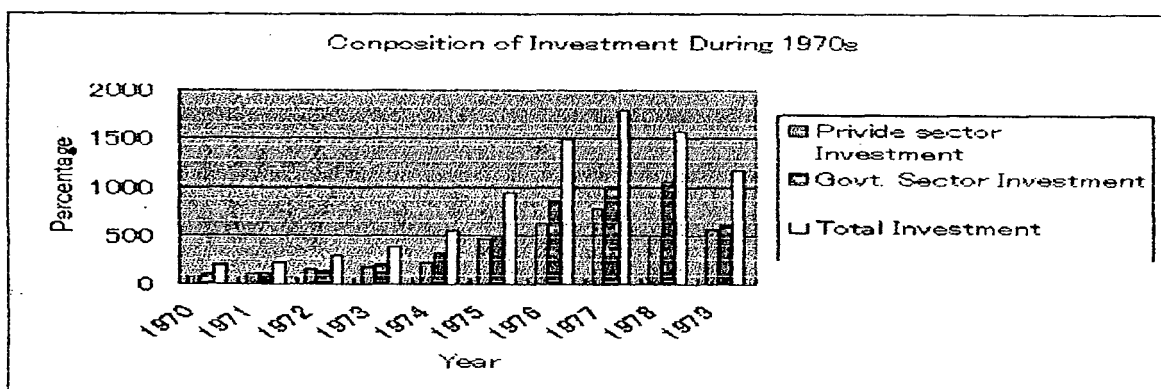
It has been earlier mentioned that the strategy of the Iranian government was to protect the private industrial private sector during the third, fourth, fifth and sixth five year economic development plans, during 1960s and 1970s. And increasing the total investment in 1960s was one important reason for price stability in the decade. The figure shows that total investment increases from RIs 185.7 billion in 1970 to RIs1564.6 billion in 1978, and the share of industrial sector increases from 20.5 percent in 1970 to 24.8 in 1977, though it fell sharply to 20.9 percent in 1977 and 1978 respectively. Although the growing rate of investment in the 1970s could help in increasing the aggregate supply, for some reasons, the supply could not match the level of demand.

II) Credits policy

Credit policy of Iran in 1970s was similar to the one followed. The important instruments of credit policy available to the ICB were, for instance, open market operation and interest rate, selective credit control, credit ceiling and exchange rate policy. As noted in the previous chapter, the sources of money supply in Iran were changed in following ways: Changes 1) in government budget (as it was mentioned above). 2) in external transaction of the non-governmental sector, and 3) changes in supply of credit to the non-governmental sector by domestic banks. Let us begin the explanation of Iran's credit policy with Open Market Operation (OMP). Sales or purchase of securities by Central Bank as an instrument to control money system is the main instrument of OMP policy. This activity began in the 1940s in Iranian banking system, but it came seriously on the agenda of the banking system only in the 1970s. Selling and purchasing of securities were not as successful in Iran as they were in many other developing countries (we will discuss this mater in the next chapter). Hence, the instrument could not be an effective one for controlling money supply in the 1970s. Legal reserve and rediscount rate were the main effective instruments in the hands of the CBI to control the money supply in the post–oil boom period. In 1974, CBI has acknowledged inflation as a major economic problem. In order to curb the inflation, the rate of interest had been increased by the commercial banks. For instance, the interest rate rose for bills and promissory notes on commercial transaction from 7.5 to 9 percent annually. But the role for agriculture and

industrial bills and notes increased from 7 to 8 percent only. On the other hand, the rate of interest for savings deposits, time deposits and longer deposits rose from 5.5 to 7 percent, from 6.5 to 8 percent and from 7.5 to 9 percent respectively. The CBI in 1976 again emphasized that inflation was the major problem of Iranian economy, and private liquidity was the chief cause of the rising prices. By 1977, it was clear that inflation was out of control; hence CBI again increased the rediscount rate to the commercial banks and maximum rate of interest payable and receivable by the banks. These two had little effect on keeping down inflation. By 1978, the economy reached stagnation point while the private liquidity grew up by 23 percent. In this year, CBI once reduced the ratio of legal reserves and released a considerable part of its reserves for enlarging credit. On a later occasion, the bank again reduced the ratio of legal reserves and requirement of compulsory purchase of government bonds. On the whole however people were indifferent to CBI's policies until the new political regime came to power in January 1979.

Section Four
Government Budget in 1980-1988

Revenue
1) Oil Revenue

The structure of the budget remained the same as in the previous decade and significant part of the revenue came from oil. Table 10 shows the government revenue. As we can find out from the table after the decline in oil revenue from RIS 1590.3 billion in 1977 to RIS 1013.2 billion in 1978 it falls further to RIS 888.8 billion in 1980. Oil revenue resumed its diminishing trend in 1984 and it had fallen sharply to 434.7 billion in 1986 (minimum level in the post-oil boom period). The table shows 45.2 percent of the revenue came directly from oil during 1980-1988.

Table 10: Composition Of Iran's Government Revenue (1980-1988)

Year	Oil revenue	Percentage	Tax revenue	Percentage	Other revenue	Percentage	Total reve
1980	888.8	61	340.4	23	224.6	16	1453.8
1981	1056.4	53	554.1	28	365	19	1975.5
1982	1689.5	62	613.9	23	113.6	15	2717
1983	1685.1	54	796.5	26	536.3	20	3017.9
1984	1407.7	47	898.7	30	698.1	23	3004.5
1985	1277.4	47	1033.7	34	682.6	19	2993.7
1986	434.7	21	1024.6	49	631.4	30	2090.7
1987	853.2	33	1030.2	40	669.8	27	2553.2
1988	809.4	33	986.5	39	717.6	28	2513.5

Source: Iran Centre for Statistics, Annual Review and Economic Trends, Various Issues .

As is clear from the table the share of other revenues in the total revenue increases from 20 percent in 1978 to 28 percent in 1988 (or on the average from 13.2 percent in the 1970s to 22 percent in the 1980s). We also have to note that other revenues came from the difference between official rate of dollar and free market rate of dollar that the government received from oil exports. Indeed more than 67 percent of the government revenue in the 1980s came from oil.

Tax Revenue

Table 11 shows that the composition of tax revenue in the 1980s has not changed structurally. In other words when oil revenue was high the government forgot other revenues, therefore the share of tax revenue shrunk and in the opposite scenario (either because of decline in oil exports in 1978 or decline in oil prices in the international market in 1980 and 1986) the share of tax revenue in total revenue rose.

Table 11: Total Tax To Total Government Revenue And Tax composition

Year	Tax Revenue	Total Tax to Total Govt. Revenue	Direct Tax to Total Tax	Indirect tax to Total Tax
1980	340.4	23	38	62
1981	554.1	28	58	42
1982	613.9	23	48	52
1983	796.5	26	41	59
1984	898.7	30	45	55
1985	1033.7	34	51	49
1986	1024.6	49	56	45
1987	1030.2	40	59	41
1988	986.5	39	65	35

Source: Iran Centre for Statistic, Plan and Budget Organization, Various issues

Figure 7

Tax Composition During 1980s
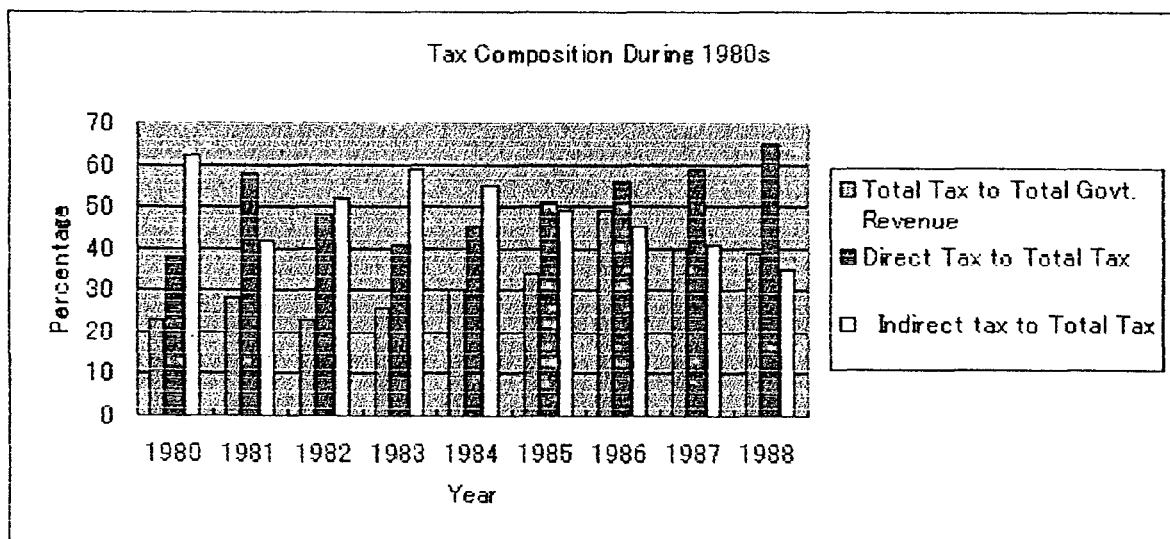
Table 12: Iran's Composition of Government Expenditure (1980-1988) (in b.rials)

Year	Current Expenditure (CE)	Rate of Growth of CE	Development Expenditure (DE)	Rate Of Growth of DE	CE+DE	Total General Budget	Budget Deficit
1980	1681.2	76.2	568.1	23.8	2249.3	1348.7	-903.1
1981	2032.4	75	674.7	25	2707.1	1821.4	-885.7
1982	2251.5	71.1	914.8	28.9	3166.3	2517.7	-649.7
1983	2532.1	69	1148.6	31	3671.7	2794.3	-878
1984	2475.6	73.8	878	26.2	3353.6	2726.6	-627
1985	2548.1	76.9	765.2	33.1	3313.3	2691.4	-621.9
1986	2410.3	76.4	746.5	23.6	3156.8	1781.9	-1374.9
1987	2911.4	80	729.2	20	3640.6	2210.8	-1429.8
1988	3349.2	79.5	816.4	20.5	4210.6	2098.9	-2111.7

Source: Iran Centre for Statistic and Budget and Planning OrganizatioVarious Years.

Table 12 provides figures of current and development expenditures. The share of the former rose from RIS 1387.1 billion in 1978 to RIS 3349.2 billion in 1988 (or from 67.9 percent to 79.5 percent). In the 1980s the character of development expenditure changed. As is clear from the table, the expenditure rose from RIS 657.1 billion in 1978 to RIS 816.4 billion in 1988 while in percentage terms it shows an opposite movement. In other words although the development expenditure rose in absolute value, as a percentage it fell from 32.1 percent in 1978 to 20.5 percent in 1988. The main reasons behind the decline

of development expenditure in the 1980s were the war and the money spent by the government in protecting the poor that accounted for a considerable portion of the total expenditure.

Budget Deficit

Table 12 provides information about the trend of the Iranian government budget deficit. As can be observed from the table, budget deficit declines from rials 508.5 billion in 1978 to rials 269.3 billion to 1979. After a year it again fell for two years continually. In 1985 the deficit fell to rials 621.9 billion, the minimum level ever achieved in the 1980s. One needs to state that the reduction of the budget deficit was not because of increase in tax revenue (as imagined in a classical economics). It was because of the rise in oil revenue in 1981 and 1983. The trend of increasing budget deficit resumed from 1986 and it reached its maximum level of rials 2111.7 billion in 1988, that is around four times the 1978 level and more than three times the 1985 level. Consequently, the ratio of budget deficit to GDP and total expenditure rose from 8.8 percent and 18.4 percent in 1978 to 9.2 percent and 50.2 percent in 1988 respectively.

The Sources of Providing for Budget Deficit

There are six obvious ways in which a budget deficit can be bridged. Borrowing from the central bank is the easy, but potentially the most inflationary, means that the Iranian government had chosen to finance its war expenditure, and expenditure behind the bureaucracy whose size doubled in the 1980s. In other words not only was the measure adopted to cover the budget deficit potentially inflationary but also were the sectors, that the expenditure went to, unproductive. Of course we are going to discuss the various views on budget deficit in the next chapter, but what is imperative to note here is that budget deficit need not always be inflationary. It depends on which measures are adopted and which sectors (productive or unproductive sector) the money is spent on.

Banking system And Credit Policy in the 1980s

When the new regime came to power in early 1979, it began to change both the political and the economic systems. The first step towards changing the economic system was fundamentally reforming the banking system. Therefore all 36 financial institutions that were active during the previous regime had been integrated in two categories, commercial and specialized banks. The new banking system gave priority to controlling the rate of inflation, which increased continuously during the war.

The banking system and instruments

The new system rejected the classic monetary instruments (that were used by the previous regime) as usury instrument (except legal reserves). For the following reasons even assessing the ratio of legal reserves was not a successful instrument for effecting a change in the money supply. First, the instrument can be effective for the banking system in controlling the money supply only in the absence of any illegal financial market outside the control of the Central bank, while this kind of market was already active in Iran and it had been more active in post-revolutionary Iran when the merchant bourgeoisie influenced the new system. Secondly, the instrument has a contractionary effect only if the banks do not have surplus resources. Otherwise increasing the rate of legal reserves by Central bank in order to reduce money supply will be fruitless.

Table 13: Banks Surplus Of Resources Between 1974-1988.

(In rials Billion)

Year	1974	1975	1976	1977	1978	1979	1980	
Surplus Of Resources	-40.2	-147.2	-198.3	-147.4	-112.2	95.5	257.3	
Year	1981	1982	1983	1984	1985	1986	1987	1988
Surplus Of Resources	322.3	718.1	34.2	44.8	371.2	790.9	1196.8	1965.5

Source: The Central Bank Of IRI, Various Years.

Table 14 shows the different sources from where the banks got the money and where the banks spent during 1980-1988 and how much. The table suggests that the surplus was negative during the entire decade of the 1970s and its trend had changed in the 1980s when the banks had a surplus. According to the table the banks' deficit declined from RIs 112.8 billion in 1978 to a surplus RIs 1965.5 billion in 1988. The main reason for having such a huge surplus in the 1980s was the prevalence of stagflation which discouraged investors from taking loans from banks for investment.

Credit Policy in the 1980s

Credits for Various Sectors

The credit policy changed in the 1980s in favor of productive sectors like industrial and agrarian sectors. According to this policy a huge amount of loan was sanctioned for these sectors with low rate of interest but the policy did not yield the desired results in the early part of the decade. The policy was resumed again in 1983.

Table 14: The Rate Of Growth Of Credits For Various Sectors During (1984- 1988)

Year	1984		1985		1986		1987		1988	
Sector	Approved	Actual	Approved	Actual	Approved	Actual	Approved	Actual	Approved	Actual
Agriculture	23	3	20	21.7	20	18.9	20	38.1	23.3	35.2
Industry And Mines	23	7	20	19.4	12.4	7.7	8	2.9	8.3	31
Construction	10	11.2	10	10.4	12.4	17.9	8	25.5	10.6	17.1
Commerce And Services	0	8.4	0	6.3	0	-3.5	0	-3.6	0	-3.9
Others	0	-13.9	0	5.2	0	30.1	0	35.7	0	40.4

Source: Central Bank of IRI, Various Publications.

Table 14 provides details of credit provided by the banking system to various sectors in the 1980s. The data about credit for agriculture indicates that during 1983, 1985 and 1986 the sector could not absorb the entire credit and the industrial sector (except in 1988) also could absorb less than what was approved for it. Looking at the table one finds that the rate of growth of commercial and service sectors has declined and this needs to be explained. The share of the other sector which was also the unproductive sector, had grown such that it can offset the decline of commercial and service sectors. As a result, the improved credit policy that was supposed to be followed by the banking system in order to protect the productive sectors in the first decade of post- revolutionary Iran was actually minimally implemented. The composition of the private credit sector is another important factor that affects the aggregate demand which we are going to discuss now.

Credits for Private sector

Credit for private sector by banks is another important factor for excess demand. Whether the creation of credit is inflationary or not depends on the situation of the economy, whether it is in depression or in boom conditions. It also depends on the nature of credit,

whether it goes to trade or non-trade sectors. When the economy is under full employment, if credit given to the private sector by banks is destined for productive sectors and it increases sufficiently the aggregate supply to cover any excess demand pressures it can't be inflationary. But if the credit flow is to unproductive sector then we can expect it to increase the rate of inflation. We can find Iran's credits policy in 1970s and 1980s from the table. As is observable from the table, the private credits are divided in two sectors, the trade and non-trade sector. The table suggests the highest percentage that was appropriated for non-trade sector during the 1970s was 30.2 percent in 1978; during the 1980s it was 36.19 percent in 1984. In other words almost 70 percent of the private credit flowed into the trade sector, which is potentially inflationary.

With reference to Table 16 we note that credits to private sector can be divided into two sections, for trade and non-trade activities. In regard to the table two points should be considered. The first is the large segment of credit flows to the trade sector in the1970s, but it has became smaller in the 1980s. In the 1970s the average percentage of trade sector credit was 75.9. It fell to 67.86 percent in the 1980s. The second point is the change in credit policy in favor of non-trade activities after 1974 when the rate of inflation began to touch double digits. In the 1980s the trend continued and the percentage of trade activities fell from 71.6 in 1980 to 68.7 in 1988(see the table) ،

Table 15: Rates of Growth of MS, GDP and Wholesale prices. (1980-1988)

Year	MS	GDP	RGW
1980	27	20.9	20
1981	16.1	21.8	30
1982	22.8	31	19.1
1983	16.8	25.1	14
1984	6	25.1	7.6
1985	13	25.1	7.7
1986	19.1	25.1	7.2
1987	18.1	25.1	25.3
1988	23.8	25.1	29.7

Source: Central Bank of IRI, Various Publications.

Finally, table15 provides information about growth of money supply, nominal GDP and rate of inflation in the 1980s. The table suggests that money supply could stimulate rate of growth of nominal GDP but not in proportion to aggregate demand. Although the government's fiscal and credit policies seemed to promote the productive sector in the 1980s,but the war, embargo on the Iranian economy by the USA and mismanagement of enterprises by merchant bourgeoisie prevented sufficient liquidity flow to productive sectors. As a consequence, the aggregate supply could not match the aggregate demand and the rate of inflation rose rapidly in comparison to the 1970s. As it appears in the table, the rate of inflation in the post-oil boom period averaged 12.2 percent, and it jumped to 18.3 percent for the period 1980-88.

Section Five

Cost-push Inflation in the Post War Economy (1980-1988)

Iranian economy fought a crucial eight years war in her history. The economy was in very bad health at the end of the war. For example the real output and investment declined at the annual average rate of 1.8 and 6.6 percent respectively. In this situation

the country's policy makers had chosen the liberalization route in order to reconstruct the economy. The following analysis dwells on cost-push inflation in the post-war period. Cost-push inflation can occur in any economy through three paths: imports, increase in cost of material or wage increase, and devaluation of national currency.

I) Imported inflation

We have already discussed this type of inflation in the pervious chapter and mentioned that the importing country can be affected by imported inflation when prices rise in the international market and in the Iranian case we found out that imported inflation was a major factor in 1950-1951during the Korean War and it was also one of the important reasons behind cost-push inflation during the 1970s and 1980s.

II) Wage Increases

The second potential source of cost-push inflation is wage increases which either reflect a manpower shortage in the labor market or increase in the prices of less elastic goods like foodstuff on which laborers spend a considerable portion of their own wages. When prices increase real wage of laborer will shrink and in order to protect the purchasing power of the laborer the trade union will take action on the one hand and capitalists will attempt to maintain their profits on the other hand. If the former prevails we can expect the economy to witness wage cost-push inflation. According to our study we could not observe any reason to maintain that wage increases is the major factor for inflation in the Iranian economy. The reason behind this claim is that both in pre and post revolutionary Iran there was not any independent trade union that seriously worked for rights of labourers. Therefore, we can safely say that the Iranian economy does not have any experience of wage cost push inflation so far.

Table 16: Rate O f Growth Of Consumption Price Index And Wages (1988-1995)

Year	CPI	WIN	WB	MW
1988	29.1	15	22	9
1989	17.4	11.1	18.2	0
1990	9	38.5	9.3	19.8
1991	20.7	37.5	13.5	66.8
1992	24.5	30	20.5	36.2
1993	22.9	29.2	18	31.9
1994	35.2	27.6	24	30.1
1995	49.5	36.6	38.9	30
Average	26	25	18.3	24.9

Sources: Majmoai-e-Amari, Budged and Planning Organization, table 12, 26.1997

Table 16 supports our argument. From the table, one can see the rate of growth of consumption price index (CPI), wage of big industry (WIN), wage of construction labourers (WB) and minimum wages for the period 1988-1995. There are three outstanding points for discussion in the table. First, there is a direct relation between CPI and WB. When the former changes the latter will change in the same direction. In other words after prices increase WB increases to offset the decline in purchasing power. Second, the rate of growth of minimum wage that is determined by the government increased dramatically from 19.8 percent in 1990 to 66.8 percent in 1991, the third year of liberalization, when labourers started protesting against rise of prices.Third, the average rate of growth of WIN and MW could match themselves with the average rate of growth of CPI, while the average rate of growth of WB could not. The table suggests a 25 percent annual average rate of growth for CPI during 1988-1995, while this rate is 18.3 percent for WB during the same period.

III) Devaluation

As we have elucidated in the introductory chapter Iranian economy changed from being a self- reliant economy to an import-dependent one after 1960s. In 1960s and 1970s when Iran was rich in foreign exchange reserves it allowed importer to import any commodity they wanted. There was no difference between foreign exchange rates in the official and the free markets. After the revolution the government rationalized foreign exchange use, for preventing capital flight and protecting domestic production. Therefore, there was a multiple foreign exchange system that caused an increase in the gap between the official rate and other foreign exchange rates. Traders could have foreign exchange at official rate for import of essential commodities and intermediate and capital goods but they had to offer those commodities to consumers and enterprises at the rational prices. In this way government could prevent hyperinflation in the 1980s. After the War when the new government came to office, devaluation of rial, unification of the exchange rate and elimination of the rational system were the important targets on its agenda. The gap between official foreign exchange rate and the black market rate that reached 500-600 percent in the second half of 1980s increased to 4000 percent in 1995. Under the new foreign exchange system essential commodities and intermediate and capital good imports became so expensive that it increased the cost of domestic production. Consequently, the rate of inflation rose to 49.4 percent in 1994, cohich however fell to 23.2 percent in 1995 (see table). In addition, the annual average of inflation rate jumped from 18.3 percent in 1980s to 28.4 percent in 1989-1995.

Table 17: Rate of Growth of Retail Price during 1988-1995

Year	1988	1989	1990	1991	1992	1993	1994	1995	Average
Retail Price Index	17.4	9	19.6	24.4	22.9	35.2	49.4	23.2	28.4

Source: Plan and budget Organization, Centre for Macroeconomic, 2002.

Figure 8

Retail Price Index in Iran during 1988-1995
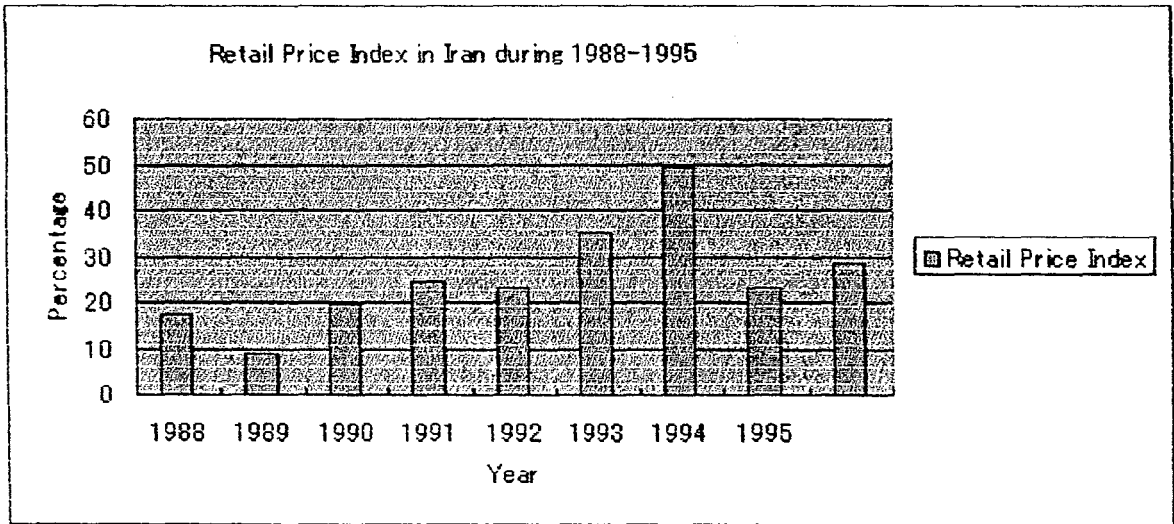
**Table 18: Rate Of Growth Of Money Supply ,Quasi-money , liquidity
of   Private Sector And Nominal GDP   (1962-1995)**

Year	MS (M1)	QM (M2)	M1+M2	NGDP
1962	9.8	53	5.3	5.6
1963	11.9	31	18.8	3.8
1964	10	18.2	13.2	9.5
1965	12	17.7	29.7	11.6
1966	10.8	19.2	14.4	8.1
1967	15	24.6	19.3	12.5
1968	14	30	21.5	9.3
1969	3	31.9	17.5	11
1970	7.6	19.9	14.5	9.4
1971	20.1	30	25.7	26.7
1972	35.6	34.2	34.8	25.5
1973	27.7	30	29.1	47.7
1974	61.4	54.2	57	76.6
1975	36.5	44.8	41.4	10.6
1976	36.9	40.5	39.1	34.5
1977	29.3	33	31.6	16.6
1978	56.4	2.7	23	-1.6
1979	34.7	40.4	37.7	20.5
1980	32.3	22.3	27	5
1981	22.9	9.7	16.1	21.8
1982	28.7	16.5	22.8	31
1983	11	23.7	16.8	25.1
1984	17.8	-6.5	6	10.2
1985	8	19.9	13	6.5
1986	18	20.4	19.1	2.9
1987	16.6	19.9	18.1	23.5
1988	14.4	34.6	23.8	12.8
1989	15.8	23.2	19.5	24.2
1990	24.6	20.6	22.5	32.3
1991	21.8	27.3	24.6	36.1
1992	20	30.1	25.3	32.3
1993	36.9	31.9	34.2	45.2
1994	35.8	22.1	28.5	38.3
1995	34.6	22.1	37.6	43.9

**Source: Majmoa-e- Amari Seri-e- Zamani, Publised by Plan
and budget Oranization, 1997.**

Figure 9

Growth rate of Money supply and NGDP During 1962-1995
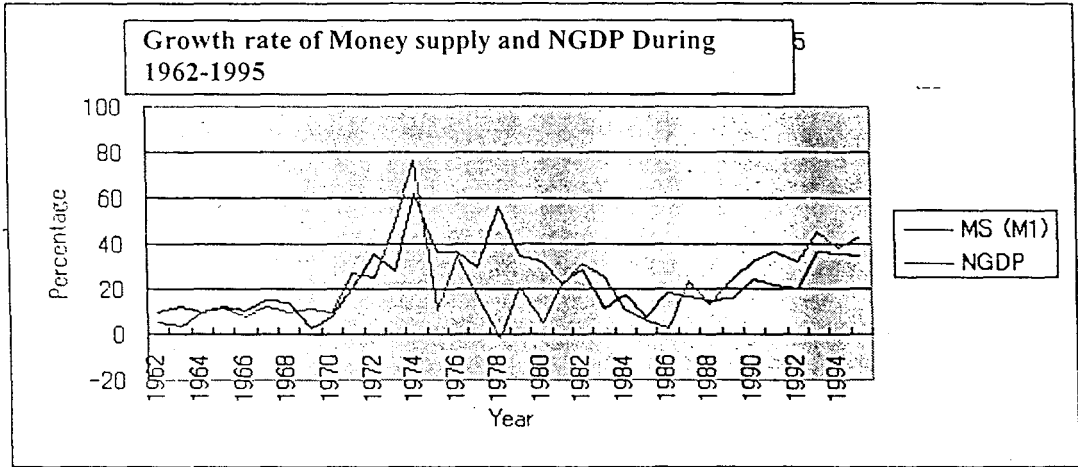
Figure10: Growth rate of Money Supply and NGDP During 1962-1970
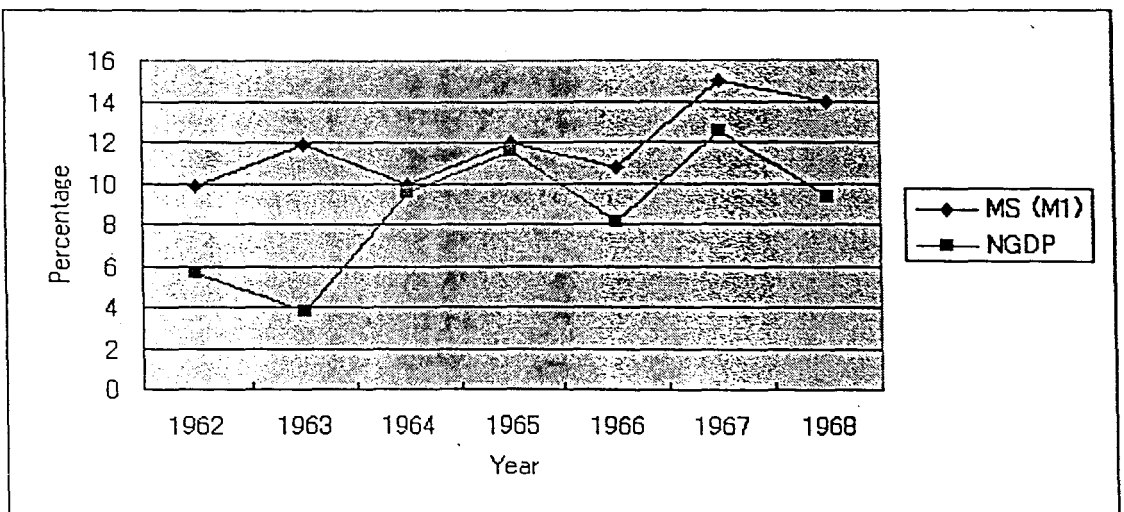
Figure 11: Growth rate of money supply and NGDP During 1970-1980

Figure 12

Growth rate of Money Supply and NGDP During 1980-1988
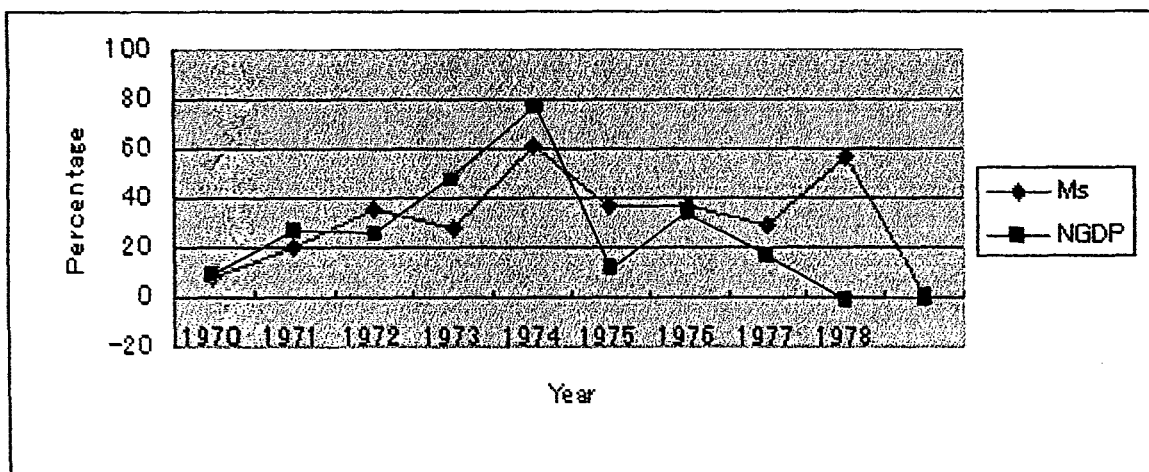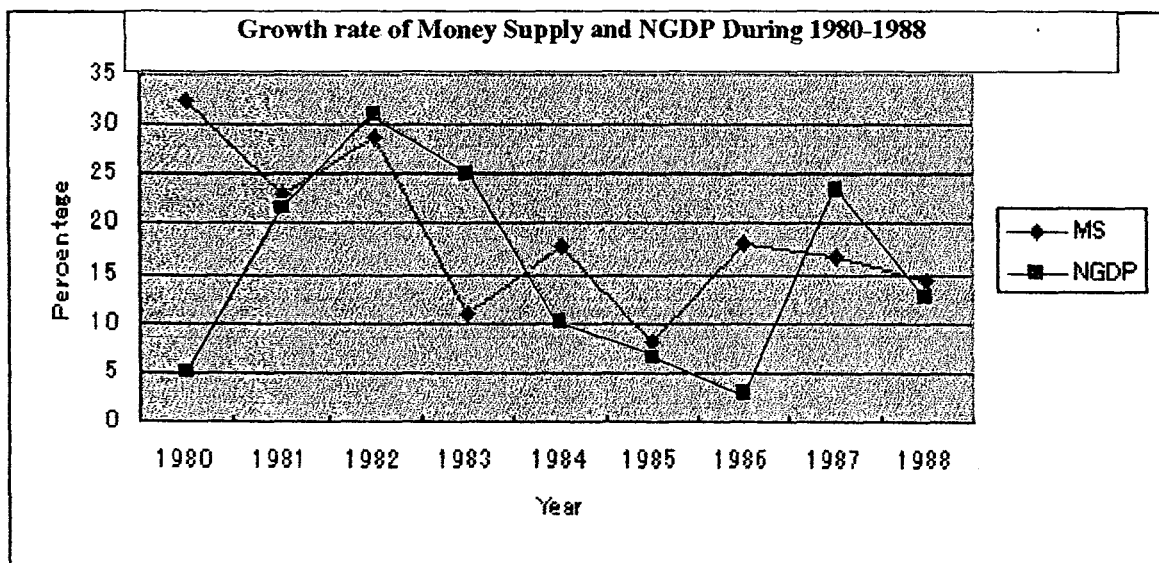
Figure 13 :   Growth rate of Money supply and NGDP during 1989-1995
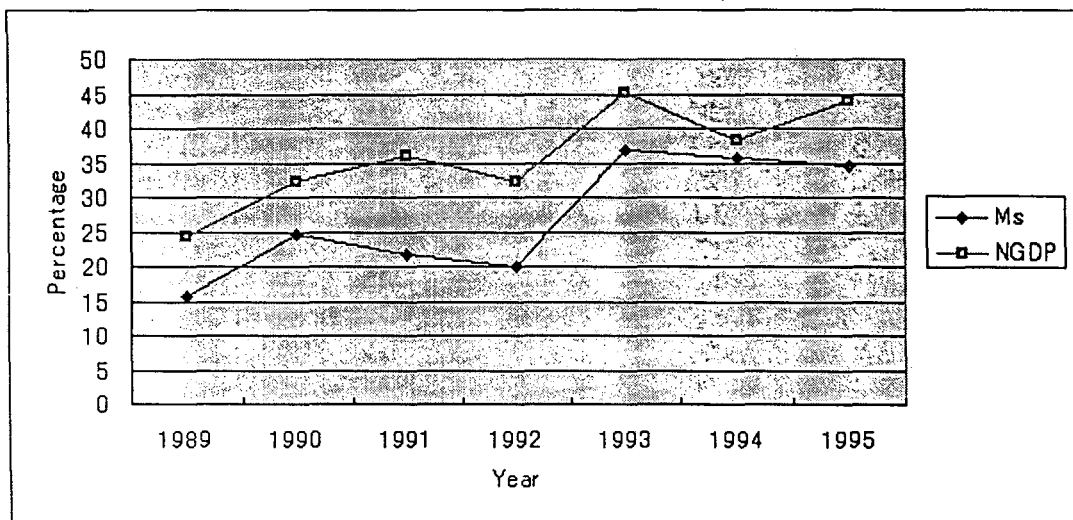
Regression 1

Dependent Variable: NGDP

Method: Least

Squares

Sample: 1962

1995

Included observations: 34

Variable	Coefficient	Std. Error	t-Statistic	Prob.	
C	6.233786	4.899065	1.272444		0.2124
MS	0.652925	0.182493	3.577811		0.0011
R-squared	0.285726	Mean dependent var			21.44118
Adjusted R-squared	0.263405	S.D. dependent var			16.55046
S.E. of regression	14.20445	Akaike info criterion			8.20201
Sum squared resid	6456.525	Schwarz criterion			8.291796
Log likelihood	-137.4342	F-statistic			12.80073
Durbin-Watson stat	1.399849	Prob(F-statistic)			0.001128

Regression 2

Dependent Variable: NGDP

Method: Least Squares

Sample(adjusted): 1963 1995

Included observations: 33 after adjusting endpoints

Convergence achieved after 4iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8.734023	6.446112	1.354929	0.1856
MS	0.56989	0.22213	2.565574	0.0155
AR(1)	0.303562	0.183691	1.652571	0.1088

R-squared	0.33316	Mean dependent var	21.92121
Adjusted R-squared	0.288704	S.D. dependent var	16.56496
S.E. of regression	13.97062	Akaike info criterion	8.198298
Sum squared resid	5855.348	Schwarz criterion	8.334344
Log likelihood	-132.2719	F-statistic	7.494142
Durbin-Watson stat	2.103288	Prob(F-statistic)	0.002293
Inverted AR Roots	0.3		

Regression 3

Dependent Variable: NGDP

Method: Least Squares

Sample: 1962 1995

Included observations: 34

Variable	Coefficient	Std. Error	t-statistic	Prob.
MS	0.854394	0.091591	9.328341	0.0000
R-squared	0.249586	Mean Dependent Var		21.44118
Adjusted R-squared	0.249586	S.D. dependent var		16.55046
S.E. of regression	14.33708	Akaike info Criterion		8.192545
Sum squaredresid	6783.208	Schwarz criterion		8.237438
Log likelihood	-138.2733	Durbin-Watsonstate		1.42291

Regression 4

Dependent Variable: NGDP

Method: Least Squares

Sample (adjusted): 1963 1995

Included observations: 33 after adjusting endpoints

Convergence achieved after 5 iterations

Variable	Coefficient	Std. Error	t-statistic	Prob.
MS	0.820791	0.123532	6.644336	0.0000
AR(1)	0.293169	0.17907	1.637175	0.1117
R-squared	0.289334	Mean dependent var		21.92121
Adjusted R-squared	0.266409	S.D. dependent var		16.56496
S.E. of regression	14.18787	Akaike info criterion		8.201344
Sum squaredresid	6240.168	Schwarz criterion		8.292041
Log likelihood	-133.3222	F- statistic		12.62107
Durbin-Watsonstat	2.103115	Prob(F-statistic)		0.001244
Inverted AR Roots	0.29			

Regression 5

Pairwise Granger Causality Tests

Sample: 1962 1995

Lags: 1

Null Hypothesis:	Obs	F-Statistic	Probability
NGDP does not Granger Cause MS	33	2.31237	0.13882
MS does not Granger Cause NGDP		0.06655	0.79819

Regression 6

Pairwise Granger Causality Tests

Sample: 1962 1995

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Probability
NGDP does not Granger Cause MS	32	1.57011	0.22643
MS does not Granger Cause NGDP		0.03377	0.96684

Section Six

Empirical Work

Now time has come to test our hypotheses. According to the hypotheses that we have mentioned in the first chapter, the reason for inflation process in the Iranian economy has different faces in the deferent periods. Thus the Iranian inflationary process cannot be a monetary phenomenon. In the empirical work we calculated six regressions for a period spanning thirty-four years (or the whole period of the study, 1962-95).

Our function is:

$$\frac{1}{y}\ \frac{dy}{dt} = f(\frac{1}{m}\ \frac{dm}{dt})$$

So we have two variables Ms (or m) and NGDP (or y) that the former is independent variable and the latter is dependent variable. We can write four equations for getting regressions.

1. $y = a + bm$

2. $y = a + bm + AR(1)$

3. $y = bm$

4. $y = bm + AR(1)$

Equation (1) wants to capture the effect of the growth in Ms☐on the growth of nominal GDP (or y); for the second equation, we have added auto-regression (or AR) to find the reaction of the dependent variable on itself. In the third equation we remove the constant term and we calculate the effect of independent variables on y, with the fourth equation puts an auto-regression term into the third. All the four regressions show that Ms is significant, while the R-squared can explain less than 30 percent of the variation in y. These results however give no indication direction of causality. We calculate the other two regressions, regression numbers five and six, with one year and two years lag to test "Granger causality". As is clear from the regressions, with 99 percent confidence the values of the test statistic lie in the accepted region then our test is insignificant and the null hypotheses are accepted. Then there is no "Granger causality" in either direction

between money supply and nominal GDP. We can thus say that the Iranian inflationary process cannot be considered a monetary phenomenon.

Conclusion

The beginning point of our analysis was the difference in the nature of inflation behand the oil and non-oil economies, and we mentioned that for analysis of inflation in the former we must consider the dependence of the state budget and foreign exchange revenue on oil revenue. We classified the chapter into five sections. In the first section, we started with devaluation of Iranian currency against pound sterling and U.S dollar and argued that there was political reason behind that and not economic reason. In this section we found that imported inflation was the major factor of inflation during the pre-1960s period. The second section was a discussion on price stability in the Iranian economy during 1960s. The price stability arose from a number of factors: the state projects in 1960s which had been started in the 1950s, price stability in major Iranian trading partners, and the standing of oil price in a favorable situation in the international market in the 1960s. The decade was an exceptional one in the economic history of Iran, when the economy grew at an impressive rate, by an annual average of nine percent, and at the same time, the general rate of inflation was only one percent. The rate of growth of prices in the world economy in 1967 started to increase, but its effect on the economy of Iran was neglected and it became visible after the oil boom in 1973. We found that the excess demand that was created by the increasing of the oil price in the international market was the fundamental reason of inflation in the 1970s although the imported inflation and bottleneck of import facilities were the important factors. Of course we took into account the fact a significant part of bank-credit went to unproductive sectors which way another important factor behind inflation in the 1970s. Iran experienced two-digit rate of inflation in the 1970s. We divided the post-revolutionary period into two different inflationary processes, the war economy and the liberalization economy. In the former period, the government was involved with a protracted eight year's war. The government has not been successful in its investment and anti-inflationary policy. The attempts of financial to control inflation were not successful, because the illegal financial market was

strong on the one hand, and there existed excess reserves with the banking system on the other hand. During 1978-1988, investment and output fell by annual average rates of 1.8 percent and 6.6 percent respectively. We found that the excess demand cause by the government's military budget during the war was the main reason of inflation during war economy, while deviation of capital from productive sector to unproductive sector and sanctions imposed on the Iranian economy by the U.S which gave rise to a high rate of imported inflation were the important factors. As a result, the average rate of inflation increased from 12.2 percent in 1970s to 18.3 percent in 1980s. In the fourth section that covered ten years of post-war economy (1989-1998), we argued that devaluation caused promotion of exports at the expense of domestic supply and raised the cost of imported materials and intermediate goods which were needed in the manufacturing sector. Consequently, we considered cost-push inflation as the reason of inflation in this period. In the fifth section, we calculated six regressions for the period of our study, 1962-1998, where money supply (Ms) is considered as an independent variable and nominal GDP as a dependent variable. We wanted to capture the effect of the growth in Ms on the growth of NGDP. The result showed there is no causality between the variables in the Iranian economy during 1962-1998. Hence, the Iranian inflationary process is not a monetary phenomenon.

Chapter 3

Theoretical Work

Chapter 3

Introduction

Debates on inflation and control efforts to it have a long history among economists and non-economists. Theories of inflation are a serious issue in macroeconomics. The oldest theory of macroeconomics, *"The quantity theory of money"*, was established by Classical economists, formalized by Ricardo and expanded by others. In this theory inflation was a monetary phenomenon. When the old macroeconomics lost its validity in the midst of the Great Depression and Keynesian economics emerged as the new macroeconomics, the concept of demand pull inflation and cost push inflation were developed in order to explain the upward movement in prices in a modern capitalist society. On the other side disciples of the old school rebuilt their theory of inflation by introducing the concept of *rational expectations*. The following chapter has four parts. It starts off with a review of *The quantity theory of money*, then the Keynesian Revolution is considered. In the next part, the major propositions of the Monetary school is discussed, and the third part deals with the Structuralist theory of inflation. The fourth deals with the differences between the Keynesians and the Monetarists on demand pull inflation and cost pull inflation. These are followed by conclusion.

Part One:

The Quantity Theory

The Classical economists did not have identical ideas on economic phenomena in general, and about money and its effect on macroeconomic equilibrium in particular. Two main tendencies were among them which we shall discuss briefly.

The currency Approach

Ricardo most probably had read "Enquiry into the Nature and Effect of the paper credit of Great Britain" by Henry Thornton in 1802. But he got influenced by Hume's opinion on the theory of money. Ricardo followed the *currency principle* through out his life. When the British government issued excessive notes in order to finance the war against Napoleon in 1810, he launched a special attack on the policy. Regarding to Ricardo's approach, Taylor (1991, p.27) has mentioned;

"Ricardo's main policy recommendation was a Friedmanite rule called the currency principle, recommending that the outstanding money stock should be strictly tied to gold reserves. Money could not be created for frivolous purposes such as war finance, and its supply would only fluctuate in response to movements of gold. In effect, Ricardo sought to steer monetary policy along the trail blazed by Hume".

Ricardo was devoted to *the currency principle*, which takes the opposite side of Thornton and Mill who showed sympathy to the banking school.

Thornton-Mill approach

Mill was a follower of Henry Thornton, a contemporary of Ricardo. He had some sympathy, like Thornton, with the banking school and the concept of "loanable funds" which constitute a non-monetary approach to the theory of the rate of interest. This approach was not the same as Ricardos': on credit policy, the former believed in monetary management while the latter looked for mechanical rules by which credit is to be controlled. Further, Hicks (1972, p.162) makes clear about Thornton's point of view: "a credit system must be managed by a central bank whose operations must be determined by judgment, and cannot be reduced to procedure by a mechanical rule".

The story we have just discussed in terms of classical credit policy is repeating itself in our period. When Monetarists suggest that the monetary authority should have legislated a rule to achieve a specified rate of growth in the money supply, and that its policy also should be independent from the government, this means a Ricardian portion. When the

opposite side argues that central bank should have responsibility about its actions to government, this means inversing the Mill & Thornton approach.

The Quantity Theory

The quantity theory of money is one among the oldest economic theories that originated more than two centuries ago. Jean Bodin was the first person who discussed about the relation between money, production, and price in the 16th century. But the quantity theory which figured in the writings of the Scottish philosopher David Hume was introduced in the 18th century. Ricardo, who was identified as the right among the main economists, formalized the theory in mathematical forms. Before the Keynesian revolution, the quantity theory had had approach in several different forms, and each one can be summarized as follows:

1. Ricardo's approach

In the late 18th century and the first quarter of the 19th century, Ricardo worked on the quantity theory and finally formalized it into the mathematical form. According to his economic regime, the real cost of production, in the service of the amount of labor directly or indirectly embodied in a commodity is the primary determinant of the exchange value and there is no involuntary unemployment on account of the deficiency of aggregate demand. Many has no effect therefore on employment and it can only play the role of a medium of exchange. It was natural that he liked Hume and other classical economists who took money as a medium of exchange, and not as a store of wealth, when metallic money was the primary form of money. Ricardo's analysis starts with a simple identity;

$$M=PT \text{ or } P=\frac{M}{T} \tag{1}$$

where M, P, and T are the money stock (metallic money and notes issued by central bank which are backed with gold and silver), price level and volume of transactions, respectively. Ricardo believed that any increase of money supply cannot change the

production level and it will affect the price level alone. In the earlier formula of the theory of money that was introduced by Ricardo, velocity of circulation of money has not any place and we had to wait for 30 years till Mill argued that the coins and notes can be circulated not only once but many times. It can be used as a medium of exchange for transactions, hence he added V into the Ricardo's formula as following;

$$MV=PT \quad \text{or} \quad P=\frac{MV}{T} \tag{2}$$

Where M, P and T are money stock, level of prices and volume of transactions, the same as in the Ricardo's formula, and V is the velocity of money circulation. The equation (2) says the quantity of money multiplied by the velocity of circulation of each unit of money is equal to the level of prices multiplied by the volume of transactions. The propositions of the quantity theory are that V and T are constant, and hence any increase in money supply will have an effect on prices only.

Ricardo also argued that increase of prices in a domestic market (suppose foreign prices are fixed) will increase trade balance deficit, because when prices rise in the domestic market, gold and silver go out of the country in order to finance the deficit, and consequently, domestic prices would decline. Since prices must be the same, it followed that the total money stock in the world would be distributed across countries in allowance with their respective outlook volumes.

2. Cambridge School of Money
1. Irving Fisher's Approach:

Before Fisher, the definition of money was largely limited to coins and notes that were being backed by one hundred percent gold (though notes without full gold backing had found in the discussion). His innovation discussed in the book *the purchasing power of money* was the addition of bank deposits and their circulation velocity to the equation of the quantity theory.

$$MV= P_1q_1+P_2q_2+P_3q_3.....+P_mq_m \tag{3}$$

$$MV=\sum Pq$$

If we replace $\sum Pq$ by PT, and the quantity of deposits and velocity of circulation by M and V respectively, then we can replace on the final identity by.

$$MV+M'V'=PT \qquad (4)$$

where M denotes the volume of coins and notes in circulation; V, the velocity of circulation of coins and notes; M' the total of bank deposits and V' the average velocity of circulation of bank deposits; P the price level; and T the volume of transactions.

Fisher's argument is the same as the Classical economists'. Fisher justifies the changing of the elements of equation (4) by pointing to changes in the left hand side elements, M, M', V, and V', and not the reverse. He argued that if money stock increases one hundred percent, then prices will rise one hundred percent, because proportion of M' to M+M' is fixed. Fisher makes a number of points in this connection:

(i) M' is a function of M with a constant proportion. He says that there is a constant proportion between cash transactions and check transaction.

ii) There is a constant proportion between banks deposits and cash just as there is a constant relation between the cash payment and check payment. Therefore, M' has to be a function of the changing of M.

iii) Just as M'/M is constant, V and V' are also constant, because circulation of M and M' are not a function of money supply, current deposits, and prices. Even if we suppose V and V' are variables, their changes are very small and these can be neglected.

iv) Fisher believes that transactions are a function of the quantity of natural resources and technological conditions of production, therefore T is constant. As a result, Fisher does not believe that the changing of right side elements of the equation (4) can change the left side elements of the equation. As we know he followed the "Says law" and could not agree with the idea that an increase of money supply may increase employment and production.

3. The Cambridge Cash Balance Approach

This approach is formed on the basis of significant contributions from Marshall and Pigou. This tendency works at the demand for money, and gives an emphasis to the quality of money, although it is believed that it cannot affect on production. According

to the Cambridge views of money, Fisher's equation is unable to explain the reasons of circulation of money. To eliminate this problem, the Cambridge approach suggests knowing how much money people are keeping as cash, which is a function of income and wealth of individuals. The Marshall-Pigou model can be identified as follows;

Demand for money (M^d) will be a constant function (k) of the volume of transactions.

i.e $M^d = kPY$ (6)

The equation of (6) says that demand for money (M^d) is a constant proportion (κ) of the nominal income of that individual; aggregate and the economy as a whole useful equation (6).

We know $M^s = M^d$ (7)

We can write an equation that is an aggregation of overall individuals in the economy.

$$M^s \frac{1}{k} = M^s V = PY$$

It is interesting to note that there are some differences between Fisher and Cambridge models of the demand for money, can be enlisted as follows ;

Fisher's approach is macroeconomic while the Cambridge view represents a microeconomic approach. ii) For Fisher, the role of the institutional framework is important while the Cambridge school emphasized the rate of interest and expectation of its future value. iii) Cambridge economists like Fisher followed 'The quantity theory of money' but they took the role of quantity of money under consideration.

Denis H. Robertson

He is one of the outstanding economists in the pre-Keynesian period who paid attention to the relation between money supply and output. He analyzed that when money supply increases, it may cause a boom in prices, which will encourage producers to increase their production; therefore money as an active factor can affect output.

Perhaps Knut Wicksell is the latest economist who should be taken under consideration in the pre-Keynesian period. Wicksell was a rare economist who attacked the "Say's law" and classical views on the rate of interest in the period of pre 'Great Depression'. The question which he addressed was: "why did the price level also come down when the

rate of interest was low at the end of the 19th century?" While referring to classical opinion, he would have concluded that when the rate of interest was low, the economy should move up toward a boom and the price level should be increasing. But contrary to classical opinion which had imagined only one rate of interest, he distinguished between the market, or money rate of interest, and the real or natural rate of interest. The core of his innovation is that the money rate of interest in the economy may differ from the 'aggregate marginal product of capital' (or real interest), therefore, it may create price instability. According to his argument, any increase in natural (or real) rate of interest as the effect of an exogenous factor, for instance, 'technical progress' will increase prices continuously. He divided the whole spectrum of activities in an economy to consumption and investment sectors. Suppose economy experiences "technical progress", the productivity of capital or real rate of interest, will rise and the gap between the real and money rates of interest will cause expectation for profit to go up. It must be mentioned that i) considerable segment of his analysis was borrowed from Thornton who lived almost one hundred years before Wicksell. ii) Although he attacked "Say's law" and made some contributions on monetary theory, he remained a neo-classical economist and did not pay much attention to the role of demand in equilibrium theory iii) Finally, Wicksell's innovation in the rate of interest can in some ways be said to have inspired Keynes' revolution.

Keynes' Revolution

Keynes' works are dividable into two periods; before publishing A *treaties on money* in 1930, and the after. Although he did not completely agree with the 'Quantity Theory of Money' before 1930, it was only after 1930, especially when he wrote *"The general theor"y*, that he attacked classical economies seriously. He explains the evolution of his monetary theory;...." when I began to write my *Treatise on Money* I was still moving along the traditional line of regarding the influence of money as something so to speak separate from the general theory of supply and demand. When I finished it, I had made some progress toward pushing monetary theory back to become a theory of output as a whole". (Keynes 1936, P.vi)

The main difference between Keynes' theory of money in 'A treaties on money' and the classical theory of money is that he attempts to find a method which not only formalizes the character of static equilibrium and disequilibrium, but also analyzes the causes of dynamic price changes while the classical analysis on the equilibrium was static.

Keynes introduced a new school of economic thought that challenged the classical economic theory seriously, by publishing *"The general theory"*. In the following discussion, our special focus is on two fundamental points of view put forth by Keynes.

Firstly, the flexibility of prices and wages that classical economics the assumption is that rely on is not applicable to a capitalist economy. According to classical economists, the economy is always in *full employment*. Even if it deviates from equilibrium, with the presumption of the flexibility of wages, the real wages will decline and the economy would be back to full employment again. Of course, the old school considered that the economy might have voluntary and frictional unemployment, but it never accepted the concept of involuntary unemployment. In contrast to the classical works, Keynes argues that prices and wages in a capitalist economy are not flexible. In Keynes' period, trade unions were very strong in England and he realized that labor market couldn't be under conditions of perfect competition; therefore, changing of nominal wages cannot be in the same direction of changing of real wages. Consequence, he rejected the flexibility of wages and conceptualized on the basis of "collective bargaining".

Concept of Money and Demand for Money

Most probably, Marx (1970, pp. 87-107) was the first economist to consider that money is not only a medium of exchange, but also a store of value. Marx's "circuit" of money and commodities begins with C-M, where C and M denote commodity and money respectively. Money (M) obtained from selling commodities(C) in order to make by commodities (C') then can be explained as: C-M-C'. The second term M-C" implies that it will result in C"-M, and according to the first term of the circuit, we can write C"-M-C"', and so on. Money as the purchasing power is divided into two different directions: buying commodities in the present time and postponing the buying to the future that is

uncertain. Without doubt Marx's 'circuit' can be seen as a precursor to Keynes' money theory.

Keynes' Theory of Demand for Money

When Keynes in *The general theory* stated that money could also be a store of value, it opened up a new chapter in economics. The old version of demand for money recognized the transactions and the precautionary motives of demand while there was no room for the speculative motive. In *"The general theory"* Keynes argues that the demand for money can be for the transactions and the precautionary motives, which are functions of income, and for the speculative motive, which makes many demand a function of the rate of interest. The size of money holding under the speculative motive depends on two elements; expectations in the economy and the current rates of return of other assets. The central point of Keynes' money theory is 'liquidity preference' that is a relation between speculative targets and the rate of interest on other assets. In an economy, when the ruling rate of interest is very low, speculators hardly hold bonds. Further, when the rate of interest falls below the normally expected rate, speculators expect the rate of interests will rise and bonds holder will lose, therefore speculators change their bonds to money to prevent possible capital loss. Keynes described such a situation as a 'liquidity trap', the demand for money has almost infinite elasticity as a store of wealth. As we have already mentioned, Keynes believe that the interest rate affects investment and that the monetary authorities will stimulate investment by cutting down the rate of interest; and in consequence, level of output will increase. But in the 'liquidity preference schedule', the authorities are not able to change the level of output in the 'liquidity trap' region by changing money supply. In such a situation, the changing of money supply will affect the velocity of money circulation only, which, contrary to what the *Quantity Theory of Money* formulates ceases to be an independently given constant.

Part Two:

Monetarist School

There are two approaches among Monetarists which attempt to revive *the Quantity theory*; these can be called the Friedman and the Rational Expectations approaches.

The Quantity Theory of Money after Keynes' attack in his book *The general theory* in 1936 had only a few academic centers as its bastions. Of course, the economists who advocated the Quantity Theory of Money have continuously tried to update the theory. Ghadiri (1985, p.102) has mentioned:

"in 1950, Alvin Hensen, a professor of Harvard University, claimed that the Quantity Theory of Money can explain price fluctuations in the poor and undeveloped countries, and his theory got under consideration in some American universities. In France the theory was introduced by one of his disciples, Alexander Chabert, through his book 'Economic structure and the Quantity Theory of Money' in 1956. The author made efforts to argue that Hensen's theory was valid in 19th century in Latin America and Middle East. In the same years, Don Patinkin, a professor of Jerusalem University published a book 'Money, interest, and prices' which added some more arguments to the predecessor's works."

Friedman's Approach

In 1956, Friedman published an article *The Quantity Theory of Money: A restatement*, which presented the following discussion from his works. In the beginning of his article, Friedman noted that the Quantity Theory of Money, first of all, is a theory of the demand for money and not a theory of output, money income, and the price level. According to his theory, demand for money depends on three major factors; (a) the total wealth that people can hold in various forms, (b) the price and return on this form of wealth and alternative forms, and (c) tastes and preference of the wealth-owning units. Of course, it is necessary to explain that he believes; i) wealth is permanent income, not annual income. ii) The role of rate of interest explains the relation between the stock, which is wealth and the flow, which is income. It is useful to discuss on money from Friedman's

point of view in a general sense before opening a debate on his theory of demand for money.

We discussed earlier that Keynes' money theory, in contrast to Classical economists, emphasize the store of volume function of money, that it is a form of holding wealth. This has been accepted by Friedman too. He mentioned about money:

"To the ultimate wealth-owning units in the economy, money is one kind of asset, one way of holding wealth. To the productive enterprise, money is capital good, a source of productive service that is combined with other productive services to yield the products that the enterprise sells" (Fridman 1956, p.2).

As is clear from the above, money is a production factor, like capital goods for producer and a kind of asset for holding wealth for the consumer.

Friedman's' Demand for Money

Friedman's function of demand and for money takes into consideration a group of elements that play an effective role on demand for money.

$$M^d = \int (P, rb, re, \quad \frac{1}{p}\frac{dp}{dt}, W, U) \qquad (1)$$

Where P is the level of prices, because people want to keep it for their purchasing power. 'rb' and 're' are the rates of bonds return and securities respectively. These two assets are taken into consideration, because they are the proportionate substitutions for money. 1/P dp/dt is the real return from holding a unit of the physical goods. W, U, are wealth, and for utility determining variables respectively. Friedman takes U as a representative of many variables that can be explained to affect tastes and preferences of money holder for demand of money. According to him, the element of nominal permanent income is the most important factor in the demand of function for money.

There are two important points which Monetarists has left for discussion; the velocity of circulation and the interest rate. Friedman argues that if prices and money are changed in the unit, for example, λ times, the money demand should be changed proportionally with λ. He also supposes that the function of demand for money must be regarded as homogenous of the first degree in P and Y,

$$\int(\lambda P, rb, re, \frac{1}{p}\frac{dp}{dt}, W, \lambda Y, U) = \int\lambda(P, rb, re, \frac{1}{p}\frac{dp}{dt}, W, Y, U) \qquad (2)$$

Friedman supposes that $\lambda = \frac{1}{p}$, then we can get

$$\frac{M}{P} = \int(rb, re, \frac{1}{p}\frac{dp}{dt}, W, \frac{Y}{P}, U) \qquad (3)$$

and $\lambda = \frac{1}{Y}$

Equation can then be written as

$$\frac{M}{Y} = \int(rb, re, \frac{1}{p}\frac{dp}{dt}, W, \frac{Y}{P}, U) \qquad (4)$$

If we compare Cambridge equation of demand for money with Friedmans' equation, we can find that the former equation for demand for money is a function of income, while the latter equation for the demand for money, is a function of the permanent income. Friedman says that k cannot be a constant amount, so it is a constant function of some variables. We know that V=1/k, then we can write;

$$\frac{M}{Y} = \frac{1}{V}(rb, re, \frac{1}{p}\frac{dp}{dt}, t, W, Y/P, U)$$

or $M^s V (rb, re, \frac{1}{p}\frac{dp}{dt}, W, \frac{Y}{P}, U) = PY \qquad (5)$

Monetarists do not believe that the velocity of money circulation is constant as Classical economists or the Cambridge school. As equation (5) shows that velocity of money circulation is a function of six variables; a change in any of them can affect V.

Rate of interest and Monetarists

Classical economists had argued that rate of interest was a real phenomenon in contrast with Keynes who argued that rate of interest was a monetary phenomenon. Friedman had pointed out regarding Keynes' 'liquidity trap' that changes in the nominal stock of money had no effect on rate of interest and employment level (Fridman1956). According to him and other Monetarists, fundamental changes in the rate of interest will happen by changing real variables like income, prices level and some other factors only.

According to Friedman, there are no significant relations between changes in the velocity of money circulation and the variety of interest rates in the economic fluctuations. Monetarists believe that if we accept the rate of interest as a variable in the demand function for money, it can have a 'temporary effect' only. For the above reasons, the rate of interest was eliminated from Friedman's "the function of demand for money" and he considered permanent income as the most important element for demand of money.

To sum up;

Friedman accepted that the function of money cannot be as the "medium of exchange" only; it can also be the store of wealth, which means he had a definition of money close to Keynes and departed from the Classical economists on the concept of money.

The rate of interest is the central mechanism according to classical economists for equity between grading saving and investment, but in the function of demand for money that was considered by Friedman, the rate of interest was eliminated.

Although Friedman has taken various variables for demand of money, the most important element is permanent income.

Rational Expectations

We may be able to classify rational expectations school as the second monetary school, which became prominent in 1970s when inflation had touched the two digits rate in OECD countries and so that these countries had chosen a contractionary fiscal and monetary policy. Perhaps John Muth (1961) was the pioneer of the rational expectation school but it was expanded later with the contributions of Lucas (1973), Sargent, and Wallace (1975). The fundamental hypothesis of the rational expectation lies on an assumption that all information in an economy should be available for individuals firms and government in order to estimate the expected inflation. Expectations theory suggests that individuals do not make systematic forecasting errors. It does not mean individuals, firms, do not make mistakes on their estimate, but it means that their forecast about the future of inflation rate is on the bases of 'Mathematical Expectations', hence the average of their errors will be zero. Also people are able to know about government decisions, for example, information about fiscal and monetary policy. If they could successfully

estimate the changes of real money supply, the curves of aggregate supply and aggregate demand will shift toward the same amount of real money supply. As a result, there will be change in output. In case of error on estimating changes of money supply and therefore error on price anticipation, we can expect any abrupt changes in money supply or prices on the level of production. Of course, the rational expectations hypothesis underlies the key ideas of flexibility of wages and prices.

Here, let us focus on a model which explains inflation and unemployment in the rational expectation theory.

$$I^e t = E(It\ I^e t-1) \tag{1}$$

$$It - I^e t = \varepsilon t \tag{2}$$

Where It and It^e are rates of inflation and rate of expectation inflation respectively. Equation (1), states expectations of individuals from inflation for t period is same as their mathematical conditional expectations based on to information of previous rate of inflation and current economic conditions. Equation (2) stands for actual rate of inflation, It, and expectant rate of inflation, I^e t, which can have error as a random variable, εt with zero mean, $E(\varepsilon t)=0$. Equation 2, states that forecasts are not completely correct, but it is not involved with systematic error. Here, we add another two equations that explain expectations in Phillips' curve to the model.

(a) $It = I^e t - b(ut - \bar{u}) + \varepsilon t \tag{3}$

(b) $ut = \bar{u} - \psi(mt - It) + \theta \tag{4}$

The equation (a) is expectations in Phillips' curve with variance σ^2 and mean zero $E(\varepsilon t)=0$. Equation (b) is a difference between rate of unemployment from natural rate as a function of money supply. ut also is a function of a random variable, θ, with $\sigma^2\theta$ and zero mean $E(\theta)=0$. Now, with the substitution of equation 4 for 5, we can find It.

$$It = I_t^e + b\psi mt + \varepsilon t - b\theta t / 1 + b\psi \tag{5}$$

The equation (5) shows that the rate of inflation It, is equal to expectant inflation I^{e}t, money rate of growth mt, and other two random variables εt and θt. We take mathematical conditional expectations from equation 5, then we obtain;

$$E(I_t\Gamma_{t-1})=E(I_t\Gamma_{t-1})+b\psi E(m_t\Gamma_{t-1})/1+b\psi \qquad (6)$$

$$E(\Gamma^e_t\Gamma_{t-1})=I^e_t=E(I_t\Gamma_{t-1})$$

$E(E_t)=0$ and $E(\theta_t)=0$, therefore we can write;

$$(1+b\phi) \ E\ (I_t\ \Gamma_{t-1})=E\ (I_t\ \Gamma\ t-1)+b\phi\ E\ (m_t\Gamma_{t-1})$$

Refer to the 1 equation, which can be written;

$$\Gamma^e t=E\ (I_t+\ \Gamma_{t-1})=E(m_t\ \Gamma_{t-1}) \qquad (7)$$

As it is clear from the equation (7), rate of expectant inflation is equal to anticipated money supply. We obtain actual rate of inflation with substitution of equation (7) in equation (6), then,

$$I_t = \frac{E\ (m_t\ \Gamma_{t-1})+\ b\psi m_t + \varepsilon_t-b\ \theta\ t}{1+b\psi} \qquad (8)$$

Rational expectations economists assume that money supply is controllable by Monetary authorities by announcing all the economic policies to people one period in advance, then individuals could anticipate the rate of growth of money supply correctly. We can write;

$$E(m_t\ \Gamma_{t-1})=m_t + \varepsilon_t-b\ \theta\ t \qquad (9)$$

We can combine the equation (8) and (9) and obtain;

$$I_t = E(m_t\Gamma_{t-1})+ \frac{\varepsilon_t-b\ \theta\ t}{1+b\psi} \qquad (10)$$

Equation (10) states that rate of inflation is equal to the rate of expectant money supply growth and plus, a linear combination from random variables. With the substitution of equation (10) by (4), it can be obtained;

$$U_t=\bar{u}-\psi m_t+\psi\{E(m_t\ \Gamma_{t-1})\}+ \frac{b\ \theta}{1+b\ \psi} - \frac{\varepsilon_t}{1+b\psi} + \theta\ t \qquad (11)$$

$$U_t=\bar{u}-\psi\ \{m_t-E(m_t\ \Gamma_{t-1})\}+ \frac{(\psi\varepsilon_t + \theta\ t)}{1+b\psi} \qquad (12)$$

Equations 12 is the central point of rational expectation school, which states, unforcastable and nonsystematic shocks of economic policies alone can impart on unemployment and production. Regarding equation 9, we can obtain;

$$U_t = \bar{u} + \frac{\psi\varepsilon_t+\ \theta\ t}{1+ b\psi} \qquad (13)$$

Equation (13) states rate of unemployment, U_t, is equal to the rate of natural unemployment, $\bar{u}$, plus, a random element. Finally, rational expectation economists argue that fluctuation of actual rate of unemployment is around the natural rate of unemployment, because they believe that increase of money supply does not effect on production and real income. This approach of Monetarists divides the changing of rate of

money supply into anticipated and unanticipated parts. Anticipated changes have no effect on unemployment.

Monetarism and Inflation

There is a divergence of opinion on the effects of inflation on an economy. As opposed to the Structuralist view, the Monetarist school has a different understanding about inflation.

"The Monetarists recognize that rapid economic development is likely to provoke inflationary pressures, and they argue that one of the problems calling for high priority economy, attention on the part of the authorities in a rapid developing economy, therefore, is the restrain of inflation." (Baer. W, Kerstenetzky. I, 1970,p 3). In contrast, Monetarists believe that "... inflation is not inevitable in the course of development." They also add that , "... It is not clear that inflation is always a bad tax. That depends on circumstances and alternatives available". Friedman said," I would not want to say that it is always worse than all alternatives" (Fridman1963.p 17).

The main points of the Monetarists on inflation can be summarized as follows:

i.   Inflation is always and everywhere a monetary phenomenon.

ii.   There is a cause-and-effect relationship between money stock and prices. The first is the cause and the latter is effect.

iii.   Money stock is exogenous and it is controllable by monetary authorities.

Of course there are some difference between these two Monetarists approaches on analysis of inflation. The first approach argues that there is a 'trade off' between rate of inflation and rate of unemployment in short run where the rational expectations school rejected this view .

Criticism of Monetarists

The following discussion has two sections, the theoretical and the empirical sections. The later is concerned with the Iranian economy.

Section One:

Criticism of Monetarists from Theoretical Stand Point

The one basic idea of Monetarist was the existence of 'full employment', or for modern Monetarists the natural rate of unemployment, which they believed was the result of flexibility of money wages. But this was put under question by the Keynesian revolution. Keynes idea, in contrast to the classical belief, was that when money wage is cut, it does not necessarily lead to a decline in real wage. The Classical view, he argued, would not be necessarily true in an economy with fiat money. Let us, before discussing exogenous of money supply of the Monetarist school, make clear the difference between commodity money and fiat money. First of all we shall answer the question, why does money have a positive and finite value? And why the value of a commodity in terms of money is neither zero nor infinity? In a commodity money world, money itself is a produced commodity, but in a fiat money world the cost of producing money is almost nothing. Keynes says that money has a positive and finite value because there is some commodity whose price in terms of money is fixed and that commodity enters into production of every other commodity; that commodity is labour. Monetarists believe that money has a positive and finite value because the demand and supply mechanism ensure this. This necessarily presupposes that the supply and demand schedules of money be independent of the value of money and should intersect at a positive and finite value. However, the individual speculative demand for money or of money supply endogeneity disrupts this assumption. This is why monetarists usually assumes exogenous money and a constant velocity of circulation giving a strict proportionality between money supply and price level, in condition of (presumed) full employment.

Keynes argued that money supply, for a given level of output would not necessarily increase the general prices level in same proportion as itself for two reasons: The first is that full employment is a presupposition of the Monetarists while in Keynes's opinion, the economy may not be in full employment; thus, an

increase in the money supply will lower the rate of interest and as a result, investment and output will increase. In short, the Monetarists idea that an increase in money supply will affect only prices, and not output is invalid.

The second is about the function of money demand. Keynes' idea on the function of money demand is that the demand for money is interest-elastic. The curve of money demand at low rate of interest will be horizontal; in this condition the changing of money supply will not affect the rate of interest and aggregate expenditure. In a situation of low rate of interest or the 'liquidity trap' the demand for money is perfectly elastic, therefore people are ready to hoard as idle balances any increase in the money supply. In other words, changing the velocity of circulation will offset the change in money supply. The same result will be obtained if money supply is endogenous which also fixed the interest rate institutionally.

Actually, Monetarist theory suffers from the fact that it has not made the distinction between fiat and commodity money on the one hand, and active and idle money on the other hand. Now we have to consider the suggestions of Monetarists for achieving price stability during course of development. They suggest that when the real resources are in the hands of government, it can, by taxes or through borrowing from people for the purpose of investment, alleviate pressure on monetary demand. Here two points are to be considered. As we have earlier mentioned, the third world countries like Iran in the beginning of development, have no good infrastructure, therefore economy may be involved with demand-pull and cost push inflation simultaneously.

The second point is, regarding Monetarists' on suggestion keeping of down the rate of growth of money supply for price stability. The real issue is whether in the process, employment and growth have been sacrificed or not. Monetarists believe that any way of keeping down money supply growth is legitimate since employment and output growth are not sacrificed. The critics of Monetarists reject this and argue that stringency has real as opposed to only monetary consequence.

Section Two:
Monetarist and Iranian Economy

Pesaran (1995), Nili.M. (1987) Komijani and Alavi (1999) are focusing on two common points, that the inflation in Iranian case is a monetary phenomenon and for controlling it the independent Central Bank is necessary . Pesaran in his paper discusses the relationship between money supply and prices and concluded that the relationship is positive. We do agree with the author in this matter that there is a positive relation between money supply and prices but our interpretation of the relationship is not the same as the author's. However, we would like to argue that it was the mismanagement of Iranian policy makers, which could not lead the credits to productive sectors of the economy, therefore the large parts of credits absorbed by unproductive sectors. However it is important to note that the Monetarist presupposition in that money supply has an effect on money income, its effect on prices is a derivative one, and is assumed to arise from the fact that real GDP is autonomously determined. We found that money supply and nominal GDP have been not correlated, then this does not establish Monetarism and Pesaran's work, which focus on the relation between money supply and prices, therefore does not satisfy the Monetarist hypothesis.

Central Bank's Independence

Monetarists everywhere believe that in order to optimize the monetary policy, the Central Bank should be independent Pesaran (1999, p 64) mentioned:

"The main causes of the excessive monetary expansion and inflation has to be found in the government's unwillingness to oppose credit demands of politically powerful groups (both inside and outside the government). In Iran these political considerations are more critical for the conduct of monetary and credit policies, both because of the size and political importance of the semi-public enterprises, and the relatively non-responsive nature of interests rates to changes in the economy's inflationary environment. As regards the above view some question may arise

Why an organization (CB) whose chief is not selected by people should decide about monetary policy, which is such an important and effective economic element in the whole life of people?

Iranian experience shows that from 1961 to 1995 the rate of liquidity(M1, money supply,+M2) increased by 151643 percent while the rate of inflation increased by 10056 percent only. The main reason for a disproportion in the inflation rate and the rate of liquidity is a fall in the velocity of circulation of money from 5.8 in 1961 to 4.131 times in 1979 and 2.19 times and 1.6 times in 1981 and 1991 respectively.

Part Three

The Structuralist view

In the Classical theory of production the presumption is that the economy is on 'full-employment' and there are perfect competition together with minimal state intervention. Economy, being at full employment, is supply-constrained.

For Keynes, the shortage of effective demand is the original constraint for the economy which tends to operate below full-employment. He argues that government intervention is a must for the elimination of this demand constraint. According to the Structuralist school, there is another constraint that forces the economies of developing countries to work below full-employment. To eliminate this problem, the countries should change the economic structure. Although there are different ideas about the causes of inflation among Structuralists, the consensus of Structuralists on inflation can be summarized as follows:

A group of economists introduced a new school of economic thought in the late 1950s and early 1960s that became famous as Structuralism. The school's experience was in the Latin American countries, but Structuralists claim that their theory can also be applied to explain inflation in the rest of the third world economies with some modifications. Before we begin to discuss their thoery, it is necessary to give a definition of Structuralism. Taylor (1981, p.3) noted;

"an economy is a structure if its institutions and the behavior of its members make some patterns of resource, education and evolution substantially more likely than others.

Economic analysis is Structuralist when it takes this factor as the foundation stone for its theories".

Baer and Kerstenetzky (1964) have defined Structuralism as;

"... the structural position is that in developing countries with rapid urbanization, structural maladjustments themselves responsible for imbalances which cost unavoidable price increases. The attempt to restrain such price increases may result in unemployment and stagnation, which in turn may lead to political instability that threatens the very existence of the economy."

Jorgenson and Waelbroeck (1974, p.6) defined the dual objectives of growth and stabilization as the center point of Structuralists' debates;

"The structure of the system is such that it generates certain disequilibria: mainly inflation, unemployment, public deficit, balance of payments disequilibria, stagnation, etc."

In short, the Structuralists argue that the economic structure of developing countries is totally different from that of developed countries; therefore, the nature of price instability must be different from that of the advanced countries. The economic problems of developing countries are rooted in their economic structure. In addition, Structuralists mention that oligopolistic markets, class differences, low productivity in agriculture sector, the need to imports intermediate and capital goods and inappropriate growth of different economic production sectors are the main characteristics of less developed economies. Structuralists distinguish between the causes of inflation (autonomous elements) and the mechanism by the development of inflation (propagations elements).

Autonomous Elements

I .The demand-shift element

This element has relevance to the changing composition of demand. As Argy (1979, p.74) notes "shifts in the composition of demand as distinct from generalized excess demand, also create an upwards bias in price level." Of course we should note that the effect of the composition-shift is not the same between developing and developed countries. For the following reasons, rate of inflation will be more with a change in demand-composition in the former than in the latter countries.

The industrialization process in developing countries causes in the normal course a change in demand-composition and hence in the output-mix. In addition the composition of demand changes only to changes in tastes and income distribution. Thus, excess demand arises in particular sectors and pushes up the price level.

Import of developing countries' exports consist mainly of primary goods and these countries suffer from long-term declines, relative stagnation and in some cases even in their foreign exchange revenue. Therefore, changes in the composition of production towards goods which need imports but are not immediately exportable foreign balance. Lastly, difficulty in shifting resources in developing countries contributes to a rise in the rate of inflation.

II. The Export Instability Element

Argy (1964, p.75) argues that: "Fluctuations in export receipts will tend to create a long-term upward movement in the price level. This argument is taken to imply that the rate of inflation is a positive function of the degree of export variability." For three reasons, instability in export may increase the rate of inflation among the third world countries:

1. When developing countries tries to increase their revenue through export, perhaps this will generate some demand-pull inflation; but when the revenue falls, prices do not necessarily decline in oligopolistic markets. Even the level of aggregate demand may not fall since government would step in to support it. And what is more, money wages too are not downward-flexible in the countries under consideration.

2. Governments generally tend to raise their expenditures when export revenues increase, but in the case of decline of export revenue, the expenditures are not downward-flexible for two reasons. A considerable segment of public expenditures appropriated for current accounts pay for salaries wages and social security, which are not easy to cut when the government revenues fall.

3. Generally speaking, when foreign exchange earnings in developing countries rise, wages in export sector tend to rise and this has its effect on many other sectors and wages raise as well; when the export earning falls, there is no corresponding offsetting effect.

III. The Agricultural Bottlenecks

According to generally accepted views among Structuralists, the agricultural bottleneck is the most important problem in developing countries. Kaldor (1978, p.130), Argy (1979, p.77), Thirlwall (1974, p.54), Jorgenson and Wallbroeck (1974, pp.6-9), Bear and Kerstenetzky (1970, pp.4-5, pp.378-9), Taylor (1991, chapter 4, pp.85-86 and chapter 9, pp.162-166) pointed out that the agricultural bottleneck of developing countries is the beginning point of inflation. The core of the Structuralists' argument is: in the process of industrialization, demand for food will rise and the food supply cannot match the rise in demand rapidly enough, so the food prices go up and workers attempt to keep their real wages by demanding and obliging high money wages; capitalists on the other hand try to keep their profit safe by joining up final prices. For such a situation capitalists have two options: either to cut down real wages, if workers are willing to accept a lower standard of living, so that inflation would not occur, alternatively when workers are not willing to accept the lower real wages, capitalists any consider higher money wages, but raise prices at the same time.

To solve the problem, the government is often tempted to cut down exports of food, raise food imports and impose food price control.

The above measures however, may not be adequate for preventing rising prices, because if exports decline or imports increase, it is necessary that other segments of import fall to preserve equilibrium in balance of payments. Reduction of imports in is presumably accompanied by rising prices in these sectors. Price control sector may avoid inflation in short term, but it will not be able to eliminate the agricultural bottleneck in long term, and as a result the economy will be affected with lagging agricultural supply; and food prices will go up.

IV. The Scarcity of Foreign Exchange

Developing countries are also likely to face a scarcity of foreign exchange, because of the low-income elasticity of demand for their export goods (that is mainly primary goods) and the high-income elasticity of their demand for imports of intermediate and capital goods. Responding to the problem of foreign exchange shortage, policy makers in developing countries would follow either import controls or devaluation policies, both of which lead the economy to inflation. As the above illustration shows, autonomous elements in developing countries make some sectors unable to adjust themselves to the aggregate demand that is created during industrialization and the development process. We have to mention that Jorgenson and Wallbroeck (1974, p.7) locate the causes of inflation in the structural limitations of the system, and in the cumulative inflationary pressures. They write, "The structural limitations are reflected in the inability of some sectors to adjust to changes in the level and composition of aggregate demand... These primary causes of inflation, structural and cumulative, need a propagation mechanism for inflation actually to develop."

Propagation Elements on Inflation

The causes of inflation and autonomous elements need a propagation mechanism to spread inflation. We can classify the propagation elements into two groups. Let us for

simplicity, assume that society is divided into two classes; workers and capitalists, who struggle to keep real wages and profits, respectively, safe in the process of inflation. The second struggle is between the public and private sectors to increase their share of real resources. This conflict is manifested in government expenditures, revenues and the ways in which government covers its budget deficit. Another major propagation element is the exchange rate; developing countries are usually under pressure to devalue their currency against foreign exchange in order to increase their exports in the process of development. But generally, devaluation will be accompanied by cost push inflation.

Non-Structural Elements

Structuralists accept that non-structural elements also can be important in explaining differences in the inflation rate. Structuralists argue that money supply is an endogenous variable. In contrast to the Monetarists, the Structuralists argue that changes in money supply are effected by changes in prices, not vice-versa. When the rate of inflation rises, real government revenue falls (supposing other things are equal) while the expenditures of government increases and subsequently the budget deficit goes up. For financing the deficit, usually, the government borrows money from the central bank, and as a result, we can expect an increase of money supply and a sustenance of or an acceleration in the rate of inflation. The second possible reason for an increase in money supply in the wake of inflation is via expectations. Rising prices may cause firms and households to anticipate that prices will increase further in the next period. If the 'Elasticity of expectations' is greater than unity, then the level of demand will be raised and as a result, the velocity of circulation will also increase.

According to the Structuralists' view, a third way in which money supply increases and the rate of inflation is sustained is through a rise in interest rate. If there is a high rate of interest for idle liquidity, then idle balances would be drawn into active circulation and hence raise the velocity of circulation. Thus the rise in the interest rate on the other hand may not have any direct effect by way of arresting inflation.

In contrast to the Monetarists, the Structuralists believe that for economic development inflation is unavoidable. According to this school, inflation will stimulate investment,

because where prices are rising and the economy is in boom, the motivation for investment will rise on the one hand and inflation will reduce the real rate of interest (which will stimulate investment) on the other hand. The Structuralists argue that any attempt to restrain such inflation during the industrialization process may lead the economy to unemployment and stagnation, and as a result bring political instability.

Criticism of Structuralists

The Structuralists' basic argument of inflation focused on the low elasticity of agricultural food production; their suggestion was land reform, and the elimination of economic bottlenecks in order to increase domestic production. Approximately forty years have elapsed from the time they advanced their ideas and many developing countries have carried land reforms and removed some of their important economic bottlenecks, to a point where their demand for foodstuffs could not match their supply; and yet high and even rising levels of prices have perished. For instance, Chile performed land reform and removed some basic economic problems in the beginning of the 1970s, but still the prices continued to remain high and even rising. In the Iranian case when the country's agriculture was working under the semi-feudal system and the productivity was low, the country's rate of inflation was single digit while during last thirty years; the average rate of inflation was 16 percent. Iran had resorted to a land reform twice (during the Shah regime the reform took place in favor of mechanized landlord and middle landlord classes; last, some poor peasants enjoyed the land distribution only after the revolution when egalitarianism was the dominant ideology in Iran). And Iran also emphasized on some supply bottlenecks, but still the rate of inflation has been one of the big problems of the Iranian economy. It must be noted that land reform is a necessary condition in order to increase the productivity of agriculture sector but is not a sufficient condition.

Let's consider another Structuralist principle here; scarcity of foreign exchange of developing countries in the process of industrialization. During the past three decades, Iran had yearly twenty millions dollars of foreign exchange revenue from oil only. In the 1970s when its oil export revenue had quadrupled, Iran and some members of OPEC

invested a significant segment of the revenue in developed and developing countries; Iran had even given a loan to France. Therefore we cannot accept the shortage of foreign exchange as a cause of inflationary process in the Iranian case, unlike perhaps in the case of other less developing countries. As we have observed in chapter two, one of the main reasons for the low rate of inflation in the 1960s was the inverse in Iran's foreign exchange revenue, while paradoxically in the 1970s when the country's revenue increased more than four times, the rate of inflation jumped from single digit to two digits. Of course, we may be able to accept the scarcity of foreign exchange for some episodes of inflation in Iran, but it must be noted that in regard to the Structuralist hypothesis that developing countries have low-income elasticity of demand for their exports, this hypothesis is not true for oil exporting countries like Iran. This presumption, therefore, is not applicable to Iran and many oil exporting countries. In many studies done by the Structuralists cost-push inflation is either absent or not properly emphasized. Although Structuralist models of inflation are not complete, they provide at least a key to a better understanding of the problem of inflation in less developing countries.

Summary

The Structuralist school gives its special attention to inflation in developing countries, although the school analysis grew out of the Latin American experience, Structuralists claim that their theory, with appropriate modification, will be able to explain inflation in other developing countries too. Structuralists tend to distinguish the cause of inflation into autonomous elements and the mechanisms by which inflation develops. Although the Structuralists emphasize the structure of the economy as the primary original reason for inflation, they open the door for non-structural elements for inflation as a secondary reasons for inflation.

Part Four

Definitions of inflation:

Before going into the explanation of the inflation and related issues, it is necessary to offer the concise Keynesian and Monetarist's points of view on the definition of inflation, the demand-pull inflation, and cost-push inflation.

Inflation may be defined in deferent ways, as Taylor noted (1991, p 86) "Inflation is a dual process. It unavoidably has a monetary dimension. But at the same time prices are determined by costs, meaning that social conflict over values of inputs such as the nominal wage and exchange rates and rules for contract indexation combine to force up the price level". Bhadury(1990 . PP. 206-207), "... the nominal (money) price level rises due to two analytically distinguishable effects: a) Prices rise as labor cost per unit of output (w/x) increases". (b) "If prices rise merely to cover such labor cost per unit of output, the share of profit, would remain constant ,as price (P) and labor cost per unit of output(w/x) increase by the same proportion. To finance a higher level of real investment, the share of profit must increase and the real wage rate must fall". As it is clear the (a) definition is cost-push inflation while the (b) definition is demand-pull inflation.

Monetarists tries to define inflation as "the proportionate decline in the purchasing power of given nominal amount of money" (Monetarist definition).

Demand-pull inflation theory:

The demand-pull inflation theory was emphasized by Keynes in "the general theory", and later with his series of articles that was collectively published as 'How to pay for the war in 1940'. Of course, the concept of the theory of Keynes was not the same as the Monetarist's perception. Keynesians believed that change in aggregate demand might happen due to changes in private sector consumption, investment, behaviors, or fiscal policy.

Keynesians may accept that there is a close relation between increase in money supply and inflation, but they will consider the growth of money supply as being induced by inflation.

Cost-push inflation:

Demand-pull inflation theory was developed to explain the post-war inflationary process, which had occurred in the industrial countries, but it became inadequate to export the stagflation that occurred in 1970s in these countries. Pure cost-push inflation theory says that, the inflationary process can take place because of the activities of monopolistic groups in labor market (trade unions) and imperfect competitive producers who are able to bid up wages and profits respectively. According to this theory, society is composed of two classes- the workers and the capitalists- who struggle among themselves in order to increase their shares of the national income which causes the inflation. Suppose the national income is divided into two shares, the workers' and the capitalists shares, denoted by Q and 1-Q respectively. Suppose the workers are not happy with their share, they may try to increase it to $Q\square$, of course the sum of Q^* and 1-Q will not be equal to one. In such a case, capitalists have two options: Give in and watch their share erode, or raise prices to cover their loss. In the latter case, workers will be satisfied, but they will soon come to know that it is money illusion. Again, they raise their wages and the whole process repeats itself. Finally, it will resulted a wage-price spiral. However, monetary authorities will be faced with the choices; of either increasing the money supply and thereby fueling the wage-price spiral, or accepting a recession in the economy.

Further, there are other reasons for a shift in aggregate supply to the left ; for instance, a rise in material prices. Now let us discuss about the important points of Keynesian and Monetarists theories inflation.

Differences between Keynesians and Monetarists on demand-pull inflation and cost-push inflation:

1. The main point regarding the difference in the demand-pull inflation theories between Keynesians and Monetarists is that the former argues that rising money supply is an effect, while the latter believe that it is the cause of inflation.

In the case of cost-push inflation, the differences are more complex. Keynes had mentioned the relation between costs, prices, and the money-wage level, which is not

inconsistent with the cost-push inflation theory. On the other hand, Monetarists are not willing to accept the cost-push inflation theory. For elucidation of the debate between these two schools of thought on the cost-push inflation, we consider the figure 1.

a) A cost-push inflationary spiral (when there is downward shift in the aggregate supply curve)

The aggregate demand and the aggregate supply are denoted by DD and SS respectively and Q and P stand for production and price. Now, suppose the cost push inflation (increasing wages), cause the aggregate supply curve to shift upwards from SS_0 to SS_1, as a result, output declines from Q_0 to Q_1 and price from P_0 to P_1, and unemployment also increases. If the government decides to act in order to offset the declining rate of
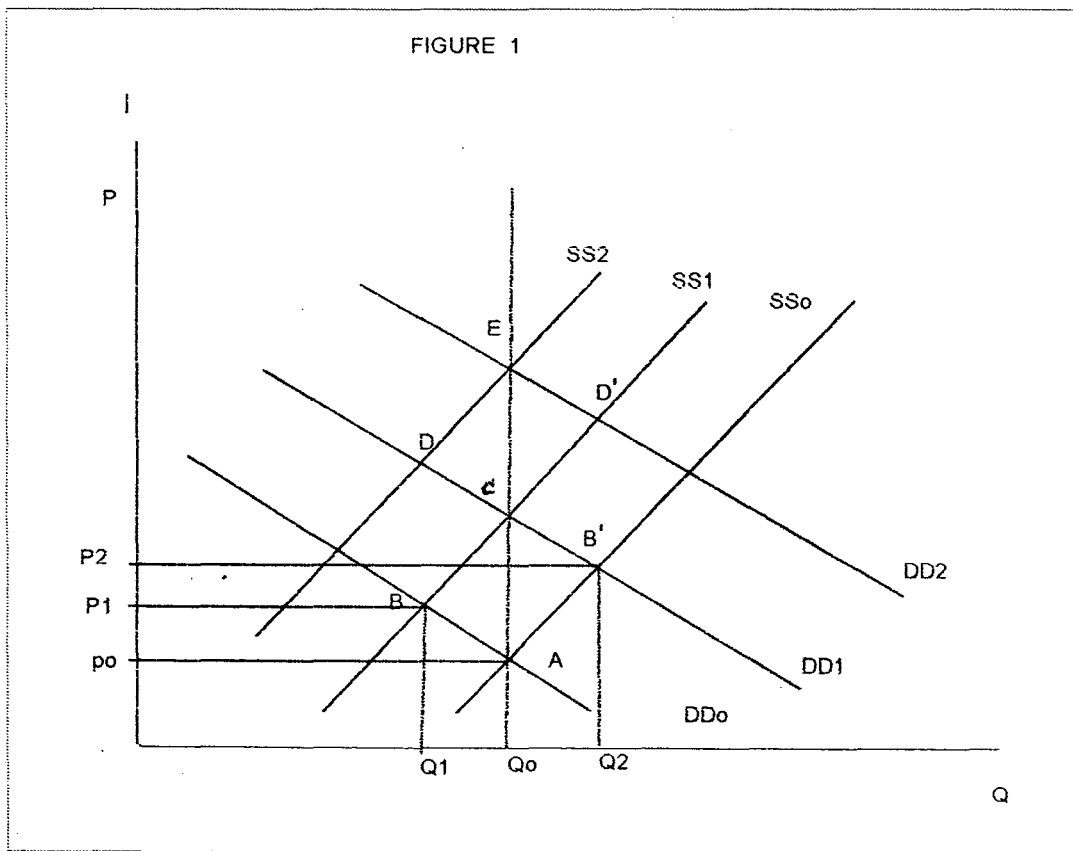
FIGURE 1

unemployment with increasing aggregate demand, it will be possible with a further increase in prices. However, the aggregate demand curve will shift upwards from DD_0 to DD_1. As we can observe from the figure, when DD curve turns up, prices rise further

from P_1 to P_2, and the output returns to its original level and the equilibrium in the economy moves to point C. At the P_2 level, real wages are reduced again. The unions will try again, for a further rise in money wages that will cause the SS curve to move to SS_2, and the whole process repeats itself.

b) A cost- push inflationary spiral (when there is upward shift in the aggregate demand curve)

Again we consider figure1, suppose the government attempts to increase the level of output above Q_0 by a shift in aggregate demand curve. In such a case economy will move upwards from point A to point B′. Consequently, prices and output go up and unemployment falls. Once again laborers will bargain for more wages which will cause the SS curve to shift upwards, to SS_1, equilibrium in the economy will move to point C, with a future rise in prices and fall in output back to Q_0, an increase in unemployment. Once again the government has two options; if policy makers are concerned about the decline of the rate of unemployment, they will further stimulate aggregate demand, in this case the DD curve will go up to DD2, then the cycle is underway again. In the first part of the inflationary spiral we found that the initial, economy under cost-push inflation shifted to B from point A (equilibrium point) and out put fell to Q1. In the second part of the cost- push inflation, we found that the economy improved to B′ and as an initial stimulus of demand pull, the out put and employment increased.

We have observed in the above analysis, that when output fell the aggregate supply curve shifted to the left side and prices increased (the supply push), again when output rose the economic equilibrium moved to the right side (demand- pull). In case, once the cycle is underway, there is an increase in prices and hence it is difficult to recognize whether the initial stimulus was cost-push or demand-pull.

However, Monetarists will not be happy with the above analysis because they would generally have faith in the labor market. Of course they may accept the analysis in the figure1 in the short run, but according to the their analysis, in the long run ,as prices rise money wages will also rise, therefore the supply curve, SS, will shift to SS_1 as we have explained above. Monetarists would argue in the long run, that the labor market would be

cleared or be close to it, and economy will be in full-employment. Of course they agree that it is possible for frictional unemployment to exist compatibly with the stake of perfect competition. Therefore, they believe that the aggregate supply curve in the short run can not be vertical and in the long run it would be a vertically broken line as we can see through the points ACE. Therefore, the inflationary spiral will not be a result of cost-push pressures.

It does not need us to go further to argue that in reality, economics is not as the Monetarists imagine. In the real world, two monopolistic groups; in the labor market (trade unions) and imperfectly competitive producers, have controlled wages and profits, respectively. Of course it is interesting to note that the oil price is not determined by purely economic factors; non economic factors in particular politics, play an important role in both the supply side and the demand side of the international oil market.

Conclusion

The first part of this chapter connected with the old version of *"The quantity theory of Money"*, argued that there are two tendencies within Classical economists on the rate of money. The first tendency, which was led by Ricardo, believed that an increase in money supply would affect the general prices only, while the second tendency argued that money supply could increase output also.

In the second part we have discussed the conception of Monetarist schools on inflation. In the first section we focused on Friedman's views on *"The quantity Theory"*. He has mentioned that demand for money is a function of several elements and that the most important element is permanent income. Then we continued our discussion on "rational expectations". We have noted that this approach divides the impact of money supply into anticipated and the unanticipated. Of these, the unanticipated alone can have an effect on output. We also found that a big difference between the Monetarists school and expectation school is the following: the former believes that money supply may affect output in short run but in the long run it affects prices only; the latter argues that changes in money supply affect prices only, in other words, there is no trade off between rate of unemployment and rate of inflation even in the short run. We argued that the

Monetarists' assumptions, flexibility of wages and prices, are unrealistic in the real world.

In the third part relating to Structuralists, our special attention was devoted to autonomous and propagation elements of inflation that defined the former as the cause of inflation and the latter as a mechanism to spread inflation. We have mentioned that in the Structuralists' view the starting point of inflation is the agricultural bottlenecks when the supply of food can not match its demand; therefore food prices will increase and it would affect wages in the industrial sector giving rise to an inflationary process. Finally we found that in comparison with the Monetarists, the Structuralists were able to provide a better interpretation about the character of inflation in developing countries.

The differences between the Monetarists and the Keynesians on demand pull inflation and cost-push inflation was discussed in the last part of this chapter. Monetarists believe that the cause of demand pull inflation is the increase of money supply by a government keen on increasing the rate of growth. The Keynesians argue that if there is a relation between money supply and inflation then that is because the growth of money is the effect of inflation. We have considered cost-push inflation as another reason of inflation and mentioned that the Monetarists do not recognize this phenomenon. We also noted that the cost push inflation mainly focuses on conflict between the two clans of capitalist society, workers and capitalists, to prevent their shares of GNP from being eroded in the period of inflation.

Chapter 4

Excess Demand: The First Oil Boom (1973) and the Iranian

Economy

Chapter 4

Introduction

Perhaps the phenomenon of inflation in the 1970s was a crucial one in the history of macroeconomic thought. During the pre-1970s, mainstream Keynesian economics used to argue that there was a trade off between the rate of inflation and the rate of unemployment. However, a general wage explosion in the OECD countries in 1968 which undermined this theory. The trend of increasing prices in the advanced economies, which was started by this continued with the increasing prices of primary commodities and the oil-boom in the international market in the early 1970s. This increase in unemployment in the wake of the first oil-boom could not bring down the inflation rate, forcing economists to review their inflation theories. For the Iranian economy, the decade of the 1970s was a wealthy decade in respect of the flow of financial resources to the domestic economy. It was a crucial decade in yet another respect. It marked a period of poor financial management, which accelerated the dependence of the economy on oil revenue on the one hand, and on foreign countries on the other hand. The present chapter discusses inflation in the Iranian economy in the 1970s. It is divided into four sections. The first section is a literature review in which different opinions on inflation in Iran during the 1970s are discussed. The next section discusses price trends in the pre-1970s period in the developed countries as well as in Iran. The third section is the main one devotes to excess demand in the 1970s. Section four refers to agriculture and infrastructure bottlenecks and is followed by some concluding remarks.

Section One

Excess demand Inflation in 1970s

Literature Review

In one of the pioneering works on inflation theory, based on empirical data Ghaderiasli (1978) and (1986), illustrates the main causes of inflation in Iranian economy. He began his analysis with a theoretical section that discussed all types of inflation and came to the conclusion that demand-pull inflation has been dominant in the Iranian economy from 1960 to1984. He believed that fiscal expansion was the reason behind the demand-pull inflation in Iran. The author argued that the cost-push inflation theory did not provide an explanation of the Iranian inflation, because there were no trade unions in Iran. Thus wages always rose after prices and not vice versa. In his empirical work Ghadiriasli showed that a considerable part of government expenditure in 1970s was allocated to unproductive sectors, especially to the service sector and the military. He noted (1978, p. 15) that any increase of purchasing power would be inflationary in Iran owning to the inelastic supply of agricultural commodities. Finally, the author came to the conclusion that economic development in Iran without inflation was impossible. Referring to Ghadiriasli's opinion on inelastic supply of agricultural production, we should mention that the Iranian economy has never experienced full employment. Hence, some segment of factors of production are always under utilized. If demand increases and leads to productive sectors in general and agriculture sector in particular, we can expect an increase in production.

Taiebnia's (1995), study is an important work on inflation in the recent years. The book has a theoretical as well as an empirical discussion; of the two the latter is richer. The study examined all approaches to the study of inflation and found that no single approach alone can explain the origin of inflation in Iran, because a set of problems together gave rise to inflation in the Iranian economy. He focused on the increase in oil prices in 1973. According to him when oil prices increased in the international market, the Iranian balance of payment surplus caused the money base to increase and it made the Iranian

budget rise dramatically by around 41.1 percent yearly during 1973-1978. And he found that the construction sector was the initial point of the inflationary process. The author argued that wages in the construction sector increased because of shortage of agriculture production on the one hand and the increase in oil revenue and the consequent budget expansion on the other. Taiebania's idea on the cause of inflation in 1970s in that it was because of the increase in oil prices that excess demand was created. It is interesting to note that excess demand does not necessarily lead the economy to an inflationary spiral. As we have mentioned in chapter two, in the case of Iranian economy when foreign exchange revenue rises the economy will not undergo any inflationary pressure, if government can channelize it to the investment sector, the economy will not undergo any inflationary pressure. Finally the author suggests that a change in the pattern of the Iranian economy is a must in order to control inflation.

Jalali Naeini (1996) records a series of empirical studies that cover the past 30 years. The work focuses on post-revolutionary Iran. The author discusses production and inflation in six classified inflationary macro patterns. The most interesting idea considered by the author is Thirlwall's model that is based on Keynesian approach. Thirlwall argues that inflation causes a shift of income from wage earners, where marginal propensity to save is low, to capitalists, whose marginal propensity to save is high. However as investment increases, the rate of growth will rise as a result. Jalali observes that Thirlwall's idea was not supported by empirical studies in general and in Iran in particular. He also rejected a positive and significant relationship between rate of growth and inflation during 35 years in Iran (from 1960 till 1995). The author's empirical study shows that the rate of inflation has a negative effect on output. Finally, he formulated that an expansionary fiscal and monetary policy, in a situation where foreign exchange revenue is high (and therefore import can increase), would raise output. In less favorable situations expansionary fiscal and monetary policy will affect prices only. There are two points in regard to his opinion on fiscal and monetary expansionary policy which one should discuss. The first, even when the Iranian government was in good position on the foreign exchange reserve front, because of bottleneck for import, rate of inflation could not be controlled. The second, as is clear from this paper and his other

papers (1999a), and (1999b), he is an advocate of Monetarists; but when he realized that fiscal and monetary expansionary policy are capable of effecting production, he cannot satisfy the Monetarist hypothesis.

Looney (1982), discussed the reasons behind Iranian inflation in 1979. The article discussed the theoretical and empirical aspects that we are going to look at later. He emphasizes that the developing countries are left with two options during the inflationary process, either domestic inflation or a balance of payments deficit whose magnitude depends on the degree of "openness". Looney created four formulae and in the all of them he used the symbol Z, for ratios of some particular variables to some measure of domestic production. They are:

Z= nominal imports divided by real nominal income(or ZN/NOXNP).

ZZ= ZN/DOMEST where DOMEST = nominal agriculture + manufacturing value added.

ZAG= agricultural imports/NOXN.

ACON= consumer imports/NOXN.

The author used an econometric model to estimate the equations, where the dependent variable is rate of growth of output of consumption goods and services and independent variables are a combination of several factors. The important independent variable is a deviation of real nominal GDP from its long run trend DTNOXPI, the rate of change in the export price index of industrial countries WINF, the growth in real non-oil GDP (GNOXNP), the terms of trade (TTC), and the growth of money supply GM_2. The author put Z with WINF, and excess demand or GM_2 in the equation. The fact that Z was significant and negative (in all the equation) means that from 1960 when the project of integrating the Iranian economy to the global economy began, the government could, by, shift the import pressure from domestic inflation into balance of payment deficit. Another interesting point that he found is that the growth of agrarian production could have had a negative effect on inflation in 1970s and not vice-versa. Although the paper has not considered the theory of struggle between wage earners and profit earners and how this influences inflation but Looney shows his sympathy for Gail Cook Johnson's idea, which says that there is a struggle between the private and public sectors to increase

their shares of real resources. This worked through the expansion of oil-based expenditures and the competition with the private sector for skilled labor and managers.

It is true that the Iranian government received 90 per cent of the country's foreign exchange but there has been a struggle among different social groups in order to increase their share of income. Looney, in his empirical work found that an autonomous increase in wages was an important factor behind inflation during the 1970s. While a case could perhaps be made for the existence of a wage-cost push mechanism in the manufacturing and construction sectors, it is difficult to see how, as an empirical fact, this effect could have dominated the inflationary process in these sectors.

Section 2
Trend of International Prices in pre-1970's

The phenomenon of stagflation in 1970's was a crucial point in the economic history of the past century. To find out the reason of the phenomenon and its effects on inflation in the Iranian economy we have looked at the trend of international price levels in the pre-1970's on the one hand and Iran's price levels on the other.

The World prices

The period after the Second World War was exceptional interms of economic growth in advanced industrial countries with price stability, low level of unemployment and fast rising living standard. From 1953 till 1967 prices in the 11 leading industrial countries rose by an average of 2 percent (see Kaldor 1978, p.214). A question may arise as to why there was no slump in the post-Second World War period as was expected to happen and as had happened in the post- First World War period. What we had was steady growth accompanied by price stability during 1953-1967. Without doubt interventionism by the state through demand management in the advanced countries and the parallel introduction of "economic planning" in the Third World were the main reasons behind this phenomenon (Prabhat Patnaik,1992).

The World Prices in the Threshold of Oil Boom

The trend in prices in the industrial countries has changed since 1967. In 1968 there was a major wage expansion. Then the primary commodities' price index increased sharply after 1971 when the industrial countries abolished the system of fixed exchange rate. According to the UN, over two years (1971-3), the price index of primary commodities increased by 58 percent in the industrial countries.

Prices in Iran before Oil Boom

The table 1 provides the trend of changing prices the Iran and its trading partners between 1968 and 1972.

Table 1: Comparison of Iran's inflation rate with its trading Partner. (1968-1972)

Year	ITPP	IRI
1968	4.8	1.02
1969	4.9	1.04
1970	5.8	0
1971	5.9	0.17
1972	5.6	6.8

Sources: International Financial Statistics, 1973

The table suggests that during 1968-1972 prices' have increased in Iran and its trading partners. As the table shows, the average rate of inflation jumps from 4.8 and 1.02 percent in 1968 to 5.6 and 6.8 percent in 1972 for Iran's trading partners and Iran itself respectively.

Section 3

Inflation in Iranian Economy During 1970s

In this section, we first discuss briefly about the oil-boom the government expenditure their role in excess demand and our special attention to the international effect on inflation in Iran during the 1970s.

Oil Boom and Government expenditure

As we explained in the model of demand- pull inflation when oil prices increases in the international market, the Iranian revenue will also increase, which it can be expanded the expenditure by the government and create excess demand as a result.

As we have already mentioned, when oil prices increased in international market in 1973, the Iranian foreign exchange revenue increased from $3.6 billion in 1972 to $5.6 billion and $21.142 billion respectively in 1973 and 1978. It is clear from above that the considerable amount of the Iranian foreign exchange revenue after 1973 was appropriated for the government expenditure and according to the above model, it could create excess demand. We will postpone discussion about productivity and non-productivity of current and development expenditure till the next chapter, and we will discuss about government budget in post-oil boom here. Total revenue of the plan was $122.8 billion of which 80.5% came from oil, while share of current expenditure was $50.26 billion, of which $29.1 billion was appropriated for defense and a significant part of arms was purchased from the United States. The fall in the share of investment in the agricultural sector continued; it fell from 9.4 percent of the total investment in 1972 to 5.3 percent and 4.4 percent in 1976 and 1978 respectively. The share of investment in the industrial sector changed slightly from 17 percent in 1972 to 20.9 percent in 1978. The share of investment in the service sector almost remained unchanged from 63 percent in 1972 to 63.2 percent in 1978 (see table 9, chapter 2). As is clear from the above illustration, the share of service sector is the largest in investment and it needs to be interpreted.

A considerable amount of oil revenue flows into the domestic economy through the government budget which created excess demand. As the table 2 shows the Iranian

government expenditure during the 1970s. According to the table the government annual budget increased from 415.1 billion rials in 1972 to 1174.4 billion rials in 1974, after the oil-boom and finally it reached to 2018.2 billion rials in 1979 which we can safely say t created the excess demand as a main reason of the inflationary process in the 1970s.

Table 2: The Iran's government Budget During (1970-1979) in b. Rials			
Year	Total Expenditure	Total General Revenue	Budget Deficit
1970	221.1	182.4	-38.7
1971	315.4	258.3	-57.1
1972	415.1	302.1	-113
1973	531.4	465	-67.1
1974	1174.4	1394.9	220.5
1975	1496.2	1582.1	85.9
1976	1675.4	1743.8	68.4
1977	2174.9	2126.7	-48.2
1978	2044.2	1699.3	-344.9
1979	2018.2	1791.8	-226.4

Source: Budget and Plan Organization, Magmoa-e-Amari, 1997, table 12.

Figure 1
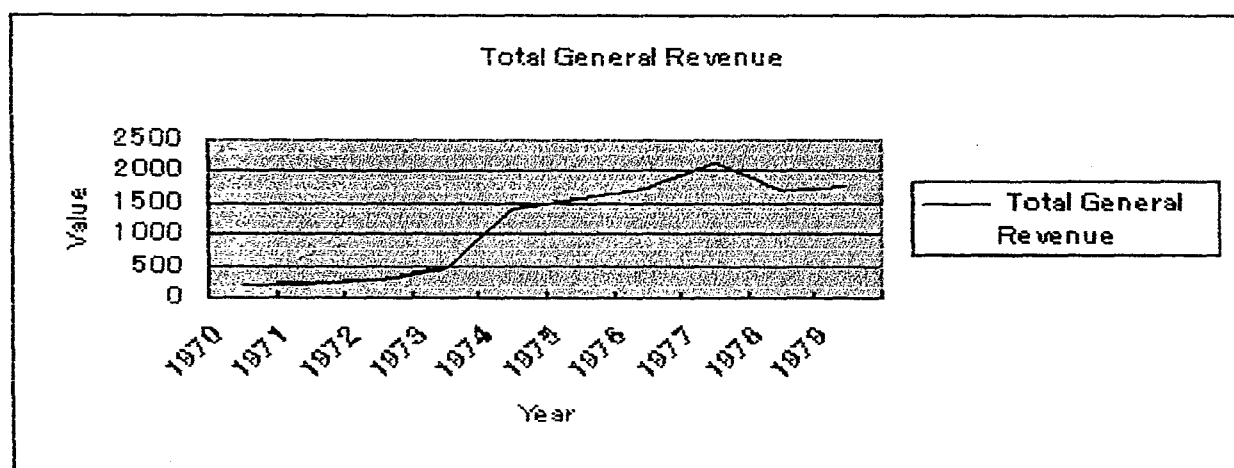
The plan reviewed

The government decided to increase its expenditure when oil prices increased. Planners believed that any increase of the expenditures would create a gap between demand and supply, while the Shah insisted on reviewing the plan in order to increase the expenditure amount. Finally, three proposals were provided, and the moderate one was accepted by the budget and planning organization. Expenditure of the reviewed plan was double of the original one and seven times that of the fourth plan. In the original one, it was supposed that the capacity of ports increased from 7 tons to 9.7 tons, or 40 percent, but the capacity target rose to four times in the reviewed plan that was practically impossible. Also, budget for construction sector increased from 402.8 billion rials to 925 billion rials, when demand for labor, land and building materials increased. Consequently, rising prices in the construction sector affected other sectors of the Iranian economy, but we should emphasize again that it was not the cost push inflation which was the reason of the inflation during the 1970s.

Imported inflation

A closed economy where foreign trade is absent, can never experience imported inflation. In other words, we can have imported inflation only in an open economy.
When the Korean War started, the world economy experienced inflation of the post World War II period. From Jun 1950 to January 1951, the prices of primary commodities rose by 60 percent in the international market in response to the American army's

demand (the demand pull inflation). But it came as cost push inflation in many small countries when they imported materials.

Therefore we can define imported inflation as an increase in the prices imported commodities, materials, and machinery which sets "passed on" to the domestic price-level. Suppose oil is the only imported input. When oil prices increase in the international market, it will affect the level of profits in the various industrial economies. Further, the profitability of energy intensive industries will decline comparative to energy saving industries. In such a case, either the wages should be as much as flexible to offset increasing oil prices or the produces have to for bear a part of their profit.

As we know the price elasticity of demand of price for oil is low in importing countries in general and in the industrial countries in particular. Thus when oil prices increase, the payments of oil importing countries will rise and these countries will have to export more in order to cover their increasing cost of importing oil. Hence the domestic supply will be squeezed, then increase prices, and real consumption of laborers will decline as a result (cost push-inflation).

"According to monetarists if the labor unions protest against the falling real wages and pressure employee for high level of wages, the natural rate of unemployment will increase. Monetarists would argue that flexibility of wages will result in a decline in the natural rate of unemployment on the one hand and increase the competitiveness of domestic productions in the international market in other. In short, the balance of payments portion that would deterioration imported inflation in oil importing countries bout the deterioration would be less with flexibility of wages" (Taghavi, 1997,p.115). Of course, it is important to mention that monetarists do not believe in imported inflation or any kind of inflation except monetary inflation.

Monetarists' Interpretation

Here we are going to consider one of the earlier Monetarist's interpretations on inflation in Iran during the 1970s. Dedkhah (1985) estimates three regulations. One relates to the relation between the rate of money growth and GDP at constant prices and CPI. The second relates GDP to time. He ended up with the following the conclusion:

1. There is no relationship between money supply and output. Indeed, the simple correlation between the rate of growth of output and the rate of growth of money is negative and about 0.2.

2. The same correlation exists between the rate of growth of GDP and the rate of growth of price. Therefore there is no trade-off between inflation and growth.

3. There is strong correlation between the rate of growth of money supply and inflation.

Finally, Dadkhak found: "the monetary theory of inflation is applicable to Iran. Output will grow independent of monetary policy. Furthermore, high rate of growth in money supply may only produce inflation and may even cause the reduction in growth of output"(p. 371). Regarding the second statement that relates money supply and CPI it is quite possible that the increase in prices cannot cause an increase in money supply which is contrary to the Monetarist's principle that there is a cause and effect relationship between money stock and prices. The first is cause and the latter is effect. At least, some part of the increasing money supply after oil boom was for wages and salary.

For instance: ...By the late summer of 1978[the government] attempted to placate the striking workers and government spending, again financed by issuing money '(Dadkhah, 1985, p.379).

As we had already discussed in chapter 3, wages and salaries always increase after prices in Iran, and not vice versa. Therefore, inflation can be a fiscal phenomenon, not a monetary phenomenon. In this case, monetarism is rejected. As a result, the money supply in Dadkhah's third conclusion cannot be always an active variable, but inflation can be an active variable which proceeds in any supply growth in which case the monetarists they would have been reduced invalid.

Increase of Wages and Inflation

Another potential source of cost push inflation during the period under consideration can be wage increase in regarding to shortage of manpower in the process of implementation of fourth and fifth plans. The story is very simple; demand for shelter rose when extra labor forces in agricultural sector had immigrated to urban areas, after the land reforms (1963-72). Together with this there was an increase in public sector

expenditure for expanding administration after the oil boom . Together with the increase of wages in the construction sector, manufacturing industries wages were also raised. These two factors caused real wage increase. In order to remove shortage of labor, Ministry of Labor imported skilled and unskilled labor from abroad. The foreign workers who were allowed to work in Iran were specialized in several areas, for instance, doctors, from India and Pakistan, armed forces from America, etc. In 1975, the Ministry asked firms to pay between two and three months "bonus" at the end of each year to their workers a fait which appears increasable at first stage. Three years later, when the Iranian revolution began and huge labors and officers have joined the demonstrations and strikes, the government increased their wages and salaries to keep them silent. This is evidence that sometime prices, as an active variable, can affect money supply. The government's zigzag wage policy in 1970s could not give enough motivation to labor market to match itself with its demand. As we have explained above, imported inflation can be one reason of inflation in 1970s, and as we observed in 1973 and 74, when oil-boom hit the economies in developed countries and increased their rate of inflation, Iranian prices as a consequence, increased in the same period. However, while these countries could stop their acceleration of inflation, Iranian price kept rising. Therefore, we cannot accept imported inflation as the main reason of inflation in the 1970s. Looney (1985, p 342) mentioned: "There is little evidence to support the singling out of labor as a significant contribution to cost-push forces not least because of absence of strong labor unions". It should be noted that as we have already defined, the reason of cost push inflation is not only wage cost push, it can be material cost push also, as we are going to discuss in the chapter six.

Increasing demand for food in 1970s

Iranian foreign exchange revenue in 1960s and as well as in 1970s improved and what we could expect as marginal propensity to consume should be high for Iran as a developing country. Therefore any improvement in Iranian income would raise overall and in particular the demand for foodstuffs. Hence when Iranian per capita income rose (mainly after oil-boom) in private consumption demand for some items sharply increased. For

instance Afshar Haleh(1981, p.1011) has mentioned " per capita demand for red meat increased from 8 kg per annual in 1959 to 18 kg per annual in the early 1970s and local production of meat was increasing at 12 percent per annum compared to an average annum increase of 9 percent in the local production of meat". Although the rate of agrarian production could keep the pace with rate of population during 1960-1978, the former was 4 percent and latter was 3 percent the annual average rate of demand for foodstuffs grew by 10 percent during the same time. Iran, in the period of post oil-boom (1973-1978), had to import 25 percent of its foodstuffs from abroad and price of foodstuffs rose by 20 percent in 1978 as a result.

Section Four

Agricultural Bottleneck in 1970s and Shortage of Food Stuffs

As we have earlier noted the structure of the Iranian economy in general and agriculture in particular changed during three five years plans (1962-1977). Iran, during this period, has changed not only socio-economically but also changed in the other aspects. The major targets of the plans were shifting the economy from subsistence economy to modern economy. In the theory of economic development, agriculture has been a force of capital accumulation as well as supply of cheap labour for the process of industrialization. Without doubt, Iran was successful in meeting the plan's main targets. Agricultural sector could transfer surplus of capital and labour forces as well as supply a significant portion important of industrial material needed by the industrial sector. But the plans could not meet fully the demand of labor for foodstuffs during industrialization. The following reasons were behind the shortage of food supply in the 1970s.

Population and Excess Demand on Agriculture goods

According to Centre of Iran Statistics, (Table 27 1996) urban population and rural population in 1966 was 9794446 and 15994476 which in 1976 changed to 15854680 and 17854064 respectively. The huge increase of urban population happenede after the land reform when landless peasants and other poor groups of peasants migrated to urban areas

in search of a better life. In 1966, the Iranian total active population over 10 years old in Iran was 7115787 that 3380023 were working in agrian sector; the later figure declined to 2991869 in 1976. Immigration to urban areas started by the middle of 1960s but it accelerated rapidly by early 1970s. The average rate of rural-to-urban immigration was eight percent annually. In other words, the agrarian sector in 1976 had to produce food for more people with less labors in comparison to 1966. The question may arise as to whether productivity of the agrarian sector has gone up enough to offer food for 34 million people in 1976.

Decline in share of agriculture in the economic development plans

Table 3 illustrates share of agriculture and industrial scoter in the six economic plans. As is observable from the table share of agrarian sector was 5.7 million rials or 40.4 percentage of total of the first plan It fell to 6.6 percentage in fifth plan.

In 1978 planners, in order to ease the shortage of food supply, increased the share of agrarian sector in the sixth economic development plan.

Table3: Share of Different Sectors in Five Economic Development Plans (1949-1955)

(in percentage)

plans	Agriculture/irrigation	Mining/industry
First Plan	(Million rials)	(Million rials)
1949-1955	5.7 (40.4% of total)	4.1 (29.1% of total)
Second Plan		
1956-52	17.4 (20.9% of total)	7 (8.4% of total)
Third Plan		
1963-1967	47.3 (23.1% of total)	17.1 (8.4% of total)
Fourth Plan		
1968-1972	41.2 (8.1% of total)	113.1 (22.3% of total)
Fifth Plan		
1973-1978	30.9 (6.6% of total)	84 (18% of total)

Source: Bank Morkazi, Annual Reports, 1979

Figure 2: Share of Agrarian from the Total Amount of the five Development Plans

Agriculture/irrigation

Figure 3

Agriculture/irrigation

First Plan
1949-1955

Second Plan
1956-52
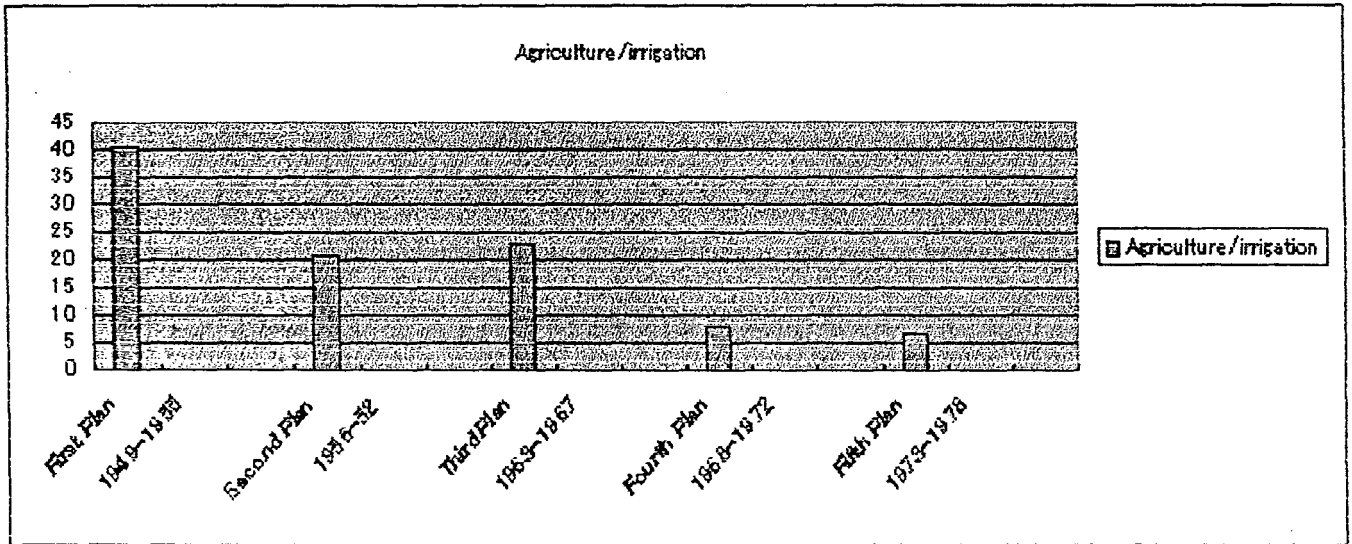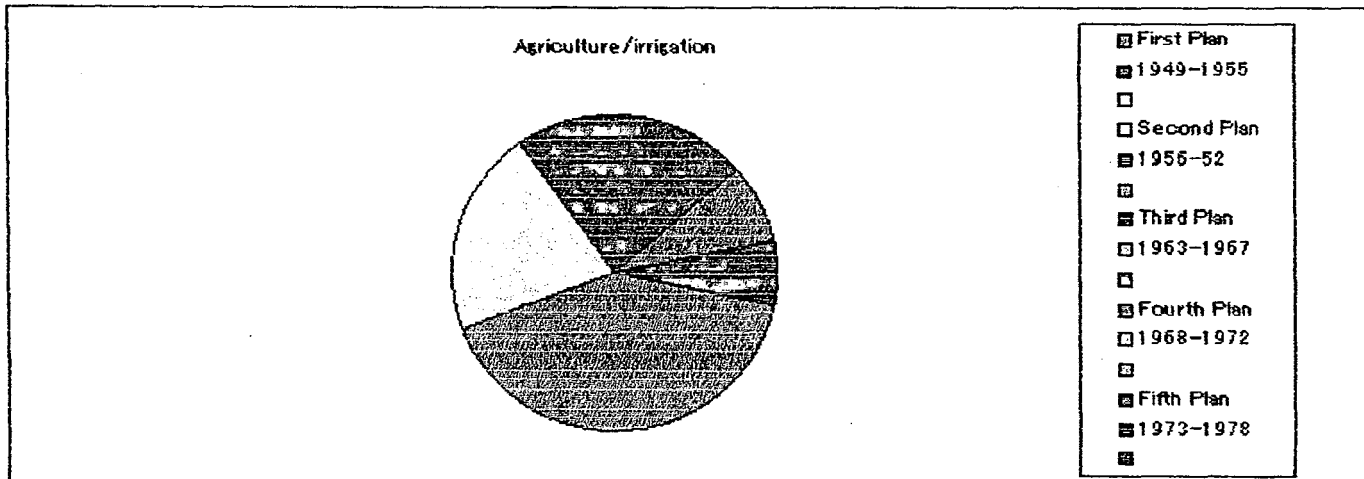
Third Plan
1963-1967

Fourth Plan
1968-1972

Fifth Plan
1973-1978

The strategy that has been implemented in 1960s and 1970s in the Iranian economy has changed the Iran's position from food exporter to food importer. As Table 4 shows Iran in 1959 exported 1170 tons of rice and imported 9851 tons of wheat, while in 1972 Iran had imported 91872 tons of rice and 771323 tons of wheat . Of course it should be noted that the production of the both items has increased during two decades (see the table3).

Table 4: Production, Exports and Imports of Rice and Wheat During 1959and 1972 (in tons)

	Rice (tons)			Wheat (tons)		
Year	Production	Export	Import	Production	Export	Import
1959	540,000	1170	56	2929,000	-	9851
1961	400,000	140	11281	2933675	-	138312
1963	373,973	1770	933	3468140	-	70900
1965	681335	3157	47818	3648713	-	198178
1967	640,000	1369	10187	3,800,000	74463	61805
1959	1350,000	305	5676	4,360,000	611	22639
1972	1008,000	212	91872	4398,000	-	771323

Source: Ministry of Agriculture, Department of National Statistics, World Development, Vol. 4, August - Dec. 1981, Afshare.

As the table shows, reducing finance on agrarian sector caused a fall in production of foodstuffs and consequently, led imbalance between supply and demand of foodstuffs in 1970s.

Finally, Iran imported $10534 million dollar worth of foodstuffs and live animals in 1978(Economic Report, Central Bank of IRI, Table 54, p 200, 1981). In regard of this the questions may arise as to why food production could not meet its demand? Why government could not import more to strike a balance between supply and demand for

foodstuffs? Let us here to discuss the demand for food in the same period to find answer to the first question.

Infrastructural Bottlenecks

If the values of exports in developed countries' rises, it is likely that those countries will not be involved with inflationary process. This is because they have no difficulties in infrastructures and in flow of surplus revenue from abroad to internal economy. They can channelize the surplus to productive sectors and the excess demand can be met with higher supply as a result. In the developing countries like Iran, the scenario is not the same. When Iranian foreign exchange revenue increased during oil boom and excess demand was created by the injection of a considerable part of the revenue into domestic economy, it was necessary to increase supply either by import or by higher domestic production. The major preventing factor to achieving the target was shortage of cement, food, stuffs, and electricity production, for example, Iranian industry was working at almost 60 percent of capacity in May 1977" (Looncy, 1982, p.160). Iran was dependent to import, but the country's exhausted port facilities, slow customers clearance, and the poor transportation system did not allow the government to increase import proportionally. It must be mentioned that in order to expand ports' capacities and improve transportation system, itself Iran needed import as well.

Conclusion

Some economists (mostly who live in the industrial countries) are interested in arguing that the rise of oil prices in the international market was the real cause of inflation in the capitalist advanced countries in the 1970s. However, we have argued that the inflationary process had been already started in those countries and the clime that oil prices as the main cause of inflation in the 1970s is an exaggeration. In this chapter, it has been shown that the inflationary process in Iran began not after the oil boom in 1973 which already started in 1968 when prices rose in industrial countries (including Iran's

trading partners). We have found the following factors behind inflation in Iran during the 1970s:

The main reason for inflation in the 1970s was the rise of the oil revenue and expansion of the budget that created excess demand.

Usually wages in Iran increase after the price increase. When the government increased wages and salaries through budget (or increased money supply) in 1970s after the rate of inflation rose, we could find inflation as an active factor in increasing money supply.

Iran had no difficulty by way of a shortage of foreign exchange (as Structuralists believe for developing countries) in the period under consideration. But when infrastructural bottlenecks prevented the government from importing commodities in order to cover the excess demand, gap between supply aof inflation jumped to two digits.

Chapter 5

Excess Demand: War Economy

CHAPTER 5

Introduction

When Iranian revolution took place in 1979, the economy was in good health with high rate of growth. The big problem of the economy that the Shah regime left to the new regime was its dependence on advanced capitalist countries. In 1978, 50.4 percent of Iran's import consisted of intermediate goods. This dependence caused serious disturbance for the economy in the post-revolutionary period. The main reasons of inflation when the US imposed sanctions against Iran in 1981 was a decline in oil prices in the international market in 1988. This chapter begins with an explanation of economic conditions during the war economy in the period of 1980-88. In the second section is the main one where we will discuss about the "Treasury View" and Keynes' view on budget and inflation. The next section is the war and inflation. Section four discusses about the US sanctions and its effects on inflation. And the section five is about money supply and inflation, and the last section contains the conclusions of the chapter.

Section 1
Economic condition

Iranian economy after enjoying high rate of growth in 1973 and 1974 had fallen in to a critical condition thereafter. GDP, at constant price, fell from Rls 10710.1 billion in 1973 to Rls 10546.9 billion and Rls 9002.3 billion in 1978 and 1979 respectively. In order to cope the slump, the banking policy makers took some decisions. '... In September 1979 the money council reduced the ratio of legal reserve to total of demand deposits, to total time deposits and to total net foreign exchange to 15 percent, 10 percent and 20 percent respectively' (Central Bank of IRI, Economic Reports 1978,p 57). During the five months from September 1978 to February1979, Rls 295.4 billion of private deposits plus Rls 117.1 billion (total Rls 412.5 billion) were added to money circulation (Economic report of Central Bank of IRI, 1979.pp, 57-8). The banking system closed many bank

branches through out the country to prevent bankruptcy. Finally, people had lost their confidence in the system, and it was only after the revolution, when the new regime came to power in February 1979 that private deposits increased. What happened to Iran after the victory of people in February 1979 was similar to what happened to Russian and Cuban revolutions in 1917 and 1959. Immediately after the revolution, the liberal provisional government led by late Mr. Bazargan came to power. He was in office for almost a year, until the time when a radical Muslim group of students occupied the American embassy in Tehran and the government had to resign.

...Most Cabinet members of the provisional government were liberal bourgeois technocrats who believed the economy could be restarted without any need to resort to drastic structural change. They viewed the revolution mainly as a political means of getting rid of the Shah and seemed quite prepared to rely on pre-revolutionary managers and technocrats and the Shah's bureaucratic machinery for the achievement of their economic objectives(Pesaran, 1982. p 514).

The next government led by the first Iranian president Mr. Bani Sadr came to power with massive support from the peoplethrough the public election. The president was a secular person and believed in European socialism. He was ousted by the Majles (Parliament), the supreme court and Ayatollah Khomeini almost a year after he was elected.

After few months of the victory of the Iranian people in 1979 the economy started to improve. The index of industrial production (for large enterprises) which had declined during the revolution by 61 percent, started to increase very rapidly in the last months of 1979. It reached more than twice of its 1978 level in the last quarter of 1979, but the index of total industrial production one year after the revolution was still 87 percent of its level in 1978. In the agrarian sector the situation was different. This sector continued to grow at a rate of 5.9 percent in 1979 and 3.5 percent in 1980 respectively. The reason behind the continued growth of the agrarian sector was the independence of this sector from imports of machinery and technology from abroad, as a result of which the import compression following the oil-price decline left this sector unaffected. From 1981 till 1988, the permanent government was continuously in office and during that entire period Mr. Mir Hossen Mosavi led the government as the Prime minister. During this whole period, the government was engaged in a war that affected the Iranian economy for many

years. In spite of the war, the government had not faced any serious difficulty with foreign exchange reserve till 1986, when oil prices crashed in the international market. The country's oil revenue which was 87.7 percent of total exports, fell sharply from $ 13.968 billion in 1978 to $ 5.982 billion in 1987. GDP at constant prices also fell to Rls 10360.6 billion in 1987 from Rls 13131.4 billion in 1978. Although the Iranian economy was going through a depression as a result of falling oil prices, the rate of growth of the wholesale price index jumped from 7.2 percent in 1986 to 25.1 percent and to 29.7 percent in 1987 and 1988 respectively.

Section 2
Budget and Inflation

The economists who are in the pro-treasury school argue that there is a certain pool of savings in an economy that can be divided into domestic investment and foreign investment and, which the former, into public sector investment and private sector investment. The more domestic investment is made, the less is the quantum of foreign investment and the more public investment is made, the less is the quantum of private sector investment. In such a situation, public investment can never augment the level of total employment, because any increase in employment effected by public sector investment would reduce the share of private sector investment or foreign investment, and thus also total employment in these latter sector of the economy.

Opposite to the ''Treasury View'', an alternative argument is based on ideas of Kahn and Keynes.

"...the treasury view in other words was arguing against proposals for reducing unemployment on the basis of a theory that implicitly assumed that unemployment did not exist at all. In an economy in which there is unemployment, in the sense of resources lying idle owning to lack of aggregate demand, if investment increases then these resources start getting used up directly and indirectly, through various rounds of the 'multiplier'. As a result, income rises and so do savings. Indeed, Kahn showed, the whole process of increase in income and employment would go on and on, until an amount of savings had been generated which exactly equaled the increase in home and foreign investment." Patnaik (2000, p.111)

The central point of the critique of "Treasury View" lies in the fact that total investment determines the total saving, and not vice-versa.

Accordingly, government will find it appropriate to augment the level of total employment in an economy by investment through budget deficit, without any significant inflationary pressure in an economy that is demand-constrained. Further, as Keynes argues, when government expenditure expands through "multiplier", it will raise aggregate demand and output.

Later in 1950s and 1960s the neoclassical monetarist school again propounded "the crowding out of private expenditure" by increasing public expenditure. This school argues that increase in government expenditure, either financed by taxes or by selling government securities, may affect prices, interest level, foreign exchange rate, or all of them, and it may reduce private sector investment as a result. Further, they argue that when budget deficit rises, rate of interest will increase which will result in private sector outing back on its investment proposals. Here we will discuss about government intervention, budget deficit, and the relation between these two in Iran during 1980-1988. One measure of the size of government intervention in an economy is the ratio of government expenditure to GDP. Tabibian, regarding budget deficit and prices in Iranian economy, has mentioned, "....the government budget has affected money supply and liquidities that have a direct role in creation of inflation." (1998, p.21) Regarding the ratio of government expenditure to GDP in the post-revolutionary Iran, Mazarei has found out that "... the ratio of government expenditure to GDP has declined from 42.6% in 1977-78 to 16% in 1988-89. It should be interpreted as an outcome of the decline in oil revenues, and not entirely of deliberate policy" (1996, Mazarei). As Table 1 suggests, the ratio of government expenditure to GDP declined from 34.8% in 1980 to 18.3% in 1989, while it was 48.1% in the year before the revolution i.e. in 1978. In short, the average annual ratios were 49.65% and 27.3% for 1975-1976 and for 1981-89 respectively. The ratio has declined in the post-revolutionary Iran during the period 1981-89, even though the country's oil revenue was high during 1980-1984.

Table 1

Ratios of government Expenditures to GDP (1980-1989)   **(Percentage)**

Year	Ratio of Govt. Expenditure to GDP	Ratio of Current Expenditure to GDP	Ratio of Development Expenditure to GDP	Ratio of Budget Deficit to GDP	Ratio of Deficit to Total Budget
1980	34.8	25.2	10.3	8.6	22.5
1981	36.4	26.7	8.8	15	41.3
1982	36.5	25.7	8.6	12.6	35
1983	32.6	21.8	8.9	7.5	23
1984	30.1	19.5	8.9	8.3	27.5
1985	23.5	17.4	6.2	5	21.4
1986	21.8	16.8	5	4.1	8.8
1987	20.2	15.4	4.8	8.8	43.6
1988	18.9	15.1	3.8	7.4	39.2
1989	18.3	14.7	3.5	9.2	50.2

Sources: Calculated on base of the central bank of IRI, various years

Some economists argue that budget deficit of government was an important source of inflation in Iran during the war. Tabibian (1999), Salehi Esfahani (1999), Yaghoti (1992), and some others believe that budget deficit of the government was one of the main sources of inflation in Iran during the period of 1980-1988. In contrast, Azeemi (1992) and Samimi (1992) and some others do not share the view that government budget deficit was the main reason behind inflation during the war. Azeemi has compared budget during the war with budget in 1970s, and found out that per capita government budget deficit at constant prices, during the war, not only did not increase, but it declined. As he suggests, developing countries, such as Iran, should have a government budget planned for a long term, otherwise, it cannot help the cause of economic development. Samimi, in contrast to monetarists, does not believe that the budget deficit necessarily leads the economy to inflationary process. The significant part of his discussion focuses on budget deficit and inflation during the war. According to his calculation, there is a direct relation between budget deficit and rate of inflation (0.8324) during the period of his study (1980-1991). However, he has explained that the coefficient of correlation cannot determine cause and effect relationship between two variables; it can only show that there is a close relationship between budget deficit and rate of inflation.

In the later years of war the government started to sell foreign exchange in free market in order to cover its expenditure. Samimi pointed out that selling of foreign exchange in free market does not only increase money supply, but also transfers money from private sector to public sector in the short run that it will not be inflationary. We do not agree with his argument, as we have already mentioned in chapter one. The Iranian economy has been depending on dollar, and any change in the value of dollar has a psychological effect on Iranian people on the one hand, and devaluation of rials against dollar will be inflationary given the dependence of the Iranian economy on imports, on the other. Therefore, even if the government is able to reduce its budget deficit through devaluation of rials against dollar, the economy will witness the cost push inflation (we will discuss about cost push inflation in chapter 6).

Furthermore, able 2 has some notable points regarding government budget that we should discuss.

Ratio of government current expenditure to GDP during the period of study has declined from 24.1 percent in 1978 to 14.7 percent in 1988. While the ratio of the development expenditure to GDP declined sharply from 13.3 percent in 1977 and 39.2 percent in 1978 to 3.5 percent in 1988. The table suggests that when oil prices declined in international market and the country's foreign exchange revenue fell, the ratio of development expenditure became smaller (especially after 1995). Usually, when the Iranian government revenue falls, it is easier for the government to cut down the development expenditure than current expenditure which is inflexible (because when the government revenue falls, it is difficult to cut down salary and wages that are the major part of the current expenditure). One variable that remains to be discussed is the ratio of budget deficit to total budget. As is observable from the table, the ratio has an indirect relation with the oil revenue. The budget deficit was not large as long as oil prices were normal and the Iranian government revenue was in a good position. But the ratio jumped from 18.4 percent in 1978 to 39.3 percent and 50.2 percent in 1987 and in 1988 respectively when the Iranian government's foreign exchange revenue fell. When the ratio was 21.4 percent and 18.8 percent in 1984 and in 1985 respectively, the oil prices were normal.

Let us see if there is any possibility of inflation raising budget deficit. In other words can prices be a causal factor and money supply as an effect in the inflationary

process? Suppose we are witnessing an inflationary process. Then the private sector would like to reduce its investment which will cause a fall in GNP, the government revenue from tax revenue will decrease and, and as a result, the budget deficit will rise as a result. In such a case, the government has two options: give in and watch the economy reaching depression, or increase money supply through increasing budget deficit. In an oil economy, such as Iran, analysis should be different. During the war, when prices increased, on the one hand the real government revenue declined and on the other hand, the payment of higher wages and prices by the government, increased money supply. Table 2 shows composition of Iranian export revenue, budget deficit, growth rate of money supply and rate of growth of prices during 1980-1988. The table suggests that there is a relation between rate of inflation, budget deficit and the government loan from the banking system. When rate of inflation is high, real government revenue declines on the one hand, and administrative expenditure (mostly wages and salaries government employees) increases, on the other, and government in order to cover its budget deficit, relies for loans from banks, and money supply increases as a result. Hence we can say that in the war economy period, inflation played the causal role and money supply was the effect.

Table 2: Composition of Iran's Export During 1980-1988 (in billion $, billion Rls, and %)

year	Total export	Oil export	Non-oil export	Govt. loan from bank	Budget deficit	Growth rate of wholesale prices	Growth rate of Money Supply
1980	12.252	11.607	0.645	688.6	-903.1	20	32.3
1981	12.794	12.455	0.339	779	-885.7	30	229
1982	20.334	20.05	0.284	567.2	-649.7	19.1	28.7
1983	20.814	20.457	0.357	695.3	-878	14	11
1984	17.024	16.663	0.361	364.7	-627	7.6	17.8
1985	14.433	13.968	0.465	355	-621.9	7.7	8
1986	6.898	5.982	0.916	1284	-1374.9	7.2	18
1987	10.35	9.189	1.161	1374.7	-1429.8	25.3	16.6
1988	8.635	7.599	1.083	1729.3	-2111.7	29.7	14.4

Source: Economic Report of the Central Bank of IRI Various year

Note: Export is in dollar and the rest is in rial.

Table 2 has some notable points regarding government budget that we will discuss.

As Table 2 suggests, the government's foreign exchange revenue came mostly from oil exports (average annual share being 90 percent).

We have to discuss two important points. The foreign exchange revenue of government was high during the second oil boom. It increased the revenue from $ 12.794 billion in 1981 to $ 20.334 billion and $ 20.814 billion in 1982 and 1983 respectively. If we consider the two tables together (table 2 and 3), we can find that when oil prices are high in the international market and the government revenue is in good position, the budget deficit is small 23 percent in 1983. It increased to 43.6 percent and 50.2 percent in 1986 and in 1988 respectively when oil prices fell to their lowest level after the first oil boom in 1973. The second point is about the relation between oil revenue and the government's loan from the banking system. As the table shows, when oil prices experienced a boom, the percentage of government loans from the banking system was low, and when government's oil revenue was low, as in 1986 and in 1988, the loan from the banking system rose. As is clear from the table, the government loan from the banking system rose from 16.8 percent in 1983 to 40.7 percent in 1987, when oil prices declined in the international market.

Section 3
War and Inflation

Theoretically, we can expect that the economy works below its capacity and it faces difficulties, with shortage of commodity supply in the initial years of revolution, similar to what happened during the war when a considerable part of productive resources were used to produce was materials. During revolutions, transfer of means of production from one class or group to another, clash between the government and the counter-revolutionary elements, added with political instability, reduce investment and output.

"During French revolution, British government created political instability against the revolutionary regime of France and supported counter-revolutionary elements along with other European monarchies. The instability prevented money supply from going to investment and directed it to speculation on the one hand, and the siege made the regime unable to import, for the other. Therefore, the government could not eliminate the

shortage of supply and demand could not match supply and prices increased as a result."
(Ketabi, Ibid, p.105)

The currency school would argue that issuing notes during the war was always inflationary, as Ricardo opposed the adding of 400 million Pound to circulation for the war England fought against Napoleon in 1810 (Taylor, 1991, p.27). But the world's experience is not in consonance with the currency school. During the American civil war, "note issued" had a different face. As Ketabi noted (1994, p.103);

...The Green back note in the American civil war for the North states that could cover their major segment of war expenditure through tax and loans, was useful to lead economy from recession to boom. ...On the contrary, note issue in the South states was used for war expenditure only, hence money supply increased without rising supply of essential commodities and the rate of inflation increased in these states as a result.

In the post-revolutionary Russia, many firms and productive enterprises were closed down and unemployment and inflation rose simultaneously with the big bourgeoisie escaping to abroad. The shortage of primary material, machinery, and fuel all caused the rate of growth to fall. When the revolutionary government came to power in 1918, in order to overcome the shortage of commodity supply, it increased money supply. The level of production increased and the rate of unemployment decreased. When the civil war started in May 1918, the government expenditure for the war increased and the government increased credits in order to cover the expenditure. The volume of money supply in 1918, 1919 and 1920 rose by two times, three times and five times respectively. Finally, the money in circulation that was 80 billion Ruble increased to 1169 billion Ruble in the spring of 1919.

Section 4

Economic sanction against Iran's economy and its effect on Inflation

The trade relation between Iran and the USA can be traced back to the beginning of theⒺlast century, but it became significant only after the CIA-sponsored coup in 1953 against nationalist Prime Minister Mohammad Mossadeq, and afterwards American companies achieved 40 percent share in Iranian oil production. The peak of economic relation between Iran and the USA is the period of 1972-78.

... In 1978, the United States became Iran's second largest supplier of non-military goods (after West Germany), exporting $12.7 billion worth of such goods. During the same year, Iran's military purchases from the United States reached $12 billion. Total capital exposure by the US banks in Iran rose to $2.2 billion by 1979, while direct investment by about 500 US companies amounted to a total of $6.82 billion. The number of American citizens working in Iran reached 50,000. In the same period (1972-1978), the United States became a major customer of Iranian oil, by up to 15.9 percent of Iranian produced oil, which was equivalent to 5.6 percent of the United States total supply of oil (Fatemi 980 p.211).

On November 4, 1979 when a group of Iranian students occupied the American embassy in Tehran to protest against the Iranian Shah being allowed to stay in the USA, President Carter placed a trade embargo on Iran as a reaction to the fifty-eight American hostages taken by the students. The sanctions were further expanded in 1984. The range of the sanctions covered imported commodities, like war weapons, food stuffs, and intermediate goods for industrial sector production. Iran has been isolated after the sanctions and it had to pay several times the original price for providing for its needs, buying from the unofficial international market. We can consider these sanctions as a factor that caused an imported inflationary process during the war economy.

Section 5
Money Supply in the War Economy and Inflation

we have already explained in chapter 2, the new government in 1979 rejected "open market operation" instruments, except "legal reserve", as usurious instruments. Even this instrument could not work properly because there was an illegal financial market, on the one hand and banking system had credit surplus on the other. The government, in order to achieve economic self-reliance, let credit policy turn in favor of productive sectors. The credit shares of agricultural and industrial sectors were increased. For two reasons, the reality was different from what the Money and Credit Council had planned. First, the banking system did not follow the inter-sectoral credit share approved by the Council and as a result credit flowed to unproductive sectors. Secondly, high profitability of private service sector prevented the productive sectors to become attractive for investment.

Although money supply increased from Rls 790.5 billion in 1978 to Rls 7758.1 billion in 1988 (9.8 times). Economic slump after the revolution, especially after 1983, kept down the velocity of circulation of money, which fell from 6.56 percent in 1978 to 2.969 percent in 1988, and as a result, aggregate demand did not rise in accordance with the level of money supply. Finally material cost push inflation, on the one hand, and excess demand on the other, caused the average annual rate of inflation to increase by 17.7 percent during the war economy.

Section 6
Conclusion

events, revolution, war and students' occupation of U.S embassy, affected Iranian economy not only during the period of our study, 1980-1988, but also for many decades to come. In the first section we found that the provisional government did well to improve the economy, and to bring under control the rate of inflation. The main section of this chapter was the second one in which we paid attention to the budget and the role of it in inflationary process. We have discussed the "Treasury View" that divided economy into domestic investment and foreign investment or public sector and private sector. According to this view, if you use more resources for public sector, then less will be available for private sector. In other words public investment can not but squeeze the private sector. We referred to Keynes' and Kahn's idea, and argued that when an economy is working under conditions of less than full-employment, public investment through budget deficit can improve both the size of public sector and private sector without leading the economy in to inflationary process.

Regarding Iran's economy during (war economy) 1980-1988, we found out the following results;

1. The economy was in a good situation when oil revenue was high during 1980-1984, the rate of inflation was low. When oil prices fell in 1986 the economy faced serious difficulties, and in consequence, its imports declined and domestic production decreased, the rate of inflation increased on the one hand, and on the other hand, the government expenditure increased and money supply rose as a result of it. Therefore

we came to the conclusion that inflation might have been the causal factor, increasing money supply when it rises.

2. We also argued that Increasing of the government budget during the war created the demand pull inflation which supply could not match itself with demand on the one hand and instability of the government to sufficient imports on the other hand.

Chapter 6

Liberalization, Devaluation and Cost-push Inflation

Chapter 6

Introduction:

After suppressing all the anti-IRI groups in 1983, the followers of Ayatollah Khomeini have been divided into three fractions; radical, mercantilist bourgeoisie, the industrial bourgeoisie. Conflict among the three groups had continued till the end of Iran-Iraq war in 1988. Finally, alliance of two bourgeoisies kept the radical group away from power. Conflict within the IRI between the two groups of bourgeoisies resumed during liberalization. The government's serious attempt to implement unification of foreign exchange rate was against the interests of the merchant bourgeoisie, which was having access to the subsidized exchange rates through the semi-government foundations and private license holders under multi-rate exchange regime. The policy was in favor of the industrial bourgeoisie who could subsidize their export when the devaluation of rial took place. The following chapter is divided into two parts; stagflation and cost-push inflation. In the first part, we mainly consider how stagflation happened in Iran. The second part is related to devaluation that would create cost-push inflation.

Part One: Stagflation

A.W. Phillips in 1958 with his statistical observations of UK economy for the period of 1861-1957 argued that there is an inverse relationship between rate of change of money wage rates and unemployment rate. Of course we have to note that when rate of unemployment is low we should expect wages to increase rapidly but when the rate is high we expect that wage rates should increase very slowly. Later Phillips' idea was developed by Samuelson and Solow. Their contribution related prices to money wages as a major cost component and they used the Phillips's idea to explain wage inflation and then used wage inflation to determine price inflation in another equation. In the literature review we term the former as Phillips curve and the latter as quasi-Phillips curve. Since the early 1960s, Phillips curve and quasi-Phillips curve have become part of the

conventional wisdom in macroeconomics. The fundamental point remains that Phillips emphasized money wages and not real wages. As is clear, Phillips' approach is Keynesian and is opposed to monetarists' view, it is interesting to look at their critique of the curve.

**Monetarists View on the Phillips' curve and Stagflation**

Critics (notably Friedman 1968) would argue that there is no long-run relationship between the rate of inflation and unemployment and there is no theoretical basis for Phillips curve or quasi-Phillips curve either.

Monetarists believe that a capitalist economy through the working of the unperfected market mechanism turns to settle at a "natural rate of unemployment" which is *de facto* full employment (i.e. precludes involuntary unemployment). Any permanent reduction in the observed unemployment rate can be achieved only by lowering the NRU itself which requires better dissemination of information. Of course if the market is not allowed to function freely, the NRU itself may not be achieved; but the solution here is to make the markets function freely for e.g. by making wages flexible. But if the government tries to reduce the observed unemployment rate not by lowering the NRU (or making it effective by removing restrictions on the functioning of the market), but by demand-side policies that push unemployment below the NRU, the result will be acceleration inflation, which in terms can be sustained only by increasing growth-rate in money supply. It focus on the monetarist argument that to prevent accelerating inflation and yet to reduce the observed unemployment rate, what is needed is a combination of policies which include control over the growth-rate of money supply and supply-side measures relating to the labor market, such as flexible wages and better dissemination of information.

Keynesian View

Taghavi (1996 and 1997) provides a useful discussion on stagflation which appeared in a pronounced form in the 1970s and the early 1980s in industrial countries. The author's discussion starts off from the late 1960s and the early 1970s, in that period many

advanced capitalist countries had difficulties, such as unrest of laborers, which were worsen by the oil supply shock in 1973. These countries experienced double-digit rates of inflation for the first time. They chose contractionary fiscal and monetary policies in order to cope with inflation, and this led their economies to stagflation. The following analysis elucidates the Keynesian point of view on the Phillips' curve and stagflation. Assume that the point "a" on the first curve I, rate of unemployment, U1, and rate of inflation P1, are on optimum point for policy makers. As a result of cost-push inflation, the Phillips curve I moves to curve II, and the economy settles on some point "b", which is associate with stagflation. Government can reduce the rate of unemployment to primary level, U1, with expanding aggregate demand, but with higher price level, P3.

Graph 1
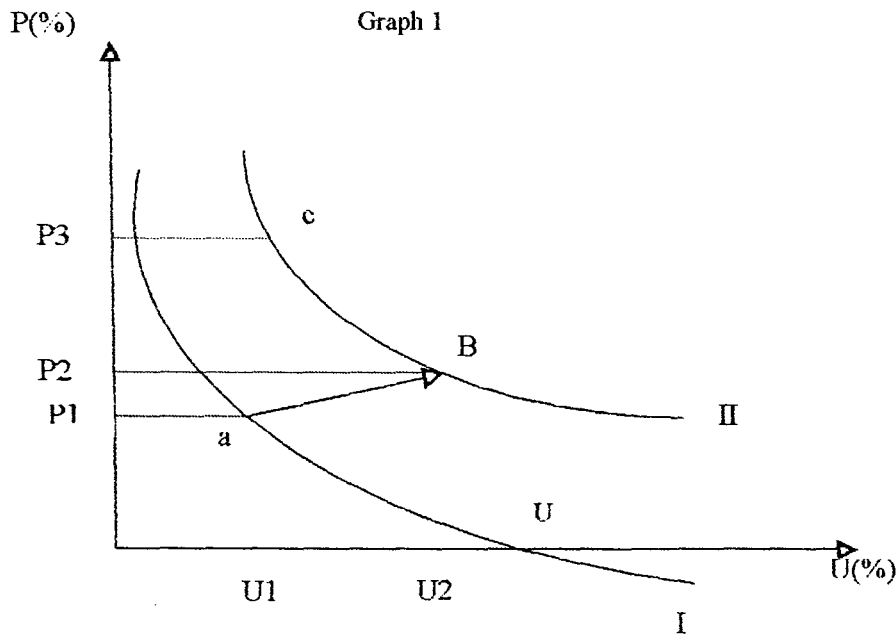
Stagflation in the Advanced Capitalist Countries and Iran
Stagflation in the Advanced Capitalist Countries

There was an important analysis of the stagflation phenomenon when oil prices rose in the world market in 1973 and 1980, and the advanced capitalist countries faced energy crisis.

Beckerman and Jenkison's (1986) discusses the effects of the second oil shock in 1980 in industrialized countries. The main objective of the paper is to explain the reason behind the deceleration of inflation in industrialized countries during 1980-1982. The authors made an estimate to ascertain the relative role of import prices and unemployment in determining the rate of growth of money wages for individual countries. The variables they considered for their estimate are the following:

W= hourly earning in manufacturing;

P = domestic price index;

U= percentage of labor force unemployed

Z= normalized out-put per man-hour;

M= unit values of imports;

C= constant unit mark up over costs.

The estimate covered twelve industrialized countries and they ended up with the following conclusions:

1. There is no identifiable relationship between aggregate unemployment and wage inflation in most individual industrialized countries. The estimate shows there is close correlation between wage inflation and import prices.

2. Some industrialized countries with tight fiscal and monetary policy (with appreciated domestic currency) could get rid of unemployment. They also suggested that this policy should not be followed by all, otherwise the appreciation of domestic currency will offset the rise in commodity prices in foreign currency terms.

Martin (1992) argues that there are two possibilities regarding cause and effect relationship between oil shocks and stagflation. First, when oil prices rise in the international market we expect the profitability of the energy using industries (forming a significant part of the economy in these countries) to come down. Here if wages are not flexible we should expect unemployment to rise even as there is some increase in prices in reaction to the rise in oil prices. Second, demand elasticity of oil prices is low in the advanced capitalist countries. Therefore if oil prices rise those countries have to pay more for imports, in other words they should export more and consume less in order to cover their import expenditure. In this case if trade unions insist to protect their real

consumption and being to anticipate inflation, then the inflation rate will accelerate; to prevent this, unemployment will go up.

Stagflation in Iranian Economy

The following analysis focuses on decline of oil prices in international market and creation of stagflation in the Iranian economy. When oil prices rise in international market, the Iranian government's revenue increases balance of payment improves, import increases, production goes up and rates of unemployment and inflation are expected to come down as a result. When oil revenue comes down (either due to fall in prices in the international market or due to reduced export) government foreign exchange revenue shrinks and imports fall and the economy faces shortage of intermediate goods and machinery, which the manufacturing sector needs. Hence on the one hand, the rate of unemployment rises on the other, and prices rise in reaction to the decline of aggregate supply .

The Iranian economy enjoyed a high rate of growth and low rate of inflation and unemployment throughout the 1960s and in the first half of the 1970s. Till 1986, Iranian economists believed that stagflation is a phenomenon which will affect the advanced capitalist countries only. But when oil prices fell sharply in the world market the country experienced the first stagflation in 1987-88.

Table 1: Oil Revenue, Import, Real GDP and Inflation in selected year.

(in $ billion and percentage)

Year	Oil revenue	Import	Real GDP	Inflation
1973	5.6		16.4	4.8
1974	20.515		9.2	13.8
1975	19.099		10.5	17.6
1982	12.455	13.515	2.4	19.4
1983	20.049	11.845	15.1	13.8
1984	20.456	18.103	10.8	7.8
1986	13.968	14.494	0	7.1
1987	5.982	11.408	-1.8	25.2
1988	9.892	9.369	1.6	29.7
1993	14.333	29.87	5.3	22.9
1994	14.603	19.287	3.3	35.2
1995	15.103	12.617	-1.2	49.4

Sources: Central Bank of IRI, various years, 2001.

Table 1 provides information about the Iranian economy for selected years since 1973. The second column of the table shows oil revenue in dollar terms and the next column shows the imports of the country in dollar terms. The third and the fourth columns show rate of GDP and rate of inflation (wholesale prices). The table is divided in to four stages, the first and second relate to the first and the second oil booms respectively. The next two stages relate to the two oil price crashes. As is clear from the table, in the first two stages when oil prices increase, the Iranian imports increased which had a positive effect on the economy. Further, as is observable from the table, the rate of GDP growth rose and inflation rate fell. In this period the advanced capitalist countries were facing stagflation. In contrast, in the next two stages, when oil prices fell, imports got squeezed, the rate of GDP growth declined, and unemployment rate and inflation rate increased simultaneously as a result. Oil prices declined in the international market in 1986 and Iranian oil revenue decreased from $ billion 20.456 in 1984 to $ billion 13.968 in 1986 and to $ billion 5.9823 in 1987. With falling oil prices, imports declined and rate of growth of GDP fell from 10.8 percent in 1984 to 0 and -1.8 percent in 1986 and 1987, respectively. The rate of unemployment increased, while at the same time, the rate of

inflation rose from 7.8 percent in 1984 to 25.2 percent in 1987 (see Table 1). The second period of stagflation in Iran's economy started in 1994 when oil revenues were lower, in comparison to first and second stages. As the table suggests, imports got squeezed form $ billion 19.287 in 1994 to $ billion 12.617 in 1995, and rate of GDP growth fell from 3.3 percent to -1.2 percent while the rate of inflation increased sharply to 36.2 percent from 49.4 percent during the same period . It needs to be explained as to why imports declined sharply in 1995 while oil revenue was not too low. As we have already mentioned, when the liberalization era started in 1989, the Iranian government borrowed from international financial sources about $40 billions as loans, and in 1995 a part of the country's oil revenue was paid to the international banks as repayment of the principal and as payment of interest on these loans.

Summary

In the theoretical part we discussed Monetarists' viewpoint, which suggests that the government intervention and inflexibility of wages were sources of stagflation that appeared in the 1970s and 1980s among the advanced capitalist countries. On contrary, Keynesians argued that the increase in money supply were not the reason for stagflation in the 1970s; rising prices of materials including oil prices were responsible for stagflation. We also found that stagflation could appear in oil exporting countries also as seen in 1986 and 1994, as oil prices fell in the international market.

Part 2
Devaluation and Cost-push Inflation

There seems to be a consensus among Iranian economists that Iran never had cost push inflationary experience till the beginning of the liberalization in 1989. Their argument is that Iran has not been having independent trade unions either in the pre- or in the post- revolution period. As we saw in the previous chapter, wages always rise after prices rise in Iran. In the following analysis, we are going to argue that devaluation of rial and unification of foreign exchange rates that was started by government in 1989, were originally responsible for increasing rate of inflation which reached 49.4 percent in

1995. Because devaluation of rial made the expensive imported inputs for industrial sector, mostly modern industries, on the one hand, and dollarization of the Iranian economy caused increase in wages in non-trade sector also.

Theoretically, these are two major approaches towards devaluation. The first stems from the World Bank-IMF approach and the second one that we would like to call non-World Bank-IMF approach. In this regard, we first briefly discuss the two approaches on devaluation and its effect on prices in developing countries and in the second part we will consider the Iranian experience of devaluation.

Theoretical Approach

Neoclassical as well as Monetarists argue that true prices can be expected to prevail only in an open economy that is based on a "floating" exchange-rate system. The mainstream economists argue, in favor of World Bank-IMF prescription, that when true prices are formed in an economy, resource allocation would be optimized and this will increase productivity and profitability. Under these circumstances economy grows well and the level of production and employment increases. In this regard the World Bank-IMF approach suggests that devaluation of local currency is a must.⌐The argument for devaluation is based on the premise that the BOP deficit in developing countries originates from over-valuation of their currencies. To achieve balance of payment equilibrium, therefore, devaluation must take place in these countries; indeed the proponents of this view go to the extent of advocating "floating" exchange rates, which, they argue, should replace dual exchange markets. With regard to rate of inflation, this approach argues that multiple foreign exchange system reduces motivation for investment in economy, and it decreases aggregate supply and causes increase in prices.

Pesaran (1992) argues that if Iran devalues its currency, import subsidy will vanish and budget deficit will decline which might bring down the rate of inflation. Kirmaro (1988) studied effectiveness of "floating" foreign exchange rate for some developing countries and he found that all of these countries, prior to adopting the "floating" rate system, had difficulty in managing budget deficit and balance of payments. In these countries, a neglected foreign exchange policy and price control policy created

distortions in relative price system which caused the level of production to fall and discouraged investment and export. The author divided the countries under study into two categories those countries who chose a contractionary policy and could control wages and price in the non-traded commodities sector were relatively more successful than those countries having huge budget deficit who could not implement the anti-inflationary policy at the right time. An important point in Kirmaro's study is his emphasis on government's role in controlling inflation during implementation of "floating" exchange rate policy. Finally, he suggests, "floating exchange" rate is appropriate for both developed as well as for developing countries".

In contrast, the second approach does not consider devaluation of currency as an appropriate policy for developing countries. This suggests that in a floating exchange rate system, foreign exchange will tend to flow out of the sphere of production in developing countries, for speculative purposes. Patnaik (1991) argued that under floating exchange rate regime, the emergence of speculative behavior will destabilize the economy. This can happen for several reasons.

Firstly, foreign exchange is a commodity, the carrying costs of which are virtually zero, in contrast to other commodities which are bulky and perishable, and the elasticity of speculative stocks is high. Secondly, the elasticity of price expectations of foreign exchange in the developing countries is high because there is no ceiling for it in the local market and there is no guarantee of a "normal price". Thirdly, even if there is a flow of excess supply of foreign exchange due to trade (i.e. X-M is positive) this may well get offset by a stock excess demand for foreign exchange for asset holding as a part of portfolio choice, and in such a case there could be accumulative downward movement of the exchange rate owing to speculation. The net effect would be adverse as far as production is concerned.

Finally, even if with a fall in the national currency against the foreign currency as a result of devaluation there is an increase in domestic production and exports, this can only be temporary since the rise in import prices, once it is "passed on", will soon nullify any effective devaluation (unless there is a permanent decline in real wage-share) for countries that have imports of essential inputs, such as oil, which cannot be replaced by domestic production. Iran, even though an oil producer, falls into this category. We

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have already seen that for one dollar of exports, Iranian industry needs 50 cents of import. Patnaik (1991, p2258) also argued that for two important reasons floating exchange rates may not be destabilizing for advanced countries. First, in advanced countries a large number of people hold each other's currencies or currency denominated assets. If a steady devaluation affects these currencies belonging to other countries then a lot of wealth holders will incur losses; therefore the central banks of these other countries, not just of the country concerned, will be under pressure to stabilize the foreign exchange market. Secondly, in the international market, demand is sensitive to price changes because advanced economies more or less trade in similar commodities. These countries lose if the currencies of their rivals are depreciated continuously; therefore for all of the advanced countries it will be useful if there is a relative stability of rival currencies.

Effect of Devaluation on Prices: Iranian Experience

As we have already discussed, the weak inter-industry linkages in the Iranian economy make the industrial sector dependent on imported intermediate and capital goods. The Iranian modern industries have been established primarily by multinational companies in the early 1960s and in the 1970s. According to Behdad's calculation (1988, p.10):

Each 100 rials of the non-oil gross domestic product (GDP) produced between 1963 and 1976 required, on the average, 4.6 rials of imported capital and 10.4 rials of imported primary and intermediate inputs. This figures increased, respectively, to 25.5 rials and 13.3 rials in 1968-1972, and 28.4 rials and 16.8 rials in 1973-1977. Taking into account the fact that the largest share of these imports (about 80 percent of the primary and intermediate inputs) was used by the industrial sector (no more than 30 percent of non-oil GDP), the import dependence of Iranian industries becomes even more evident.

It seems that this dependency has not declined after the revolution, especially when the link between Iranian economy and international companies was resumed again in the liberalization era since 1989. In other words, Iranian economy has been dollarized and any change in dollar value will affect general prices directly.

Pesaran (1992) and Lautenschlager (1986) believe that the Iranian economic problems in general, and inflation in particular, have their roots in an overvalued rial. Jalali- Naini articles in Nili, M.(ed.)(1998) and in Tabibian(ed.) (1999) has discussed about inflation and was opposed to the multiple exchange rate system that was implemented during the war economy. He found that "floating" foreign exchange rate policy, in order to bring down the rate of inflation, must be accompanied by a control over government budget deficit. According to these authors, devaluation of rial and unification of foreign exchange rate should form the core of the policy in order to improve the balance of payment deficit and to reduce the rate of inflation.

Development economists used to categorize oil exporting countries separately from other developing countries. The major foreign exchange revenue of these countries (mainly the Middle East oil exporting countries) come from oil exports the prices of which are determined in the international market; therefore devaluation of rial theoretically is not applicable for the Iranian economy, a fact borne out by empirical evidence..

In the Iranian case, as we have found in chapter one, in the past four decades 90 percent of average annual Iranian foreign exchange revenue came from oil exports, with a foreign demand for oil that is inelastic. Also the dependency of Iranian industries (especially the large manufacturing enterprises that produced almost 80 percent of total output of the industrial sector) on advanced capitalist countries makes the country's demand for imported inputs inelastic. As Behdad noted:

> The IRI has few options to reduce its widening foreign exchange gap. A general devaluation, as attractive as it appears in the text book model of exchange rate determination, is not an effective instrument in the case of an oil-exporting country with a heavily import-dependent industrial sector.
> Devaluation will do little to increase foreign currency earnings, given the very small share of the non-oil export in the exchange earnings of the country. The potential of the non-oil export is limited by the internal structural constraints and trade barriers in the export market. (1988, pp.15-16)

A Model of Devaluation for the Iranian Economy:

A serious debate arose among Iranian economists in the post-revolutionary period on the effects of devaluation on the economy. We are going to introduce a model which shows that devaluation of rial has little effect to increase Iranian export.

$P_m = [w.\ell + m. \bar{p}. e] (1+\pi)$

Where;

w = money wage rate

P_m = price of manufactured goods

m = amount of imported input per unit of manufactured output

ℓ = labor input per unit of manufactured output

$\bar{p}$ = dollar price of imported input

e = price of dollar in term of local currency
π = profit margin

Let us assume that the Iranian government implements devaluation of rial in order to improve its export. In this case, when "e" rises, suppose everything else will remain unchanged. P_m will increase, but the amount of increase will be less than that of "e". In such a situation, workers become worse off. Since "w" is fixed, they demand higher wages, and P_m will rise in the future. If real wages are not to fall at all, we should expect P_m eventually to rise by a proportion equal to that of "e". Therefore, devaluation of rial in this condition does not affect improvement of export, since a nominal devaluation does not lead to a real-effective devaluation.

Pesaran (1994) argued that Iran's non-oil export has increased from less than $1 billion in 1989 to $3.185 billion in 1998 under devaluation policy. Hence, he concluded that the policy was successful. But the above claim needs to be interpreted. First, a significant part of non-oil export during the period under consideration was Iranian traditional export, while, according to the promise of policy makers, devaluation should have increased the export of manufactured commodities. Second, the value of rial declined dramatically during the period of 1989-1998, from $1= 70 rials to $1= 1750 rials (25 times decline in official rate) which has declined more in black market, $1= 8500 rials (around 121 times decline). And that encouraged Iranian exporters to export

their commodities. Indeed, Iran paid a heavy price to increase its export, and there is little evidence that its gain was more than its cost.

Empirical Approach

Iran did not have an illegal market (black market) for exchanging foreign currency till the time revolution (in 1979). There was an official foreign exchange rate for all who were willing to exchange. In the post- revolution period, demand for foreign exchange, mostly by dependent bourgeoisie, increased mainly on account of capital flight. Therefore, since the victory of revolution, demand for foreign exchange has been high and the government has been controlling the foreign exchange rate by instituting a rationing system in order to regulate capital flight. As Ghaderi (1998) noted, there were two official foreign exchange rates till 1988. One was put at $1=70 rials, which was for importing essential commodities to distribute them among people at low prices to keep the rate of inflation down, and another official rate was put at $1=1100 rials for the import of certain essential goods by private sector. The rate of dollar in black market increased to about $1=150 rials in 1981, 250 rials in 1982, 350 rials in 1983, and 550 rials in 1984. The gap between official and the black market foreign exchange rates increased to 500-600 percent by mid 1980s, and the gap became even wider when oil prices fell down sharply in the international market in 1986. Finally, the gap between the two foreign exchange rates increased by over 2000 percent by 1989. It is interesting to note that beside the two official rates, there were more than 10 different foreign exchange rates for import during the war economy. When a new government came to power in 1989, liberalization began and foreign exchange rates were clubbed together and divided into three rates; the official rate of $1=70 rials which is used for transaction of public sector, "competitive" rate for import of certain essential goods by private sectors, and "floating" (mostly used by central bank) rate for other approved private sector imports. The new government could eliminate some obstacles to free market; privatized some public enterprises, could control prices and subsidies, and foreign exchange transaction in the black market. Even in April 1993, when the country's balance of payments worsened markedly and clear evidence of the government's difficulties with external debt repayments was seen, the Iranian Central Bank announced that from then onwards all

private and public foreign currency exchange was to be conducted at a "floating" rate according to daily price that was determined on the basis of market conditions of supply and demand. A few months later, in October, with low oil revenue of the country ($12.9441 billion against $16.6147 billion in 1990), increased deficit on balance of payment account, coupled with the inability of the government to repay the debt of around $40 billion, the gap between the "floating" rate and the black market rate increased and the rate of inflation rose. The rate of inflation reached 50 percent in 1994, and protests against the new policies of the government arose in working class neighborhoods. Later, mass demonstration took place in five big cities and the government was consequently forced to stop liberalization, and the policy makers brought back some of the war economy regulations, like subsidized essential commodities, followed by multiple foreign exchange rates, price control policy, etc.

Since 1995, when the government's economic policy was changed in favor of war economy, which has been implemented in the 1980s, the government pegged exchange rate, restrictions trade, price control policy, and control of foreign exchange rate. In regard to the high rate of inflation, Iranian policy makers have focused more on control of inflation than on any other economic problem. We have already mentioned that the dependence of the Iranian economy on petrodollars causes unstable economic conditions in Iran, because any fluctuations in oil prices in the international market affect the entire Iranian economy, especially in the modern production sector, and rate of inflation. Hence, the economic policy makers made substantial withdrawals from foreign exchange reserves in order to eliminate any negative effect of oil price falling on the Iranian economy. They had two main targets in their minds; provide foreign exchange reserves to import essential commodities, raw materials, and equipment for manufacturing industries in case of oil price decreases in the world market. The second target was to control money supply, because they believed that inflation was a monetary phenomenon.

It is necessary to discuss the policy of keeping inactive a significant part of foreign exchange revenues as an anti-inflationary measure by the Iranian Central Bank. In the 1970s, when the Shah's regime withdrew foreign exchange reserves and didn't let

it influence the money base, it either invested outside of Iran or put it in the Western banks. Iran had infrastructure bottlenecks on the one hand, and an economy working to almost full capacity, on the other hand. In 1995, however, the economic situation was totally different. Production sector was working below capacity, the rate of unemployment was high and infrastructure had been improved much in comparison to 1970s. Therefore, it was better for government to use this foreign exchange revenue either for import of inputs for manufacturing sector in order to make the sector work to its full capacity, or import capital goods for investment. Both these scenarios could increase output which was expected to lower the rate of inflation. We will discuss the anti-inflationary measure adopted by the Iranian policy makers in the next chapter.

Table number 2 provides oil revenue, import, money supply, growth rate of GDP, and the rate of inflation for the period of 1989-98.The new economic policy was able to lower the rate of inflation sharply from 49.4 percent in 1995 to 23.2 percent in 1996, and inflation continued to decline to rates that would be considered moderate in the following years. (See table 2).

Table 2: Oil revenue, import, and rate of growth money supply, Nominal GDP, real GDP, and inflation during (1989-1998).

(in Billion and parentage)

Year	Oil revenue	Import	Money supply	GDP	Real GDP	Inflation
1989	11,993.20	12,807	16	13	4	7
1990	16,700.90	16,382	24.8	24.2	11.5	23.9
1991	14,072.20	25,552	21.8	32.3	10.12	20.4
1992	16,880	23,274	20	36.1	6	24.4
1993	14,333	19,282	36.9	32.3	3.3	22.9
1994	14,603	12,617	35.8	45.2	3.1	35.2
1995	15,103	12,774	34.6	38.5	5.8	49.4
1996	19,271	14,989	37.3	43.2	3.4	23.2
1997	15,471	14,123	12.5		2.1	17.3
1998	9933	14,288	18.1		2.4	20

**Sources: Iran' Budget and planning organization, 2001.**

Note: Oil revenue and import are in billion and the rest are in percentage.

Monetarists' explains that the decline of money supply growth was the primary reason for the falling rate of inflation. However, data do not support the interpretation of falling inflation after 1995. Table 2 shows the changing of money supply, quasi-money, and public and private sector credits during 1994-1998. The forth column of the table provides data on money supply (M1) whose growth rate increased from 34.6 percent in 1995 to 37.3 percent in 1996. The table also shows liquidity M2 =(M1 + quasi-money) in the third row increased from 28.5 percent in 1995 to 37.6 percent and 37 percent in 1996 and 1997 respectively, but it declined to 15.2 percent in 1998. The next two rows also provide data about private sector credit and pubic sector credit, which shows that credit growth for private sector not only stopped declining, but even increased from 23.4 percent in 1995 to 29.7 percent in 1998, while the public sector credit growth fell from 27.6 percent in 1995 to 11.06 percent and 13.4 percent in 1996 and in 1997 respectively. Then, it reached 26.2 percent in 1998. Thus, we can safely come to the conclusion that falling inflation after 1995 was not largely because of similar strict control over money supply. However, controlling of prices, resuming subsidy on essential commodities, and improving the government oil revenue from $15.103 billion in 1995 to $19.271 billion in 1996 played on important role in cutting down the rate of inflation in the second half of the 1990s. Another important point that we have to look at is the negative effect of decreasing of money supply growth on output and rate of employment. As is clear from the table 2and 3, growth rate of money supply increased from 16 percent in 1989 to 34.6 percent in 1995, and it declined to 18.1 percent in 1998, while rate of real GDP fell from 5.6 percent in 1995 to 2.6 percent in 1998.And the rate of unemployment increased from 9.1 percent the same period.

Table 3: Rate of growth of money supply, unemployment and

inflation during (1991-1998)   (in percentage)

Year	Money Supply	Unemployment	Inflation
1991	21.8	11	20.6
1992	20	10.7	24.4
1993	36.9	10.3	22.9
1994	35.8	9.8	35.2
1995	34.6	9.4	49.4
1996	37.3	9.1	23.2
1997	12.5	11.9	17.3
1998	18.1	13.6	20
1999	16	15	20.4

Source: Budget and Planning Organization, 2001.

Graph 1: Growth rate of realGDP, unemployment, and inflation
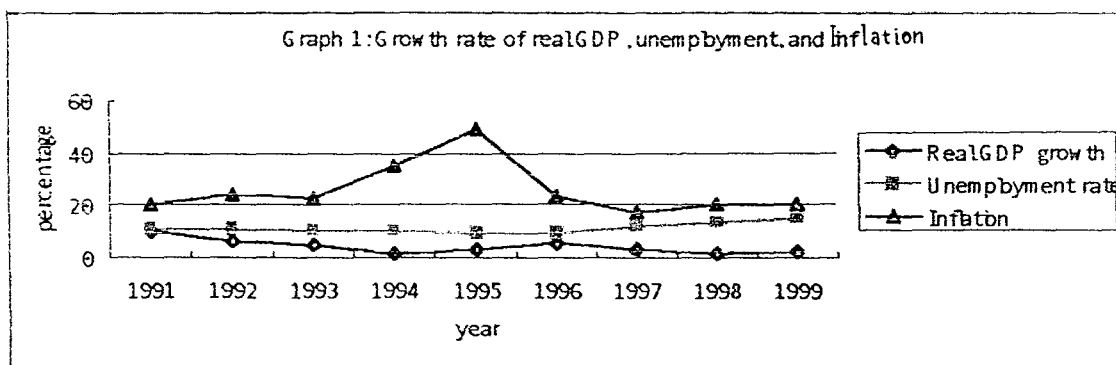
In addition we can say that the government was successful in controlling the growth rate of inflation in the second half of the 1990s and this was accompanied by a dramatic fall in the rate of economic growth from 8.1 percent in 1989-1995 to 2.8 percent in 1996-1998.

Concluding Remarks

This chapter has started off discussing stagflation which was dealt in detail, both theoretically and empirically.   Monetarists believe that intervention of government through expansionary policy in order to lower the observed rate of unemployment is the original reason for the stagflation phenomenon, while the Keynesian explanation focusses

on cost push inflation. In empirical analysis, we found that when oil prices would be falling, Iran would be involved with stagflation, because the Iranian foreign exchange earning gets squeezed and imports decrease in such a case. This will affect the modern industrial sector output which largely depends on imported inputs. In consequence, the economy will experience unemployment and high rate of inflation simultaneously. The second part dealt with devaluation and cost push inflation. In the first section, we have discussed the devaluation of currency in developing countries and came to the conclusion that this policy facilitated the use of foreign exchange for speculative activities. We have also seen there were two reasons why the devaluation policy was not applicable to the Iranian economy;

i)   The dependence of almost 90 % of the Iran's export on oil (the volume of Iran's exports of oil is determined by two factors, the OPEC quota and international market considerations, and not by the rial cost of production of oil). It entails that a devaluation would have little effect on exports.

ii)   Its dependence on the import of intermediate and capital goods makes the country's demand for imported inputs inelastic. Thus, traditionally, devaluation in Iran has not only been unable to improve the foreign exchange reserve significantly, but also causes cost push inflation as well.

The period of the study, 1989-98, when the liberalization took place and devaluation of the Iranian currency was implemented, was divided into two sections. In the section one, we have discussed about devaluation which was the core of liberalization, and the reasons of its failure. The empirical section which also covered 1989-1998, has been divided into two different periods; 1989 to 1995, and the rest of the period. In the first period, we found that devaluation and unification of foreign exchange rate was the basic reason for the dramatically rising rate of inflation and in the second period we argued that the government could lower the inflation rate, but only by increasing the rate of unemployment.

Chapter 7

Anti-inflation Policy

Chapter 7

Introduction

There is a conspicuous dispute among economists about anti-inflation policy, in line with their differences are the cause of inflation. Monetarists' anti-inflation policy, which follows from their inflation theory, is very simple. If the government acquire resources through taxes and borrowing from people, that there is no need to enlarge the money stock, and hence no reason for inflation. The solution to inflation therefore line in reducing the money stock by curbing government borrowing. The Structuralists' theory on the other hand of anti-inflation does not focus on reducing money stock. The main measure they emphasize is fiscal policy although they keep the door open for monetary policy. We have already noted in chapter 5 and 6 that when the governments reduced money stock as an anti-inflation policy the economy experience stagflation. As we have found that inflation in Iran was not caused by any monetary phenomenon, we must search for the solution of price rise in the Iranian economy outside the monetary policy. The following chapter which deals with anti-inflation policy has two parts. In the first part, our focus will be on anti-inflation policy in the long run, and the second part discusses the policy in the short run. The end will be conclusion. It should be noted that the policy we are going to suggest is regarding to cost push inflation and demand constraint that it arose after the government anti-inflation policy in 1995.

Different Approach on Anti-inflation policy

The different opinions on anti-inflation policy among economists derive from their own understanding about the causes of inflation. There are at least three different approaches on anti-inflation policy. The first group believes that monetary policy is the only option to keep down prices and it suggest that the solution to inflation has to be monetary because the cause of inflation is monetary. Hence, it believes that tight monetary policy

(mostly cut budget deficit and reduce amount of credits) can reduce rate of inflation. The second group believes that monetary policy is too harsh for economy. For instance, when rate of inflation is high if we reduce the credit amounts, or do not permit on increase in output in response to rising prices, the economy will witness depression and the situation would be worse than inflation itself. They also argue that the fiscal policy is the best measure to control prices and keep prices stable. The third group focuses on fiscal policy and also keeps the door open for adopting any instrument which can be useful to combat a certain kind of inflation. The objective of this group is based on two fundamental principles: the first one is that the policy should not hit the rate of growth, and the second one is that the policy should be in favor of the group which is hit by inflation. We have to note that to reduce the rate of inflation, we cannot focus on monetary policy. Its insufficiencies are documented by the following . When the rate of inflation increased in the mid 1980s and in 1995, both governments (the governments which led the country in the two periods had Keynesian and Monetarists approaches respectively) had chosen to tighten the monetary policy. This however brought stagflation to Iran.

Part One

Anti-inflation Policy for the long run

Inflation means imbalance between demand and supply; and to tackle inflation, either supply must be increased or demand should decline. The following discussion is divided into two sections: in the first section, we look at long run policies that can increase supply, and in the second section, we are going to consider some other policies that can stimulate production.

Oil Dependency

As we have argued in chapter 1 that dependency of Iranian foreign exchange revenue and public government budget on oil revenue made the price stability of the country dependent on the international oil market situation. Oil market is also very much dependent on political situation which makes the Iranian foreign exchange revenue and

its public budget even more unstable, and this condition consequently leads to price instability in Iranian economy. We found that Iran had price stability in the 1960s as the Iranian trading partners and international oil market maintained price stability. Later in the 1970s, when the rate of inflation jumped upto two digits, it was because of instability in the world oil market. Even when Iran had experienced stagflation in 1986 and 1995, oil prices had dramatically fallen in the international market. Therefore, it will be logical to conclude that Iranian dependency on oil revenue causes price instability for the economy. It should be noted that the Iranian oil resources, with current production of around three million barrels per day, is going to be over in less than twenties years, and as we know, oil is a material that is not renewed; this material belongs to the future Iranian generations. Therefore the Iranian government should make suitable plans for increasing added value of oil and that, in this way, the lifetime of oil sources will expand and production will rise, which in turn can reduce rate of inflation and rate of unemployment. As Management and Planning Organization, 2001, data shows the rate of inflation and that of unemployment were 20.4 percent and 15 percent in 1999 respectively. And with these policy measures the government can make national budget independent of the fluctuation of oil prices in the international market, while on the other hand, keeps the balance of payment position under manageable levels. It is suggested that any anti-inflationary policy must be aiming the independence of the economy from oil revenue. In the last chapter, we have briefly discussed the characteristics of the Iranian industry which mostly grew up in the 1960s and the early 1970s aided by cheap foreign exchange rates offered by the government to the industrial sector. The main characteristics of these firms were heavy dependence on imported inputs and a capital intensive system with low value added. These industries tended to purchase their required capital and intermediate goods from international companies, and they made no serious attempt to establish links between their demand and domestic suppliers. Iranian imports of consumer goods were 30.2 percent in 1960 which fell to 18.6percent in 1978. This remained the same during the 1980s and it declined to 15.1 percent in 1995. What is to be noted is that Iranian dependency on imports of intermediate goods increased from 49.percent in 1960 to 54.2 percent in 1978. It slightly declined in the 1980s, but increased again to 69.2 percent during the liberalization period in 1995. As mentioned in

the last chapter, Iranian economy experienced stagflation when oil prices fell in the international market in 1986 and 1995. Further dependency of the industrial sector on imports of intermediate goods during the devaluation of the Iranian currency in the 1990s, created cost-push inflation.

Table 1 provides the Iranian imports of commodities for the period of 1960 to 1995. The outstanding point of the table in regarding to our argument is imports of intermediate goods had increased from 49.2 percent in 1960 to 54.2 percent in 1978. In the post-revolutionary Iran the dependency has been increased , especially after liberalization that reached to 69.2 percent in 1995 from 58.4 percent in 1986.

Table 1:

	1960	1970	1978	1986	1992	1995
Consumption Goods	30.2	10.9	18.6	18.1	10.5	15.1
Intermediate Goods	49.2	64	54.2	58.4	60.9	69.2
Capital Goods	20.6	25.1	27.2	23.5	27.5	15.2

Source: Iran' Foreign Trade Statistics, Various years.

Figure 1

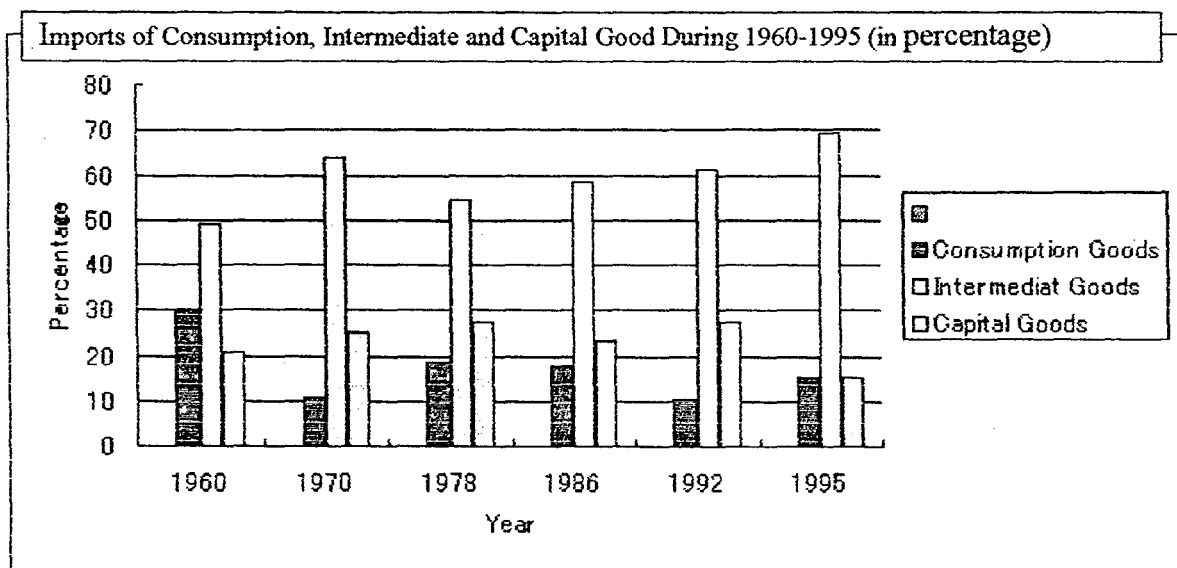Imports of Consumption, Intermediate and Capital Good During 1960-1995 (in percentage)
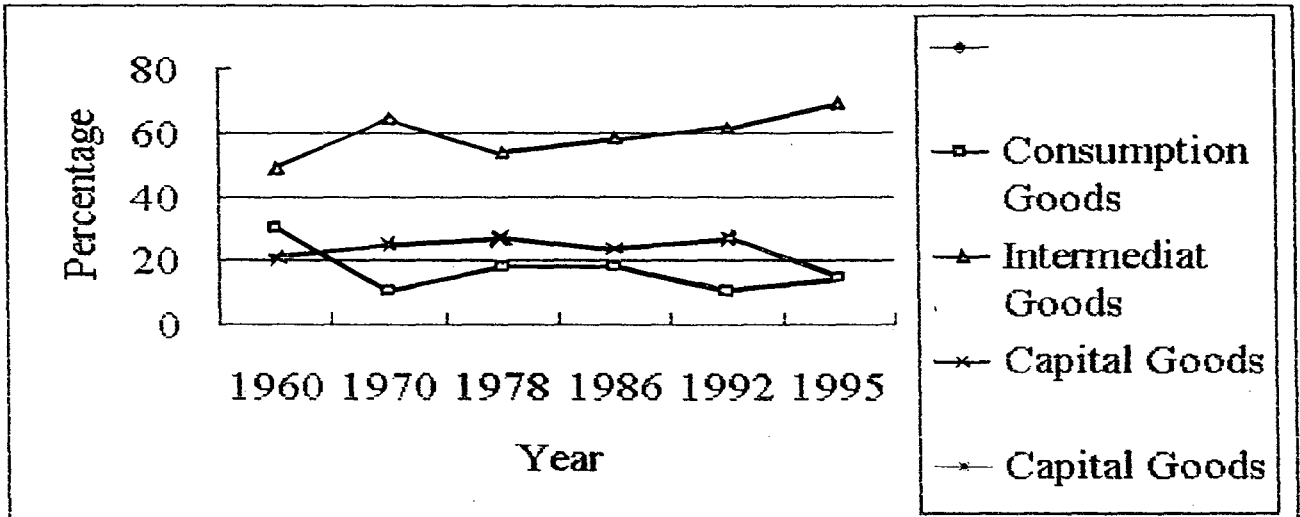
Figure 2

We can conclude the above discussion by stating that the dependency of the Iranian economy on imported inputs is a significant reason for the inflationary process. In order to eliminate this problem, Iranian government must develop the strong inter-industry linkages in the economy which make the industry independent of imported intermediate and capital goods. Perhaps 1963 and 1978 when Iran had implemented the three phases of five-year economic development plans, the consumption pattern has been changed toward consumer culture which has been influenced by advanced capitalist countries. Another point to note the consumerization of the Iranian society after the oil boom in 1973. Without doubt, the Iranian marginal propensity for consumption was high during pre-revolution, but it had reached 76 percent in the post-revolutionary period. In other words, out of each unit of Iranian income only 24 percent will be saved. The basic reason behind it was high rate of inflation in the 1980s and the 1990s which encouraged people to keep foreign currency, especially American dollar, and to buy consumer durable goods in order to maintain their real income during the inflation. Hence in the stage of high rate of inflation, we cannot expect that inflation would reduce the fever of consumer goods demand, because people think buying goods today is cheaper than buying tomorrow

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when rate of inflation is continuously increasing, and it will increase aggregate demand. Changing pattern of the Iranian consumption toward purely local production, on the one hand, and decline of demand for luxury goods, on the other hand, are primary conditions for keeping down rate of inflation.

Part Two
Tax Reform

Tax system of oil exporting countries, like other sectors of their economy, depends on oil revenue. When the revenue increases in effect of rising oil prices in the international market, the government's tax revenue will also increase and vice versa. The average ratio of taxes to total government revenue during the 1960s and the 1990s was less than 30 percent with the highest level of ratio at 49 percent in 1986 when oil prices dramatically fell and forced the government to search for other resources for revenue. It is interesting to note that the share of indirect taxes was larger than of direct ones in the pre-revolution period. But, it has been changing in favor of the latter in the post-revolution period. The shares of corporate tax and wealth tax with an average of 40 percent and 5 percent of total tax revenue are the biggest and the smallest respectively, in the same period. We can conclude above discussion as follows:

(i)   By reforming the tax system, we can expect to increase the Iranian revenue , so that the loan from the Central Bank will decline in this process and the government will be more able to reduce rate of inflation, as a result.

(ii)   The government's tax policy should emphasize on direct tax in general and wealth tax in particular

(ii)   Tax on wealth should also focus on liquidity that accumulated in the hands of merchant bourgeoisie, which according to Chini's data (1999, p.271) shows that15,000 billion rials of the liquidity flowed to speculative activities which is slightly more than the Iranian GDP in 1996. In this way, money stock flows to industrial sector, on the one hand, and the policy also supports industrial bourgeoisies, which have a crucial role to play in production and increasing supply. Hence, this can brings down the rate of inflation.

Investment

As we have found th current expenditure has been higher than development expenditure in Iran during the entire period of the study (1960s-1990s). For instance, the share of the former was 73.2 percent in 1999, while the share of the latter was 26.8 percent at the same time. On the other hand, the average share of the private expenditure was 68 percent of GNP during the 1960s and the 1970s that only 10 percent of the 68 percent share was invested. As a result, the Iranian economy has a good capacity for investment. The government can increase supply of commodities and bring down rate of inflation by changing composition of expenditure on the one hand, and reducing the reserve on private investment and providing other facilities in order to increase motivation for investment on the other hand.

Reform on Subsidies Policy

Subsidy policy can be in favor of some political classes, or it can be – along the lines of race , sex , social class , political or religious beliefs , or anything else that unites groups of individuals that they call by Salehi-Isfahani (1989, p.369) political dimension and systematic dimension respectively. Credit rationing of the Shah in 1970s which supported the industrial bourgeoisie against merchant bourgeoisie which the policy has not changed in the post- revolutionary period either. In Iran, subsidies on essential goods like in many other countries ,are for food stuffs and other essential commodities in order to protect the poor against inflation. This policy was in favor of the urban people before the Revolution when the regime spent a significant amount of the subsidies for foodstuffs especially wheat, but after the revolution the share of rural areas increased in comparison to what was before. According to the Center of Iranian Statistics the share of subsidies in the government budget increased from 1.2 percent in 1973 to 5.2 percent in 1975 and it declined in the post- revolution period to 1 percent in the last year of the war and again it increased to 3.1 percent in 1990. The subsidies policy in Iran whether before or after the revolution was meant to help all social classes. This was in conflict with the target of subsidies, because the policy must support the social groups that are hit by inflation not

the groups which had gained when prices increased. Razavi (Tabebeyan 1999, pp 369-395) discussed about the subsidy policy of the government in 1997. He considered the index of household expenditure and income for his study, and divided the society to ten classes that the annual per capita of richest class from subsidy was around 240000 rials while it the same for poorest one was 10000 rials in the time of the study. The author also found that the subsidy policy had more benefited to people in the urban areas.

Finally, Razavi (Tabebeyan pp. 393-394) asked a question: why the Iranian economic policy makers always oppose to any reforms on the subsidy policy? The answer he agrees is that the policy makers belonging to the richest of the ten percent that the reforms will not be in favor of them. We agree with Razavi that the subsidy policy should be changed in favor of poor class, but we do not accept his idea that cutting subsidy amount will reduce the budget deficit and falling rate of inflation as a result. What we suggest is, the orientation of the subsidy policy must change toward poor people and cut all subsidy to upper middle class and rich class and this amount put in a fund of organization that may establish by government in order to manage the amount for investment. In this why , aggregate demand will not reduce on the one hand and the investment can increase the supply which further help to bring down rate of inflation on the other hand. Cutting down subsidy and reducing of the budget deficit, as Razavi and other Monetarists believe, in order to cope up with inflation may lead the economy to depression. As we have already noted, the Iranian economy has been in stagnation in effect of tight fiscal and monetary policy of the government after the fallen oil prices in the international market in 1998.

Is the lag of Integration between Fiscal and Monetary policy, reason of inflation in Iran?

Monetarists would argue that the reason for the failure of liberalization policy that implemented in 1990s in Iran was lag of integration among fiscal and monetary policy makers. As Jalaly-Naini (1999, p.158) noted in the Iranian experience; "Because of the inunity between the policy makers rate of inflation increased to 50 percent in 1995". Even Samimi (1992, p.32) who is a Keynesian economist, suggests integration among policy makers in Iran in order to control rate of inflation is necessary". In the other

words, Samimi as well as Jalaly –Naini believes that disunity between the fiscal and monetary policy makers was the original reason behind the failure of the government anti-inflation policy during liberalization. For following reasons we do not agreed with Monetarists in this mater:

i)   Jalali-Naini's (1999, p.158) … "that disunity among financial and monetary authorities causes failure of the anti-inflation policy during liberalization". In the liberalization period the alliance between industrial bourgeoisie and merchant bourgeoisie to whom the guardian council (which has veto right on the bill approved by the Iranian parliament) belonged, helped all authorities of IRI to implement the liberalization and as well as anti-inflation policy.

ii)   For the first time in the Iranian economic history all economic policy makers were monetarist and all "The Money Council members" supported Monetarism during the 1990s. However, therefore the reason of Jalali-Niani in regarding the lag of integration among policy makers which fell the anti-inflation policy is not valid.

Income Distribution

Unfortunately, no one has discussed about the relation of wealth and income distribution with inflation, including Jalali-Naini (1997, 1999a, and 1999b), Samimi (1992), Nili (1987), Pesaran (1994), Ghaderi (1998), and Cheni (1999). As is already noted in the chapter one, the Iranian income was badly distributed in the 1970s and it had become the worst during the war (1980-88). In the same chapter, we have also discussed the liberalization which was implemented during the post-war period (1988-1997) and this increased the gap between the rich and the poor. Of course the new regime in the post-revolutionary Iran attempted with the land reforms and increase in wages and salaries to keep safe these social groups' purchasing power against the rate of inflation. That this was not successful because rate of inflation increased faster than the rate of wages and salaries. Supposed the rich classes pay some part of their wealth that accumulated during the war between Iran and Iraq, as the tax war, which after the war the new government forgot about that. As we suggest, this money must be return back to the

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government fund for increasing the purchasing power of the social classes who were hit by inflation during the past three decades. It is interesting to note that inflation causes unfair income distribution and not *vice a versa* . Hence the anti-inflation policy should be in favor of those people that are hit by inflation.

Chapter 8

Conclusion

Chapter 8

Introduction

The debate on inflation has a historical background and has been joined by economists from Hume, through Keynes, to several economists in the 1970s and by contemporary economists too. Before the 1970s, it was perceived that the phenomenon of inflation, apart from a few exceptional cases, was one affecting mainly the advanced capitalist countries, but after the experience of the developing countries during the 1970s and 1980s, there was no doubt among economists that inflation was a phenomenon not restricted to industrial countries only. It is necessary to note that the nature of inflation depends on the nature of the economy, and therefore, the nature of inflation not only is different among developed and developing countries but is also different among developing countries. As a result, we expect the causes of inflation to be different in countries with different economic structures.

Till the early 1970s there was no categorization of oil exporting countries, in the economic literature, as a separate entity among national economies. The first and the second oil booms, in 1973 and 1981 respectively, made the economists consider these countries as a specific category, among developing countries, since their economic characters are different from others. Iran, as an oil exporting country, has a different economic character and therefore different inflationary trends, and without considering these specificities, an analysis of inflation will not be complete. In this chapter first we conclude that the main reason for the price instability in Iran is the dependency of foreign exchange revenue, the government budget and the availability of imported inputs on oil revenue; then we focus on the theoretical and empirical elaboration of this proposition. The last part of the chapter recapitulates the relevance of our hypothesis for inflation in Iran between the decades of the sixties and nineties.

Oil Dependency and Price Instability

Analysis in the context of the developed countries usually proceeds from the three material factors, capital, labor force and technology. Production in these countries is seen to be the result of these three factors; their movements are clearly perceivable and explicable. However, in oil exporting countries the process of production is so heavily dependent on imported inputs that the whole question of the availability of petrodollars becomes crucial. Oil prices, as a factor of great strategic importance for the advanced capitalist countries, are not determined by the force of supply and the demand, the most important factor behind their movements is politics, which however will not be discussed here since that is beyond our scope.

We will discuss the nature of the dependency of the Iranian economy on oil in two sections; the budget and foreign exchange revenue:

I) the national budget of Iran, as that of other economies, was dependent on tax revenue but its dependency on oil revenue increased to 58 percent in 1926 from 21 percent in 1921. The dependency continuously increased till 1975 when it reached 78.3 percent (we are omitting the Mosadiq period 1952-1954. Nonetheless, in the post revolutionary period, the dependency reduced to 39.5 percent when oil prices fell dramatically. And when oil prices rose in the international market again the share of oil revenue in the general budget increased to 73.2 percent in 1994 and it reduced to 43.8 percent in 1998 and stood at 55.5 percent in 2000.

II) The oil revenue through trade (i.e. the export of oil) had a very marginal role in the Iranian economy before 1921. For instance, the revenue was $ 0.5 million in 1920 which was increased to $10 million, $364 million and $443 million during the years 1954, 1960 and 1962 respectively. The oil prices were more or less stable in the 1960s, but changed dramatically in 1973 and 1981 when the share of oil in the Iranian trade increased to 93 percent of the country's export. In the post–revolutionary Iran, it reached 98.3 percent, 85.8 percent and 85.5 percent in the years 1982 and 1991 and 2000 respectively. Taking the period as a whole, 90 percent of Iran's export revenue was earned from oil during 1921-1994.

Dependency of the Iranian industries to imported inputs

Iran was a country with a subsistence economy, which during the thirty five years of development plans had changed to a semi-capitalist country that very much depends on imported intermediate commodities. One of the fundamental goals of the Iranian revolution was economic independence and in this regard the government had made efforts to eliminate the problems associated with its dependence on advanced capitalist economies, but it was not successful. The Iranian economy imported intermediate goods worth 49.2 percent of the total imports in 1960 which, increased to 64 percent and 54.2 percent in 1970 and 1978 respectively, and which again rose to 66.2 percent in 1988 and to 69.2 percent in 1995. The harmful effects of this dependency become particularly evident when oil prices decline in international market and there is a reduction in the oil revenue. This has a negative impact on the imported inputs and the domestic supply and, consequently, the prices rise too as, we have seen, happened when oil prices fell in the international market in 1985 and 1995.

Theories of Inflation

There are two schools of thought in economics like ours that all theories on money and inflation are eventually based on Monetarism (which arose from the quantity theory of money, the oldest theory of macroeconomics that was formalized by Ricardo and expanded by others) and Structuralism which basically drives its inspiration from Keynes' idea.

Monetarists School

Before Keynes' Revolution "The quantity theory of money" was the dominant theory of money and classical economists had focused their discussion on that. From the beginning there were two approaches on the role of money in economy, Ricardo' approach and the Thornton-Mill approach.

Perhaps two pre-Keynesian economists had a significant impart on Keynes' money theory, Denis H. Robertson and Knut Wicksell. Denis H. Robertson was one of the outstanding economists in the pre-Keynesian period who paid attention to the relation between money supply and output. He analyzed that when money supply increased, it might cause a boom in prices, which would encourage producers to increase their production; therefore money was an active factor that could affect output. Knut Wicksell was a rare economist who attacked the "Say's law" and classical views on the rate of interest in the period of pre-"Great Depression". The question which came to his mind was: "why did the price level also come down when the rate of interest was low at the end of the 19th century?" While referring to classical opinion, he would have concluded that when the rate of interest was low, the economy should move up toward a boom and the price level should increase. But contrary to classical opinion which had imagined only one rate of interest, he distinguished between the market, or money rate of interest, and the real or natural rate of interest. The core of his innovation is that the money rate of interest in the economy may differ from the "aggregate marginal product of capital" (or real interest), therefore, it may create price instability. According to his analysis, any increase in natural (or real) rate of interest as the effect of an exogenous factor, for instance, "technical progress", will credits paribus increase prices continuously. In sum, we can classify Wicksell's point of view as follows: i) a considerable segment of his analysis was borrowed from Thornton who lived almost one hundred years before Wicksell. ii) Although he attacked "Say's law" and made some contributions on monetary theory, he remained a neo-classical economist and did not pay much attention to the role of demand in equilibrium theory iii) Finally, Wicksell's innovation with regard to the rate of interest can in some ways be said to have inspired Keynes' revolution.

Post-Keynesian Monetarism

There are two approaches among monetarists which attempt to revive "the Quantity theory"; these can be called the Friedman and Rational Expectations approaches.

Friedman's Approach

Friedman argues that the Quantity Theory of Money, first of all, is a theory of the demand for money and not a theory of output, money income, and the price level. According to his theory, demand for money was built on three fundamental principles ; (a) the total wealth that people can hold in various forms, (b) the price and return on this form of wealth and alternative forms, and (c) tastes and preference of the wealth-owning units. Of course, it is necessary to explain that he believes; i) the concept of wealth is limited to permanent income, not annual income. ii) The role of rate of interest explains the relation between the stock, which is wealth and the flow, which is income. Marx and later Keynes, in contrast to classical economists, had emphasized the store of value function of money in their respective monetary theory; that is money is a form of holding wealth. This has been accepted by Friedman. However, his insistence, based on his own empirical analysis, on a stable relationship between permanent money income and demand for money, that is unaffected by the rate of interest, puts him firmly and squarely in the monetarist camp.

Rate of interest and Monetarists

Classical economists had argued that rate of interest was a real phenomenon in contrast with Keynes who argued that rate of interest was a monetary phenomenon. Friedman had pointed out regarding Keynes' "liquidity trap" that changes in the nominal stock of money had no effect on rate of interest and employment level. According to him and other monetarists, fundamental changes in the rate of interest will happen by changing real variables like income, price level and some other factors only. According to Friedman, there are no significant relations between changes in the velocity of money circulation and the variety of interest rates in the economic fluctuations. Monetarists believe that if we accept the rate of interest as a variable in the demand function for money, it can have a "temporary effect" only. For the above reasons, the rate of interest was eliminated from Friedman's "the function of demand for money" and he considered permanent income as the most important element for demand of money.

Rational Expectation

We can call "rational expectations" as the second monetarist school. The fundamental hypotheses of the rational expectations school are the following:

i) All information in economy should be available for individuals firms and government in order to estimate the expected inflation.

ii) Individuals do not make systematic forecasting errors. It does not mean individuals, firms, do not make mistakes on their estimate, but it means that their anticipation about the future rate of inflation is on the basis of "Mathematical Expectations", hence the average of their errors will be zero.

iii) Also people are able to know about government decisions, for example, information about fiscal and monetary policy. If they could successfully estimate the changes of real money supply, then there is no change in output. In case of error in estimating changes of money supply and therefore error with regard to price anticipation, we can expect any abrupt changes in money supply or prices to impact on the level of production. Of course, the rational expectations hypothesis underlies the key ideas of flexibility of wages and prices.

Monetarists may have difference of opinion on inflation but they have three main common points on inflation:

I. Inflation is always and everywhere a monetary phenomenon.

ii. There is a cause-and-effect relationship between money stock and prices. The first is cause and latter is effect.

iii. Money stock is exogenous and it is controllable by monetary authorities.

Monetarist' analysis is based on two main principles, full employment and flexibility of prices. These principles were attacked by Keynes in the 1930s. Monetarists, like classical economists, believe that the direction of change of real wage is the same as that of money wage. One stand of criticism of monetarism says that the real issue is not the same as what classical economists had imagined in the 19th century. Trade unions have become strong during the 20th century and therefore labors resist cuts in many wages which is

why output adjustment occurs and unemployment does not fall in the absence of state intervention in aggregate demand. But a deeper criticism of monetarism argues that their theory is untenable even in a World flexible money wages and prices. Monetarists believe that money has a positive and finite value because the demand and supply mechanism ensure this. This necessarily presupposes that the supply and demand schedules of money are independent of the value of money and should intersect at a positive and finite value. It can be shown however that unless there are inelastic price expenditures money would not have a positive and finite value. And inelastic expectation can only be justified if some prices are relatively inflexible. Monetarism ignores this entire issue and assumes exogenous money and a constant velocity of circulation giving a strict proportionality between money supply and price level, in condition of (presumed) full employment.

Structuralist

The Structuralist point of view grew up on the basis of Latin American experience but those economists claim that their theory can be also applied to explain inflation in the rest of the developing economies with some modification. They argue that the economic structure of developing countries is totally different from that of developed countries; therefore, the nature of price instability must be different from that of the advanced countries. The economic problems of these countries are rooted in their economic structure. In addition, Structuralists mention that oligopolistic markets, class differences, low productivity in agriculture sector, the need to imports intermediate and capital goods, and inappropriate growth of different economic production sectors are the main characteristics of less developed economies. Structuralists distinguish between the causes of inflation (autonomous elements) and the mechanism leading to development of inflation (propagations elements).

Autonomous Elements

Three important autonomous elements that Structuralists emphasize more or less without exception are: Export instability element, the agricultural bottlenecks, and the scarcity of foreign exchange. Structuralists emphasize that for the spread of inflation autonomous element which gives rise to inflation needs a propagation mechanism. The propagation mechanism they postulate divides society in two classes, workers and capitalists. During the inflationary process the former struggle to keep their real wages in fact and the latter keep their profits safe. This gives rise to an inflationary process. Another factor that contributes to this process is the government budget. The second major propagation mechanism is the exchange rate. Developing countries in order to increase their exports or even maintain devalue their currency which in turn creates cost push inflation.

Criticism of Structuralists

The fundamental perception of the Structuralists centers around the low elasticity of agricultural food production. According to these economists the starting point of the inflationary process usually is the increase in food prices that the development process triggers off in a backward economy. Structuralists' prescription for the solution of the problem is an increase in domestic production on the one hand and the elimination of economic bottlenecks and land reform on the other hand. Iran had land reform in the 1960s and in the earlier years of the revolution. On the basis of these reform it could eliminate some supply bottlenecks; but, even so, a high rate of inflation is the one of the serious problem of Iran.

Let's continue our discussion by focusing on another element of Structuralist argument, namely the scarcity of foreign exchange in developing countries. During the past four decades Iran (except 1985 and 1998) had no serious difficulty with regard to the balance of payments. Iran has been receiving an average of $ 20 billion during past three decades; therefore the shortage of foreign exchange cannot be accepted as a factor behind the inflation process in Iran, the same is true of others oil exporting counties as well.

It is time to discuss about the empirical work. In this part we calculated six regressions for a period spanning thirty-four years, 1962-1998, in which we considered nominal GDP as depended variable and money supply as the independent variable. We were interested in capturing the effect of the growth in Ms on the growth of nominal GDP. The test showed there was no Granger causality in either direction between money supply and NGDP. Therefore, Monetarist's theory that has been saying there is an effective relation between Ms as causal factor, and NGDP as effectual factor, had been rejected. Pesaran has found a relation between money supply and prices for the period of 1980 to 1997, which he claimed to vindicate the Monetarists' portion. This, however, is wrong. The Monetarists' portion formulates a relationship between money supply and nominal income. This is the basic claim, the relation between money supply and prices being derived from this basic claim. If this basic claim is invalid, their finding a relationship between money supply and prices established nothing whatsoever, since this is no direct theoretical connection behind the two. Hence as we have mentioned in our hypothesis that inflation is not a monetary phenomenon in Iran. Our argument has been that the original source of inflationary process in Iran is the dependency of the country on foreign exchange revenue and the government budget on oil revenue. In this regard we found that in the 1960s, the period when Iran had price stability, it had low rate of inflation for three reasons: stability of oil prices in the international market, much lower reliance on imported commodities and a steady increase of domestic supplies. But the picture was not same for the 1970s. When oil prices increased in the international market and the government expenditure and the bank credits expanded, the result was the creation of excess demand, which of course could have eliminated the rate of inflation reduced through obtaining more imports with the country. This however did not happen for two reasons, the bottlenecks constituted by Iranian ports and roads which ensured the persistence of supply-shortage on the one hand, and the increase in the rate of inflation in Iran's trading partner countries, (Which gave rise to imported inflation for the Iranian economy) on the other hand. Of course we have to note that not only imported inflation but also increasing wages in the construction sector and some parts of the industrial sector affected the inflationary process in Iran during the 1970s. Basically however, we emphasized that excess demand was the main reason for inflation in the 1970s.

We divided the decade of the 1980s into two different parts for studying the inflationary process: when oil prices were booming, which was in the first half of the decade, and when they fell in the international market which was in the second half the decade. In the first half the rate of inflation in wholesale prices fell from 30 percent in 1981 to 7.6 percent and 7.7 in 1984 and 1985 respectively, while it increased to 25.3 percent and 29.7 percent in 1987 and 1988 respectively. In addition, rate of inflation in the post-oil boom period averaged 12.2 percent, and it jumped to 18.3 percent for the period 1980-1988.

In sum, we found three important points in chapter five, or war economy;

1. The main reason for inflation was the fall in oil prices, which conforms to our view that Iran's excessive dependence on oil is the basic reason for price instability.

2. Falling of oil prices in the international market caused Iran to experience stagflation.

3. In this period, as in the 1970s inflation, the government was forced to expand its expenditure and the banks gave larger credits when the inflationary process was started. Therefore there is a possibility that inflation was the cause and the increase in money supply was the effect, rather than the other way round. This result also supports our view that there is a link between oil prices and Iranian inflation. Iran had implemented liberalization in the post-war period, 1988-1997. Devaluation and unification of foreign exchange rates were the centre points of the new economy policy. Neoclassical and Monetarists believe that true prices, are established through an open economy formed on a "floating" exchange-rate system. In such an economy, resource allocation would be optimized and this will increase productivity and profitability. To achieve this objective, a devaluation of the local currency is a must. The Iranian rial was devaluated by over 2500 percent by the central bank from 1989 to 1994, and the gap between the official foreign exchange rate and the black market rate increased almost five times in the same period. Under the new foreign exchange policy and devaluation of rial imported input prices increased dramatically which created cost-push inflation in this period. In these circumstances the rate of inflation jumped to 49.4 percent in 1995. The architects of the Iranian liberalization argued for restricting the rate of inflation through a tight monetary policy. The result of

curtailing money supply however was a fall in real GDP and an increase in the rate of unemployment from 9.4 percent in 1995 to 15 percent in 1999.

Finally, we have suggested some anti-inflationary policies in the context of the contemporary Iranian economy. The most important of these policies is a greater detachment of the government budget and of foreign exchange revenue from oil revenue through shifting to other sources of revenue, and tax reform that stimulates investment. Reform of subsidy policy with a shift towards the production sector in order to increase supply is necessary. Ultimately however the thrust of any anti-inflationary policy must be to provide help to the poor people who suffer most during the infationary process. The solution of Monetarists for cutting down inflation is simple; just reduce money stock, while Structuralists' view about anti-inflation policy which is more applicable to developing countries is more complicated. We found that according to our hypothesis, devaluation of rial during the liberalization period was not primary reason for soluation. In this chapter, we also found that dependency of the Iranian economy to the oil revenue; imported inputs and the pattern of economic development are the fundamental of inflation that we have mentioned that they should target the government's anti-inflation policy in the long run. We also discussed the government can combat inflation through tax reform, investment, reform on subsidies policy and income distribution policy in the short period. In the end we mentioned that inflation causes unfair income distribution and the anti-inflation policy should only help these people hit by inflation.

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