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**The Impact of Macro Economic Factors on the
Stock Prices:
A Case Study of Kuwait.**

by

Sadeq Abdelrahim

**A Thesis submitted in partial fulfilment
of the requirements for the degree of
M. A. in Economics**

Department of Economics

The University of Durham

1990



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Abstract

The aim of this dissertation is to:

1. examine the impact of the macro economic variables on the stock prices in Kuwait, and
2. build a forecasting model for the stock prices in Kuwait.

Ordinary least squares regression analysis has been used to examine this relationship. The results confirm that there is a significant relationship between stock prices and some macro economic variables such as government expenditure, sight deposits, oil revenues, \$ /KD exchange rate, M1 and M2.

The results for the relationship between money supply and stock prices in Kuwait, indicate that this relationship in Kuwait is similar to that in any other country where stock prices increase as a result of an increase in the money supply. Also, the results show that the best forecasting model for stock prices in Kuwait is the random walk model. Finally, some recommendations for re-organizing and strengthening the stock market in Kuwait are presented for consideration by the government of Kuwait.

Acknowledgements

The study reported here would have been extremely difficult but for the overwhelming support, advice and encouragement I have received from numerous persons.

In particular I wish to thank Mr. Phil Holmes for his excellent supervision. His advice and direction has been instrumental in the much improved content of the work reported here. I would be failing in my duty if I do not mention the continuing encouragement, support and supervision of Dr. R. Wilson, the chairman of the Board of Studies of the Economics Department.

I would also like to express my gratitude for the support, that made this thesis possible, to Mr. Abdul-Jalil Al-garabally, the Executive Director of Economic Affairs in the Central Bank of Kuwait.

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Last but not the least, without the support, understanding, love and encouragement of my family it would have been impossible to take on an undertaking of this magnitude. It has involved a period of more than a year away from home and my children, Dalal, Mohammed and the newcomer Sarah. How can I ever express my gratitude to my wife Deiya for her understanding?

S. A.

May, 1990.

To my country

KUWAIT

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Abbreviations

CBK:	Central Bank of Kuwait.
CD's:	Certificates of Deposit.
CPI:	Consumer Price Index.
DW:	Durbin-Watson Statistic.
EMH:	Efficient Market Hypothesis.
FT:	Financial Times Share Index (650).
GAP:	General Average Price.
GDP:	Gross Domestic Product.
GNP:	Gross National Product.
GO:	Gulf Oil Company.
GRF:	State general Reserve Fund.
IMF:	International Monetary Fund.
KOC:	Kuwait Oil Company.
KPC:	Kuwait Petroleum Corporation.
LDC's:	Less Developed Countries.
Mb:	Million barrels.
MCI:	Ministry of Commerce and Industry.
MR:	Multiple R.
OPEC:	Organization of Petroleum Exporting Countries.
OLS:	Ordinary Least Squares.
R ² :	Coefficient of Determination.
RFFG:	Reserve Fund for Future Generations.
SEE:	Standard Error of Estimates.
SM:	Stock Market.
SPI:	Stock Price Index.
WPI:	Wholesale Price Index.

Chapter I

THE RESEARCH PROBLEM

Kuwait is a small developing country, with few natural resources apart from oil. The main source of income for the government of Kuwait are the oil revenues. These usually represent more than 85 per cent of the total budgeted revenue of the government. To promote economic activity in the country, a large portion of this revenue - through direct and indirect spending avenues - is channelled to the private sector of the economy. As an oil based economy, Kuwait has a special set of characteristics which differentiates it from other developing countries.

The economic development of Kuwait, unlike that in most other developing countries, has never been constrained by lack of capital. Kuwait ranks amongst the surplus countries in the international monetary system, and its economic system has limited absorptive capacity. The uniqueness of the Kuwaiti economy, with the oil revenue surpluses accumulated by the government, requires an efficient mechanism for channelling these funds to other agents in the economy, particularly the productive sectors.

The role of the stock market (SM) is mainly to facilitate and encourage the mobilisation of funds, direct them towards efficient economic activities, provide adequate liquidity for investors and encourage the creation of large scale enterprise. The consideration of these features is the the subject of this research.

It is perhaps worth mentioning that this study is of more than academic interest, it is actually of practical importance.

1.1 OBJECTIVES

The importance of the proposed research is derived from the significance of the process of financial intermediation in a capital-surplus economy with a limited absorptive capacity. It aims at;

- (1) sketching the major contours of the Kuwaiti economy and the financial sector in particular.
- (2) tracing the development of the SM, its structure and its regulations.
- (3) discussing the mechanism of the supply of and demand for securities in the SM, that is economic versus non-economic factors.
- (4) evaluating the mechanism of price determination, to assess the extent to which the prices of shares reflect economic versus non-economic factors.
- (5) developing a model, on the basis of which the behaviour of demand, supply and prices are explained and forecast.
- (6) finally, providing some recommendations for possible reforms which might be adopted to control and improve the role of the SM.

1.2 OUTLINE

In order to fulfill these objectives the following strategy has been adopted.

Chapter II provides an introduction and an overview of the Kuwaiti economy and its unique characteristics. Chapter III aims to review the Kuwaiti financial sector, while Chapter IV covers the historical developments of the Kuwaiti stock market, exploring the 1977 and 1982 crises, especially their main causes. In Chapter IV an evaluation is also made of the measures adopted by the Kuwaiti authorities to solve the problems and eliminate their repercussions. Chapter V covers the literature and empirical review. Chapter VI evaluates the mechanism of price determination and the main factors reflected in the movement of share prices. It also aims to develop a structural model for explaining stock price movements and attempts to answer the following questions.

- (I) What is the relationship between economic activity and the general level of share prices in the Kuwaiti SM? This question can be further split into;
 - (a) What is the kind of relationship between the macro-economic factors and the level of SM prices?

- (b) What is the most important macro-economic factor that affects the price levels in the SM?
- (II) How are the stock prices determined?
- (III) Can we predict the movement of stock prices in Kuwait?

Finally Chapter VII includes some recommendations and the conclusions of this study.

1.3 METHODOLOGY

The methodology adopted is to evaluate and determine the influence of economic forces which affect the stock market in Kuwait. Such an evaluation and determination can be possible through:

- (a) A theoretical background concerning the literature on the SM and the characteristics of the Kuwaiti economy.
- (b) Analysis of available data concerning the activity of the Kuwait SM.
- (c) Quantitative methods that analyse the most important factors which determine the price of securities.

1.4 SOURCES OF DATA

The bulk of the statistical data utilised in this study has been obtained from the Kuwait Stock Market, the Central Bank of Kuwait and the Central Statistical Office of the Ministry of Planning.

1.5 LIMITATIONS OF THE STUDY

Although this study aims to cover the developments in the Kuwait Stock Market over a period of thirty years, the empirical work reported is limited to the period 1979-88 only. It will, of course be much more valuable if a larger amount of data were available encompassing a longer period.

It is common in the field of econometrics in the developing countries for the researcher to focus on the problem of the availability of data. For example the

author could not find data compiled on a quarterly basis for the non-oil GDP in Kuwait. Further the data published by the Central Bank of Kuwait always differs from issue to issue.

Chapter II

THE KUWAIT ECONOMY

Kuwait is located in the north west of the Arabian Gulf between latitudes 28° and 30° N and between longitudes 46° and 48° E. Kuwait's border with Iraq runs for 240 kilometers in its north and west. Saudi Arabia lies to the south and south west and shares a frontier of 250 kilometers. To the east Kuwait's coastline on the Arabian Gulf runs for 290 kilometers. Kuwait became an independent state in June 1961, before which she was a British protectorate. The Indian rupee was the currency in use before 1959 when the Gulf rupee was introduced. The present Kuwaiti dinar replaced the Gulf rupee in April 1961.

Kuwait is a small country and can be classified as a developing country. This is so because there are certain indicators such as a high per capita income¹, one of the highest saving rates in the world, and a consistently favourable balance of payments account, which characterise members of the developed world. On the other hand one can justify its inclusion among the developing nations because its economy is solely dependent on the production of a single raw material, that is oil.

As stated by Khouja and Sadler² one can trace the emergence of the modern Kuwaiti economy to 1946. In that year the first exports of oil were recorded. The subsequent exploitation of its oil reserves led to a phenomenal growth of the Kuwaiti economy. Within a short span of fifteen years its population came to enjoy living standards normally associated with the most developed of the industrialised states. However prior to the discovery of oil the primary economic activities of the Kuwaiti people were limited to merchant shipping, boat building, foreign trade and pearl fishing.

¹ The World Bank's development report of 1988 states that Kuwait has the sixth highest per capita income in the world.

² Khouja and Sadler, "The Economy of Kuwait", London: MacMillan Press, 1979, p.25.

2.1 SOCIO-ECONOMIC DEVELOPMENT

2.1.1 Population

The population characteristics of Kuwait are very unusual and interesting. It is a fact that the Kuwaiti nationals are in a minority in their own country. The reasons can be found in the rapid expansion of the economy after 1945, which was accompanied by an equally rapid demographic growth. If we compare the most recent population figures from the census of 1985 with reliable estimates of the population at the turn of the century, the growth stands at a staggering 10187 per cent.

In 1904 the population of Kuwait was estimated to be 3500 by Lorimer³. Lorimer excluded about 13000 bedouin from his estimate. Before the start of the second world war, and particularly after 1935, when prospects of the discovery of oil increased, the growth in population accelerated and there were 75000 heads in Kuwait just before the export of oil was initiated. Later in 1952 the population was estimated to be 160000, and by the time the first proper census was undertaken in 1957 the figure had reached 206473. Out of this total 55 per cent were Kuwaiti nationals. Much more reliable figures are now available as a census is conducted every five years in Kuwait. Table 2-1 gives the figures since 1970 onwards.

It is apparent from Table 2-1 that

- 1 The proportion of non Kuwaitis has risen from 53 per cent in 1970 to 60 per cent in 1985.
- 2 The total population rose by 130 per cent over the period of fifteen years from 1970 to 1985. This gives an annual rate of 5.6 per cent.

2.1.2 Population Growth:

Preliminary estimates based on the 1985 data indicate that the population of Kuwait may have risen by mid 1988 to 1.95 million and by 1990 would reach 2.1 million. It is projected that by the year 2000 there will be about 3 million people living in Kuwait.

³ Lorimer, "Gazetteer of Persian Gulf", Calcutta (1908), Vol.11, p.1051.

TABLE 2-1: Population by Nationality (1970-85).

NATIONALITY	1970	(%)	1975	(%)	1980	(%)	1985	(%)
Kuwaiti	347396	47	472088	47	565613	42	681288	40
N-Kuwaiti	391266	53	522749	53	792339	58	1016013	60
Total	738662	100	994837	100	1357952	100	1697301	100

Source: Ministry of Planning: Central Statistical Office.

(*Annual Statistical Abstract*, XXIV, 1987.)

Table 2-2 gives the projected figures for both Kuwaiti and non Kuwaiti nationals in Kuwait for the period 1986-90. The estimates assume an annual growth rate of 4.5 per cent evidenced for the years 1986-90. In comparison the corresponding figure for the period 1975-80 was 6.4 per cent. The 1985 figures also indicate a constant 3.7 per cent annual increase in the Kuwaiti population, compared with a decline in the rate of increase of the non Kuwaiti population to 5.1 per cent annually from 8.7 per cent recorded over the five year period of 1975 to 1980. In fact, apart from the period 1970-75, the rate of growth of the non Kuwaiti population has remained much above that for the Kuwaiti population since 1957.

The main factor responsible for the increase in the non Kuwaiti population is the high rate of immigration. In fact soon after the discovery of oil the population growth rate touched an annual maximum of 9.2 per cent⁴. After the publication of the results of the 1985 census, the political, economic and social implications of Kuwaitis being outnumbered by the foreign "non Kuwaiti" arrivals were fully considered for the first time. In this regard Table 2-3 gives the division of the labour employed in various sectors of the economy. It is to be noted that:

⁴ AL-Rumaihi M., "Oil and Social Change in the Arab Gulf" (in arabic), Cairo: Institute of Higher Education: Arab League Office, 1975, P.36.

TABLE 2-2: Estimated Population (1986 – 1990).

(Mid-Year)

YEAR	KUWAITI	NON-KUWAITI	TOTAL
1986	712257	1078256	1790513
1987	739264	1133305	1872569
1988	767295	1191182	1958477
1989	796389	1252033	2048422
1990	826586	1316014	2142600

Source: Ministry of Planning, Central Statistical Office.

(*Annual Statistical Abstract*, 1987, p.25)

1. The highest proportion (48.7 per cent) of the labour force is concentrated in services. This includes the private and the state sectors.
2. The other major employer is the construction sector which uses 18.5 per cent of the available labour.
3. The largest chunk of Kuwaiti labour is concentrated in the social services. This government sector has about 74 per cent of the total Kuwaiti labour and indicates the high degree of dependence on the state as a major employer. It is a policy of the government of Kuwait to guarantee employment to every Kuwaiti citizen. This policy is dictated by article (41) of the state constitution adopted on November 17, 1972, which states that “ Every Kuwaiti has the right to work and to choose the type of work to his liking. Work is duty of every citizen necessitated by personal dignity and public good. The state shall endeavour to make it available to citizens and make its terms equitable.”
4. There is a small number of Kuwaitis in the construction and other sectors. The low percentages are explained by the general nature of a Kuwaiti who

TABLE 2-3: Labour Force According to the Economic Sector.

(1985)

ECONOMIC ACTIVITY	KUWAITI	(%)	NON-KUWAITI	(%)	TOTAL	(%)
Agriculture	2781	22.0	9851	78.0	12632	1.4
Mining	2511	35.7	4522	64.3	7033	1.0
Industries	4692	9.2	46397	90.8	51089	7.6
Construction	1462	1.2	122694	98.8	124156	18.5
Electricity + Gas	1564	20.9	5902	79.1	7466	1.1
Wholesale + Hotels	6076	8.0	69855	92.0	75931	11.3
Communications	7661	20.6	29544	79.4	37205	5.6
Finance + Business	3868	19.0	16479	81.0	20347	3.1
Social Services	92945	28.4	233784	71.6	326729	48.7
Other Sectors	2850	36.6	4947	63.4	7797	1.2
Total	126410	18.9	543975	81.1	670385	100

Source: Ministry of Planning, Central Statistical Office.

(Annual Statistical Abstract, 1987, p. 125.)

tends to refuse employment calling for manual labour. A Kuwaiti prefers to be employed as a supervisor rather than as a construction worker⁵.

5. The number of Kuwaitis engaged in all economic activities, account for a mere 18.9 per cent of total labour force compared with 81.1 per cent for non-Kuwaitis. The main reason for this phenomena is the small population of the state, especially those of working age. Also, as mentioned above, the reluctance of Kuwaitis to get engaged in manual labour contributes to this phenomena.

⁵ AL-Essa, "The Manpower Problem in Kuwait", London: Kegan Paul International, 1980, p.20.

2.2 A REVIEW OF THE NATIONAL INCOME

2.2.1 Gross National Product (GNP):

Table 2-4 presents the updated figures for Kuwait's GNP. In 1987, the GNP amounted to KD 6940.5 million at current prices. This can be compared to KD 6998.3 million in 1986. If we take 1978 to be a benchmark the adjusted figures for the GNP are KD 4796.4 million in 1987 as compared to KD 4880.2 million in 1986. The real GNP peaked in 1980 and shows signs of being stable at around the 1978 value.

2.2.2 Gross Domestic Product (GDP):

Changes in the national income have, not surprisingly followed developments in the oil sector. The unadjusted figures for the GDP show it to be KD 5444.4 million in 1987 as compared to KD 3836.4 million in 1976. This translates to an increase of 41.9 per cent. However adjusting for inflation, that is in terms of the 1978 value of the Kuwaiti dinar, the GDP was KD 3762.6 million as against KD 4389.5 million in 1976.

Table 2-5 displays the most recent figures for the GDP at current prices. It shows that the share of the oil sector in the GDP has declined from 65.7 per cent in 1976 to 41 per cent in 1987.

Figure 2.A shows a detailed analysis of the GDP at current prices during the period of 1976 to 1987. The increase in oil production in 1979 is reflected in the jump from KD 4264 million in 1978 to KD 6839.8 million GDP. In 1980 the GDP peaked and in the period 1981-87 it decreased by KD 1541.32 million or 22 per cent. It may be recalled that during the same period the oil prices fell after an oil glut in the markets which resulted from a combination of over production and increased attempts at energy conservation in the industrialised countries. Figure 2.A also exhibits the close relationship between the GDP and the Oil-GDP (Oil sector) ; the slope of the GDP follows the Oil-GDP slope.

In terms of macro-economic theory, GDP can be measured as the total expenditure on the final output. Table 2-6 shows the GDP computed from the type of

TABLE 2-4: GDP and GNP

(million KD)

YEAR	GDP	GNP	CPI	AGDP	AGNP
1976	3836.49	-	87.4	-	-
1977	4051.60	-	93.3	-	-
1978	4264.32	4981.3	100.0	4264.3	4981.3
1979	6839.87	7712.9	107.1	6386.4	7201.5
1980	7741.09	9051.1	114.5	6760.7	7904.8
1981	6985.81	9122.8	122.9	5684.1	7422.9
1982	6192.70	7901.7	132.5	4673.7	5963.5
1983	6089.90	7548.9	138.7	4390.6	5442.6
1984	6381.20	7851.2	140.4	4481.2	5513.4
1985	5830.38	7218.4	142.4	4094.3	5069.1
1986	4816.29	6998.3	143.8	3358.6	4880.2
1987	5444.49	6940.5	144.7	3762.6	4796.4

[CPI:Consumer Price Index = 100 for 1978

AGDP:Adjusted GDP, AGDP=GDP/CPI

AGNP:Adjusted GNP, AGNP=GNP/CPI.]

Source: Ministry of Planning, Central Statistical Office.

*(Annual Statistical Abstract, 1988, p. 25.)*expenditure incurred according to the relation⁶.

$$GDP = C + I + G + (X - M),$$

⁶ Branson and Litvack, "Macroeconomics", New York: Harper and Row, 1976, pp.34-36.

TABLE 2-5: GDP at Current Prices

(million KD)

YEAR	GDP	OIL	(%)	Non-OIL	(%)
1976	3836.49	2519.67	65.7	1316.32	34.3
1978	4264.32	2520.55	59.1	1743.77	40.9
1979	6839.87	4412.54	64.5	2427.33	35.5
1981	6985.81	4114.96	58.9	2870.84	41.1
1984	6380.77	3400.09	53.3	2980.68	46.7
1985	5830.38	2983.16	51.2	2847.22	48.8
1986	4816.29	1841.76	38.2	2974.53	61.8
1987	5444.49	2232.18	41.0	3212.31	59.0

Source: The Central Bank of Kuwait.

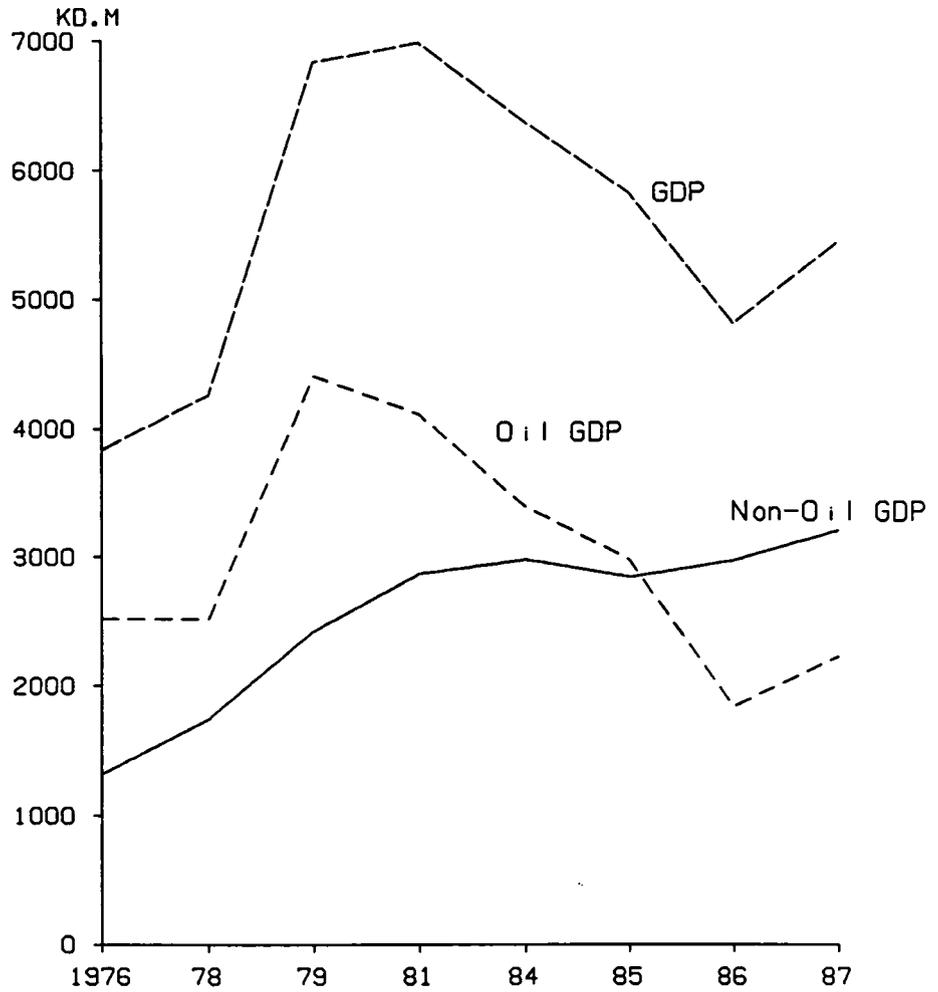
Quarterly Statistical Bulletin, Nov-Dec 1988, p.59.

where

 C = Private Consumption I = Gross Fixed Capital Formation + Change in Stocks G = Government Consumption X = Exports M = Imports

As can be seen from Table 2-6, private consumption has more than doubled during the period 1976 to 1987. In 1987 government consumption had reached KD 1377.1 million, whereas it stood at KD 432.3 million in 1976. The gross fixed capital climbed to KD 1042 million in 1987 from KD 563 million in 1976.

FIG 2.A GDP at Current Prices 1976-87



SOURCE: Central Bank of Kuwait

TABLE 2-6: GDP in Terms of Type of Expenditure

(at current prices)

YEAR	GC	PC	GF	CH	EX	IMP	GDP
1976	432.3	1026.6	563.1	72.1	2992.39	1250	3836.49
1977	586.3	1362.7	815.2	129.4	2918.00	1760	4051.60
1978	615.8	1477.6	793.8	69.0	3008.00	1700	4264.32
1979	763.8	1780.3	789.6	144.1	5333.00	1971	6839.87
1980	864.9	2388.5	972.6	105.0	6065.00	2655	7741.00
1981	993.2	2663.9	1072.8	89.0	4855.00	2688	6985.90
1982	1197.2	3316.9	1436.0	129.1	3386.00	3253	6212.20
1983	1298.7	2795.7	1525.1	-18.3	3596.00	3063	6134.20
1984	1356.6	2878.7	1306.3	14.2	3862.00	3037	6380.80
1985	1457.2	2356.6	1334.5	-36.85	3462.00	2743	5830.45
1986	1440.4	2403.2	1097.6	-51.94	2402.00	2475	4816.26
1987	1377.2	2792.3	1042.0	-	2611.00	2378	5444.50

[GC : Government Consumption, PC : Private Consumption,
GF : Gross Fixed Capital Formation, CH : Change in Stocks,
EX : Exports, and IMP : Imports.]

Source: Central Bank of Kuwait.

(*Quarterly Statistical Bulletin*, Nov-Dec 1988, p.61.)

2.3 THE OIL SECTOR

2.3.1 Development of the Oil Sector:

Oil is the main product of Kuwait and the primary source of its income. As mentioned earlier production for export started in 1946. It jumped from 787500

TABLE 2-7: Oil Sector During 1977–85.

(in million barrels)

-	77	78	79	80	81	82	83	84	85
Oil Production	718	777	911	607	411	300	384	424	387
Oil Exports	588	642	760	461	297	134	198	242	173
Refined Products	134	121	134	110	93	129	140	149	169
Gas Production	362	392	460	310	223	162	191	205	205

Source: Ministry of Planning, Central Statistical Office.

(*op. cit.*, p. 204.)

tons in 1946 to 12 million tons in 1949. During the Iran crisis (1951-54) production quadrupled to 47 million tons a year. In 1972 Kuwait produced over 1201.6 million barrels (mb) of crude oil. During 1972 to 1977 production fell to 718.1 mb (declining by 59 per cent)⁷. In 1985 the production had come down to 387 mb. In sympathy with the decline in oil production the production of natural gas also dropped by 43 per cent as is shown in Table 2-7.

The developments in the oil sector during 1977-1985 can be summarised as:

1. In late 1976 the government in Kuwait concluded that it was much more beneficial to let the oil remain in the ground for the future generations rather than to hold hard currency or invest in shares which were subject to exchange rate risks and price inflation.
2. The relatively high oil production (911 mb) in 1979 is explained by the cutbacks in Iranian oil production at the beginning of the revolution in Iran.
3. As a result of the glut in the world oil market in the early 1980's, production came down to 411 mb in 1981, 300 mb in 1982 and was about 387 mb in 1985.

⁷ Hill and Vielvoye, "Energy in Crisis", London: Robert Yeatman Limited, 1974, p.43.

4. In January 1983 the Kuwait government created the Kuwait Petroleum Corporation (KPC) and unified the organizational structure of the oil industry. KPC was established as a commercial company outside the government budget. Now the KPC is one of the largest corporations in the world and is sometimes called the "seventh" sister⁸.
5. The excess oil in the market during the 1980's has caused a fall in the price of the precious commodity. The declining revenues are reflected in the budget of the Kuwait government which has shown a deficit for the sixth year running.
6. In 1985, the production of refined products of oil reached 169 mb. A possible reason could be the realisation on the part of the government that it is easier to find markets and export refined products in comparison to crude oil.
7. Figure 2.B depicts the growth and decline of the oil sector during 1977-85. The behaviour shows a fluctuation between a decline of 68 per cent during 1980-82 and an increase of 29 per cent in 1985 compared with 1983.

2.3.2 Government Oil Policy

In order to understand the development of government oil policy and the relationship between the government and the oil companies in Kuwait, it is convenient to divide the period of evaluation into two main stages.

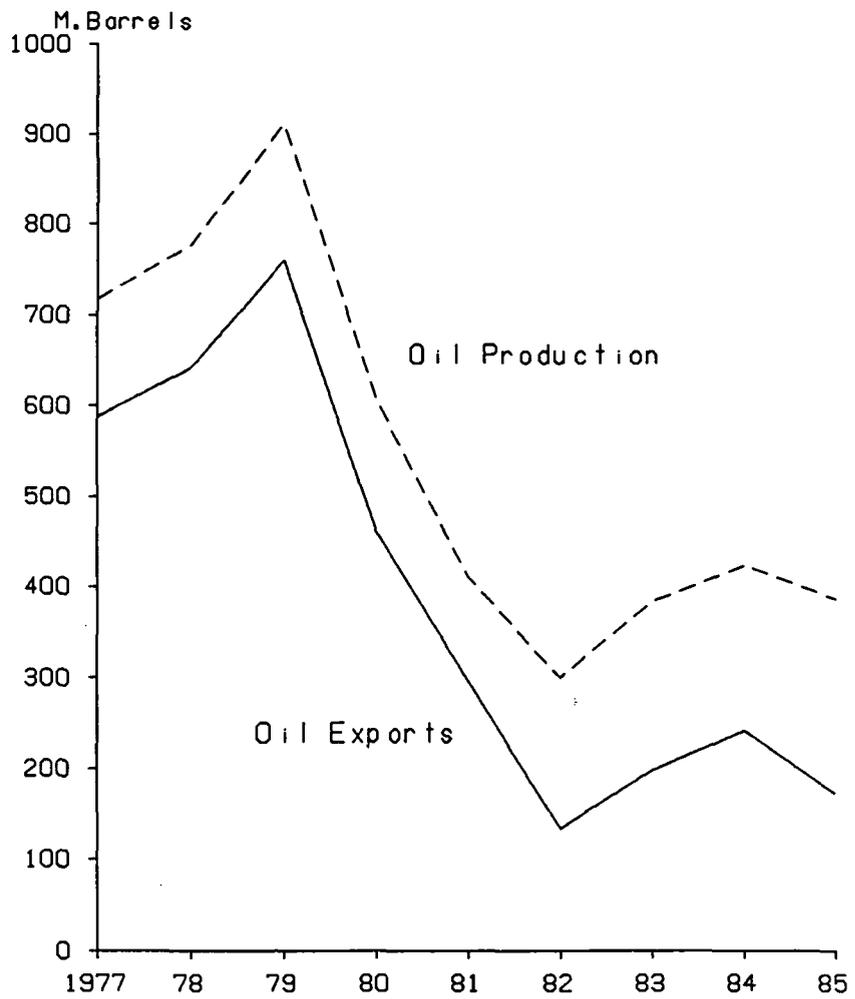
(1) Stage-I:(1934-1974)

In 1934 the Kuwait Oil Company (KOC) was established. It was a joint venture with British Petroleum (BP) and Gulf Oil (GO) holding equal shares. The KOC began its operations with surveys in 1935. Drilling was initiated in 1936 on the north shore of the Kuwait bay, but it did not strike oil. In 1938 the Burgan field was discovered. This oil field is one of the largest and most productive in the world. Exports of crude oil started in 1946.

It has to be noted that the first concession allowed by the Kuwaiti government to BP (along with GO) was on quite unfavourable terms (for Kuwait). For instance;

⁸ The other six major and older corporations are known as the six sisters.

FIG 2.B OIL SECTOR 1977 - 1985



SOURCE; Central Bank of Kuwait

- i. The concession was valid for a rather long period of 75 years⁹.
- ii. The system of payment for the allowed concession was very unfavourable. According to Shamma "the total payments to the government of Kuwait from the commencement of export until 1949 averaged US\$ 0.13 for a barrel. However when the British government devalued the Pound Sterling in 1949, Kuwait's income fell from US\$ 0.13 to US\$ 0.09 per barrel, as the Kuwait government was paid in Pounds"¹⁰. Later on however, with the entry of smaller oil companies, the terms of concessions improved. The concessions were allowed for a shorter time and required higher payments to the government. Further opportunities for Kuwaiti participation in the oil companies were enhanced. In July 1958, for example, a concession agreed to by the Kuwaiti government and a Japanese company, stipulated the payment of 57 per cent of the oil profits by the company to Kuwait. The government also acquired the right to acquire 10 per cent of the shares at par value once oil was discovered in commercial quantities.

(2) Stage-II:(1974-1988)

Starting in the early 1970's the parliament began to play an active role in the determination of the countries' oil policy. Parliament members forced the government to renounce certain deals negotiated earlier with oil companies. As a result the Kuwaiti government bought 40 per cent shares of the KOC. In 1977 Kuwait nationalised the oil industry and acquired shares in other related industries. As noted earlier the Kuwait Petroleum Corporation was set up in 1983. During the period under consideration the government's policy in oil production and pricing is related to decisions of the Organization of Petroleum Exporting Countries (OPEC). The Kuwaiti government policy does not differ from the strategy jointly adopted by the OPEC countries.

2.3.3 Importers of Kuwaiti Oil:

In 1985 the Asian countries imported about 66 per cent of the Kuwaiti crude

⁹ Shamma S., "The Oil of Kuwait", Lebanon: The Middle East Research and Publishing Centre, 1959, p.14.

¹⁰ Mikdashi, "A Financial Analysis of Middle Eastern Oil Concessions", London: Frederick Praeger, 1966, pp.80-83.

TABLE 2-8: Direction of Oil Exports.

(as percentage of the total)

COUNTRIES	1981	1982	1983	1984	1985
Arab	2.6	2.4	-	1.2	4.5
European	22.8	16.9	16.8	17.7	25.8
American	3.8	5.0	6.3	4.8	-
Asian	68.5	69.8	70.2	65.4	66.2
Oceanic	1.3	0.4	2.3	2.1	1.6
Others	1.0	5.5	4.4	8.8	1.9
Total	100	100	100	100	100

Source: Ministry of Planning, Central Statistical Office.

(*op. cit.*, p. 205.)

(author's calculations)

oil. Among them Japan is the largest buyer of Kuwaiti crude, and accounts for 48 per cent of the total exported to Asian countries. Next in line is Taiwan which accounts for 23 per cent, followed by South Korea with a 14.58 per cent share of Kuwait's Asian exports. The European countries account for 25.8 per cent of Kuwait's crude oil exports. Holland is the largest single buyer of Kuwaiti crude and it gets 72 per cent of all Kuwaiti crude exported to Europe. Table 2-8 lists the direction and percentage of crude oil exported from Kuwait.

2.4 FOREIGN TRADE

The foreign trade sector is one of the most active in the Kuwaiti economy. The highly significant dependence on external trade is best exhibited by the ratio of the trade value to the GNP. In 1978 this ratio stood at 83 per cent, and had come down to 50 per cent in 1987. Another important indicator of the foreign trade

sector is the annual relative weight *R.W.* of this sector in total economic activity and is calculated through the relation,

$$R.W = \frac{\text{value of exports} + \text{value of imports}}{\text{GDP} + \text{value of imports}} \cdot 100.$$

The results indicate that the relative weight of foreign trade in the Kuwaiti economy has averaged around 67 per cent during the period 1976-1988. Other indicators which may be used to analyse the role of foreign trade are,

- (a) Ratio of exports to imports.
- (b) Ratio of imports to the GDP.
- (c) Ratio of exports to the GDP.

In 1987 the above indicators were 157.8 per cent, 27 per cent and 42.7 per cent respectively as compared to 295.7 per cent, 25.3 per cent and 74.9 per cent in 1976. Oil exports rose in value by 81.8 per cent to KD 4781 million in 1979. The rise was a result of an increase of 17 per cent in the Kuwaiti oil production due to the escalating demand for oil that accompanied the revolution in Iran. Accompanying the anxieties resulting from the situation in Iran was an increase in the price of oil which also contributed to the increased revenue for Kuwait. During 1980 the increase in prices slowed down and finally stopped at a value which was 3.7 per cent higher than that in the preceding year. In 1981 the oil prices began to fall and subsequently the revenue from oil exports declined from KD 4960.8 million in 1980 to KD 2938.2 million in 1983. The oil exports increased in value to KD 3256.9 million in 1984 but have declined since then. Provisional figures indicate that in 1988 the exports of oil had fallen to KD 1755.9 million (see Figure 2.C). Exports apart from crude oil also began declining in 1982 and by the end of 1987 had fallen to their lowest level since 1976. In fact the export of other commodities was badly affected by the Iran-Iraq conflict, as these two countries were the main markets for Kuwait's non-oil exports.

The growth of imports, on the other hand, has been influenced, both directly and indirectly, by the high oil prices. During the period 1976-88 the rate of growth of imports has fluctuated between an average increase of 24 per cent during 1976

FIG.2.C FOREIGN TRADE

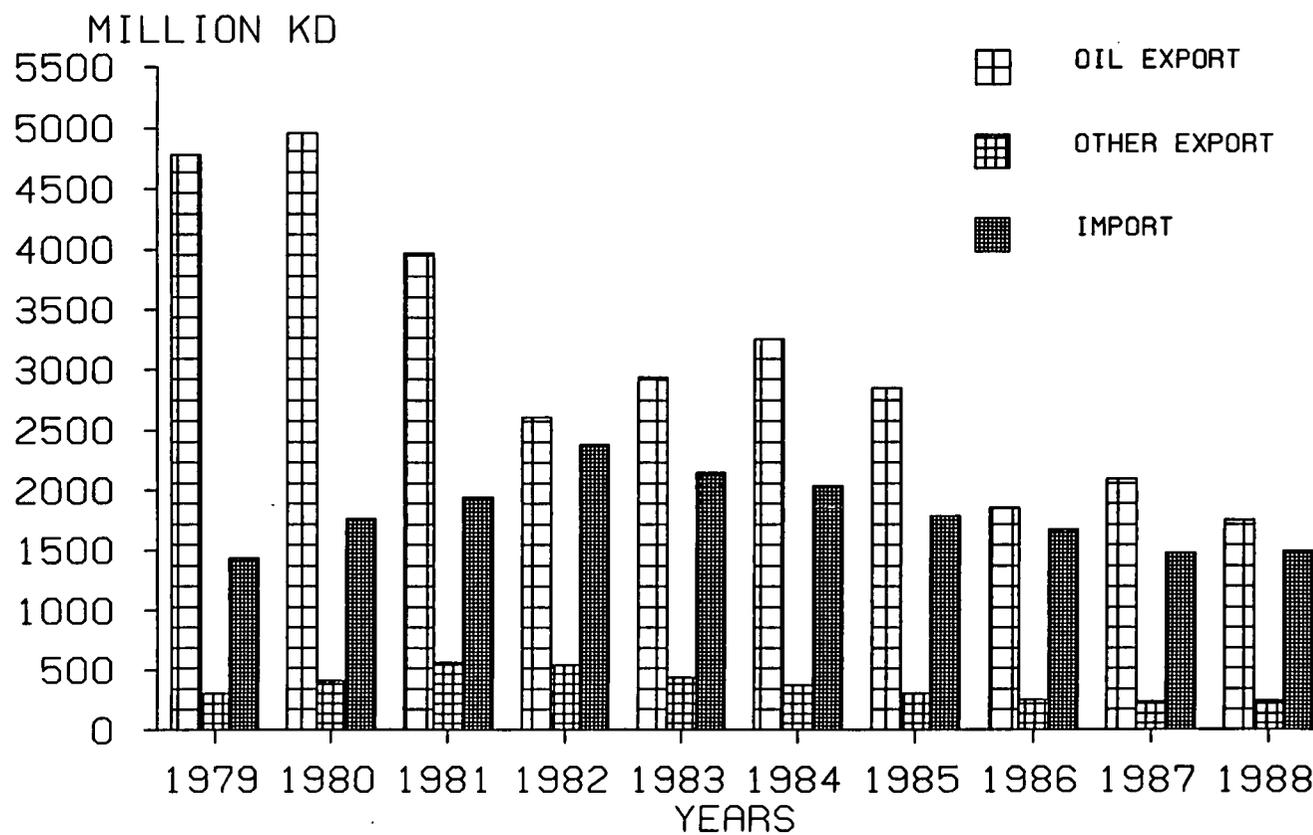


TABLE 2-9: Change in Wholesale Prices 1981 – 1988.

DIVISIONS	RATE OF CHANGE (%)
Manufacturing	10.6
Mining	-17.2
Agriculture & Fishing	-18.7

Source: Ministry of Planning, Central Statistical Office.
(*op. cit.*, p. 307.)

and 1982 and a decline of 6 per cent during the period 1982-88. In 1983 imports grew by 145 per cent over the figure in 1976, but in 1988 they declined by 37 per cent in comparison to 1982. In general however, Kuwait pursues a free trade policy and there are no restrictions on capital movement from or into the country.

2.5 INFLATION IN KUWAIT

In 1973 the Central Statistical Office started to publish figures for two different price indices. One related to the cost of living and the other to wholesale prices. Since 1980 it has published figures for four indices. Of these four the first two are similar to the cost of living and the wholesale price indices with some changes in the basis year and weights and divisions. The other two indices are new, one for the wholesale prices of commodities for end use and the other for wholesale prices of commodities distinguished by the stage of processing. For the purposes of the present study the first two indices will suffice.

2.5.1 Wholesale Price Index (WPI):

The wholesale price index has increased from 106.4 in 1981 to 116.17 in 1988, that is by 9.2 per cent. Table 2-9 gives the changes in the various sectors.

2.5.2 Consumer Price Index (CPI):

The CPI has increased from 107.1 in 1979 to 146.9 in 1988. This translates to an annual rate of 4.1 per cent. Table 2-10 lists the percentage changes in consumer prices of various commodities.

TABLE 2-10: Percentage Change in CPI.

(1979 - 1988)

COMMODITY DIVISIONS	PERCENTAGE CHANGE
Food	17.7
Beverages & Tobacco	65.5
Clothing & Footwear	35.3
Housing	55.1
Household	27.1
Transport	66.9
Education & Medical	65.2
Other Goods & Services	19.1

Source: Ministry of Planning, Central Statistical Office.

(*op. cit.*, p.306.)

2.6 CONCLUSION:

We have focussed in this chapter on different characteristics of the Kuwaiti economy. An attempt has been made to give an overview of the significant features in the areas of population, national income, oil exports, foreign trade and inflation.

It has been noticed that the revenue from the export of oil has declined significantly since 1980. In the population sector Kuwaitis find themselves outnumbered

in their own country and this will continue to be so in the foreseeable future. Much of this imbalance relates to the high rate of immigration. In the area of national income the figures on the GNP and the GDP, when corrected for inflation do not show an improvement in 1987 in comparison to the base year 1978. The consumer price index shows that prices increased by 37 per cent in the nine years from 1979 to 1988 which is a modest annual figure of 4.1 per cent.

Chapter III

THE FINANCIAL SECTOR

The financial sector in Kuwait is made up of banking institutions, investment companies, money exchanges, insurance companies and the stock market. In this chapter we will focus on the first four, while the stock market will be discussed in the following chapters. In the following we attempt a review of the major developments in the financial and the public finance sectors during the period 1976–1988.

3.1 THE BANKING SECTOR

Apart from the Central Bank of Kuwait, there are seven commercial banks operating in Kuwait. These are, the National Bank of Kuwait, the Commercial Bank, the Gulf Bank, the Al-Ahli Bank, the Bank of Kuwait and Middle East, the Burgan Bank and the Bank of Bahrain and Kuwait. The last is owned jointly and equally by Kuwait and Bahrain. In addition there are specialised institutions such as the Credit and Savings Bank, the Real Estate Bank, the Industrial Bank and the Kuwait Finance House.

3.1.1 Central Bank of Kuwait:

The Central Bank of Kuwait (CBK) was established on the 1st of April 1969 as a government corporation. Its general objectives were set out in a legislation in 1968 (Law 32). The role of the Central Bank of Kuwait is defined as ;

1. Issue of currency, maintenance of monetary stability and the convertibility of the currency.
2. Supervision of banking activities and the financial system.
3. Serving as banker to the government.
4. Furthering social and economic progress and the growth of national income.

Under the legislation, the management of the Central Bank of Kuwait was entrusted to a Board of Directors. The Board of Directors is composed of the Governor, who is the Chairman of the board, the Deputy Governor, a representative each from the ministries of Finance and Commerce, and four other members¹¹. In 1977 some articles of the legislation were amended by Law number 130 of 1977 following certain developments in the monetary sector. The 1977 amendments enhanced the role of the Central Bank of Kuwait in the economy, and gave it greater powers to control and direct the financial investment sector.

Initially in 1969, the capital and reserves of CBK were fixed at KD 5 million. These were increased to KD 30 million in 1982 and KD 184 million in 1988. The bank witnessed real growth in its operations during the period 1976-1988, with its assets rising by 260 per cent at the end of 1988 over their level in 1976.

To analyse CBK operations the identity for the balance sheet can be written as

$$FA+RP+LB+PD+OA = R+GD+CR+LD+OL,$$

where on the left hand side FA corresponds to foreign assets, RP stands for commercial papers rediscounted, LB means loans and deposits with local banks, PD denotes public debt instruments and OA other assets. Similarly on the right hand side, R is used in the above equation for the reserve money, GD for government deposits, CR stands for capital reserves and LD denotes local bank deposits with the CBK and finally OL stands for other liabilities including deposits against documentary evidence and accounts for international organizations. The growth in the operations of CBK is summarised below.

3.1.2 Assets:

Table 3-1 shows the main items on the assets side of the CBK balance sheet. As can be seen from this table, the total assets rose by 160 per cent during the 12 year period 1976-1988. The annual average rate of growth comes to 8.3 per cent. For the most part this growth was contributed to by the increase in foreign assets by 14.4 per cent per annum during the period 1976-86. In turn the increase in foreign assets during 1976-86 resulted from government purchases of the KD against the

¹¹ Central Bank of Kuwait, "Law No.32 of 1968 and Law No.130 of 1977", CBK Publications, 1977.

TABLE 3-1: CBK: ASSETS AND LIABILITIES

(million KD)

Assets/Liabilities	1976	1988	Annual Rate (%)
Assets			
Foreign Assets	548.5	399.4	-2.6
Commercial Papers Rediscounted	2.1	282.0	50.2
Public Debt Instruments	—	460.3	—
Other Assets	3.6	301.7	144.0
Total assets	554.2	1443.4	8.3
Liabilities			
Reserve Money	224.8	394.3	4.8
Government Accounts	270.8	672.4	7.8
Capital & Reserve	5.0	184.0	34.9
Local Bank Deposits	—	50.0	—
Other liabilities	53.6	142.7	8.4
Total liabilities	554.2	1443.4	8.3

Source: CBK, *Quarterly Statistical Bulletin*, Vol.3, No.4, Oct.-Dec., 1976, p.3 and Vol.15, No.4, Oct.-Dec. 1988, p.5.

US\$ to finance its expenditure and to increase foreign exchange transfers to the bank for participation in the IMF oil facilities. Foreign assets of the CBK consist of the reserve account with the IMF, gold and investments and deposits with foreign banks. In 1987 and 1988, the total of the foreign assets decreased by 33.7 per cent and 56.7 per cent respectively. Possible reasons for this decline are that the CBK transferred some of its foreign assets to the local economy. The CBK used a part of its foreign assets to finance its operations in the money market, mainly

**TABLE 3-2: Commercial Banks:
Assets and Liabilities**

(million KD)

Assets/Liabilities	1976	1988	Annual Rate (%)
Assets			
Foriegn Assets	674.9	2476.1	11.4
Claims on Private Sector	934.3	5658.0	16.1
Others	229.8	2268.0	21.0
Total assets	1839.0	10402.1	15.5
Liabilities			
Quasi-Money	826.5	4199.6	14.4
Foriegn Liabilities	324.1	1261.9	12.0
Own Funds	89.2	1031.6	22.5
Others	599.2	3909.0	16.8
Total liabilities	1839.0	10402.1	15.5

Source: CBK, *Quarterly Statistical Bulletin*, Vol.3, No.4, Oct.-Dec. 1976, p.6 and Vol.15, No.4, Oct.-Dec. 1988, p.9.

in government bonds and as deposits with local banks. The second major item in the assets side is government bonds, which formed 32 per cent of the total assets in 1988. The government decided to issue bonds to finance its budget deficit for the first time in 1987.

3.1.3 Liabilities:

On the liabilities side, reserve money increased to KD 394.3 million by the end of 1988 compared with KD 224.8 million in 1976. The annual rate of increase was

thus 4.8 per cent. The main items of reserve money were;

- i. The currency issued represented 93 per cent of the total reserve and its average annual increase during the period 1976-88 was 8.5 per cent.
- ii. The CBK bills used to be the second most important item in the reserve money. In 1987, in order to give more attention to government debt instruments the CBK stopped selling its bills. The banks' holding of CBK bills, and their balances with the CBK, had peaked by the end of 1982 at KD 488 million for CBK bills and KD 244 million for balances with the CBK.

Government accounts, the second largest item on the liabilities side, rose by 148 per cent by the end of 1988, an annual rate of 7.8 per cent.

3.2 COMMERCIAL BANKS

The British Bank of the Middle East which was established in 1942 was the first banking institution in Kuwait. The National Bank of Kuwait was the first locally owned bank. At present there are seven commercial banks with a total of 162 branches, three specialized banks and one Islamic bank. Except the Bank of Bahrain and Kuwait which is jointly owned by the states of Kuwait and Bahrain (with a 50 per cent stake each), all other banks are purely Kuwaiti institutions and share holding companies listed on the Kuwait stock exchange.

3.2.1 The Commercial Banks Balance Sheet:

During the period 1976-88, the banking activity of the commercial banks rose at an annual rate of 15.5 per cent. Table 3-2 shows that in 1988 the total assets of commercial banks had reached KD 10402.1 million. The three main items on the assets side in the balance sheet of the commercial banks are :

- i. Claims on the Private Sector; During the period under discussion the claims on the private sector increased by an average annual rate of 16 per cent. In absolute terms these were KD 5658 million at the end of 1988 as against KD 934 million in 1976.
- ii. Foreign Assets; The foreign assets of commercial banks rose by 11.4 per cent per annum during 1976-88. It is worth mentioning that the foreign assets of the

TABLE 3-3: Commercial Banks, Foreign Assets

(million KD)

YEAR	DEPOSITS WITH FOREIGN BANKS	CREDIT TO NON RESIDENTS	FOREIGN INVESTMENTS	TOTAL
1976	459.1	89.2	126.6	674.9
1977	626.3	81.2	115.7	823.2
1978	923.9	104.3	186.0	1214.2
1979	1028.9	203.3	175.3	1407.5
1980	1436.7	252.7	190.7	1880.1
1981	1738.5	305.9	201.1	2245.5
1982	1673.8	382.5	194.8	2251.1
1983	1505.0	491.0	305.1	2301.1
1984	1502.3	636.7	368.6	2507.6
1985	1366.9	571.9	290.8	2229.6
1986	1209.9	669.9	299.3	2179.1
1987	1298.7	650.7	332.5	2281.9
1988	1395.1	696.5	384.5	2476.1
Annual %.	9.7	18.6	9.7	11.4

Source: CBK, *Quarterly Statistical Bulletin*, Vol.7, No.3, Jul.-Sept., 1980, p.17 ; Vol.10, No.2, Apr.-Jun. 1983, p.16 and Vol.15, No.4, Oct.-Dec. 1988, p.10.

commercial banks peaked in 1984 and the relevant details are shown in Table 3-3. Also shown in Table 3-3 is the growth in deposits with foreign banks, which occurred at an annual rate of 9.7 per cent during 1976-88. These

TABLE 3-4: Some Indicators for Commercial Banks

(million KD)

-	1976	1988	%
Net Profit	13.1	59.8	356
Av. E.P.S.	7.3	16.2	122
Total Assets	2002	10401	420
Av. Loans/Deposits	68.9	59.00	-14.4

Source: Kuwait Stock Exchange,
Statistical Bulletin, 1988, pp. 3-4.

deposits were at a maximum in 1982 (KD 1674 million) and then declined during 1983-88 by 1.5 per cent annually. During the same period the credit facilities available to non-residents expanded by 18.6 per cent per annum. The third object in foreign assets, foreign investments also grew by 9.7 per cent annually.

iii. Other Assets; Other assets of the commercial banks were 15 times greater at the end of 1988 as compared to their value in 1976. Over the period 1976-88 the annual rate of increase works out to 26 per cent. Other assets held peaked in 1983.

On the liabilities side, the annual growth in the balance represented an annual increase in quasi-money, other liabilities, foreign liabilities, and own funds by 14.4, 16.8, 12 and 22.5 per cent respectively. Other indicators from the balance sheet of the commercial banks are analysed in Table 3-4.

3.2.2 Commercial Banks—Domestic Activity:

As can be seen from Table 3-5, personal facilities have become the major beneficiary of bank credits since 1981. In comparison trade was the main beneficiary during 1976-86. In 1976 the credit extended for personal purposes amounted to

KD 171 million. This increased by an annual average rate of 18.7 per cent to reach KD 1346.7 million at the end of 1988, and accounts for 28.7 per cent of the total domestic credit facilities for that year. The personal facilities sector grew at a very rapid rate during the period 1979-82 with an annual growth rate of 24.2 per cent. These increases can be explained on the basis of the fact that some traders used personal loans to finance their deals in the stock market during the Al-Manakh period. As mentioned earlier in the discussion of the importance of the foreign trade sector in the Kuwaiti economy, the trade sector is the second most important sector in the commercial credit activity. The credit facilities in this sector had increased by an average annual rate of 10.5 per cent by the end of 1988 in comparison to 1976 and amounted to KD 976.2 million in 1988 against KD 292.4 million in 1976. The third major sector in the domestic activity is that of real estate. It used up 19.4 per cent of the total credit facilities in 1988. For the period 1976-88, the annual average growth in the credits for real estate stands at 15 per cent. The credit granted to the non-productive sectors, such as personal and trade credit, exceeded the amount forwarded to the productive sector, such as industrial and agricultural credit. The figures indicate a high level of expenditure for purposes of consumption.

3.3 SPECIALIZED BANKS

There are three specialized banks operating in Kuwait. The Credit and Savings Bank was founded in 1961 and finances property investment with long term, low interest loans. The Kuwait Real Estate Bank and the Industrial Bank of Kuwait were established in 1973 and 1974 respectively. These two provide medium and long term financing services to the housing, industrial, agricultural and real estate sectors. The specialized banks also contribute towards the development and promotion of capital and money markets, and towards the creation of market tools such as CD's (CBK, Economic Report 1979). To analyse the specialized banks' operations during the period 1976-88 it is useful to look at both sides of their balance sheet as follows:

3.3.1 Assets:

The total assets of the specialized banks had increased to KD 2061.1 million

TABLE 3-5: Credits Extended by Commercial Banks

(million KD)

YEAR	T	I	C	AF	F	P	R	O	TOTAL
1976	292.4	37.2	166.7	14.3	167.6	171.1	-	-	849.3
1977	375.6	49.4	199.4	20.0	69.9	212.6	123.6	22.0	1072.5
1978	400.2	66.3	254.4	25.1	92.3	319.7	180.7	35.8	1374.5
1979	523.5	91.3	332.3	30.6	120.9	520.1	254.3	44.5	1917.5
1980	671.8	159.2	408.0	39.9	142.8	620.7	306.6	69.6	2418.6
1981	843.2	174.3	523.2	40.2	236.0	890.3	371.2	94.5	3172.9
1982	955.3	193.6	673.4	43.0	269.9	1000.5	614.5	147.0	3897.3
1983	948.8	148.2	664.2	25.7	314.1	934.5	683.4	125.4	3844.3
1984	987.7	144.9	683.2	23.8	360.6	1040.4	742.8	125.4	4108.8
1985	932.8	122.2	680.0	21.8	360.9	1188.3	768.6	123.9	4198.5
1986	920.2	106.4	701.1	15.4	371.4	1271.5	816.5	127.6	4330.1
1987	962.1	140.3	784.7	11.8	465.5	1295.3	838.1	127.7	4625.5
1988	967.2	136.1	813.7	12.3	362.0	1346.7	912.4	146.5	4696.9

[T: Trade, I: Industry, C: Construction, AF: Agriculture and Fisheries, F: Financial Institutions, P: Personal Facilities, R: Real Estate, O: Other.]

Source: CBK, *Quarterly Statistical Bulletin*, Vol.17, No.3, Jul.-Sept. 1980, p.19 ; Vol.10, No.2, Apr.-Jun. 1983, p.9 and Vol.15, No.4, Oct.-Dec. 1988, p.12.

by the end of 1988, at an average annual rate of 13 per cent from KD 473.2 million in 1976. The credit facilities to residents accounted for 69 per cent of the total assets in 1988 after growing at an average rate of 18.2 per cent per annum over the period 1976-88. The other two major items on the assets side are the deposits

TABLE 3-6: Specialised Banks: Assets and Liabilities

(million KD)

Assets/Liabilities	1976	1988	Annual Rate (%)
Assets			
Credit to residents	188.9	1417.5	18.2
Foriegn assets	142.3	256.4	5.0
Deposits with local banks	78.3	223.4	9.1
Others	63.7	163.8	8.2
Total assets	473.2	2061.1	13.0
Liabilities			
Own funds	133.4	1068.0	18.8
Government deposits	47.7	222.3	13.6
Private deposits	75.9	183.6	7.6
Foriegn deposits	58.4	165.5	9.0
Others	157.8	421.7	8.5
Total liabilities	473.2	2061.1	13.0

Source: CBK, *Quarterly Statistical Bulletin*, Vol.10, No.2, Apr.-Jun. 1983,p.22 and Vol.15, No.4, Oct.-Dec. 1988, p.14.

with local banks and foriegn assets. In 1988 these accounted for 11 and 12.4 per cent of the assets respectively. The deposits with local banks grew at 9 per cent per annum over the period 1976-88, while the corresponding rate was 5 per cent per annum for foriegn assets.

3.3.2 Liabilities:

During the period 1976-88 the banks' own funds (capital and reserve) rep-

resented an average of 52 per cent of the total liabilities. The growth in these banks' self-resources was due to the successive increases in the paid-up capital of the Credit and Savings Bank from KD 320 million in 1980 to KD 500 million in 1981 and KD 1200 million in 1988. The government deposits increased to KD 222.3 million, at an average annual rate of 13.6 per cent, and at the end of 1988 accounted for 11 per cent of the total liabilities.

3.4 INVESTMENT COMPANIES

At present there are twenty two companies operating in Kuwait which are subject to CBK supervision. After the Al-Manakh crisis of 1982 the government discovered that some of these companies were involved in the Al-Manakh market. As a result of their unofficial and illegal activity in the Al-Manakh market, most of these companies have had difficulties in their respective budgets. On January 8, 1987, the Minister of Finance issued a directive regulating CBK supervision over the investment companies. This directive gave the CBK more powers to control the activities of such companies.

3.5 MONEY-CHANGING COMPANIES

At the end of 1988 there were about thirty nine money-changing companies in Kuwait. Until 1984, such companies were operating outside the control of the CBK. In March 1984, a directive was issued by the Minister of Finance which subjected money-changing companies to CBK supervision. At the end of 1987, as reported in the CBK economic report for that year, the aggregate balance held by money-changing companies was KD 78 million. On the liabilities side, local funds represented more than a half (51.7 per cent) of the funds obtained by these companies from their own sources. On the assets side, the local assets accounted for 66.9 per cent of the total assets and 63 per cent of local assets related to claims on banks and other financial institutions.

3.6 INSURANCE COMPANIES

By the end of 1987 there were nineteen insurance companies working in Kuwait. Four of these were 100 per cent Kuwaiti owned and the others were branches of

TABLE 3-7: Insurance Companies (1987)

(thousand KD)

	KUWAIT	GULF	AL-AHLEAI	WARBA	TOTAL
Established	1960	1962	1962	1976	
Issued Capital	16000	11310	7228	5230	39768
Net Profit	5778	1425	1953	1587	10743
Return on Assets (%)	7.4	3.4	5.4	9.5	6.4

Source: Kuwait Stock Exchange.
Statistical Bulletin, 1988, p.98.

foreign companies. The four Kuwaiti companies are share holding companies listed on the stock market. Table 3-7 shows the main indicators for these companies.

3.7 MONETARY INDICATORS

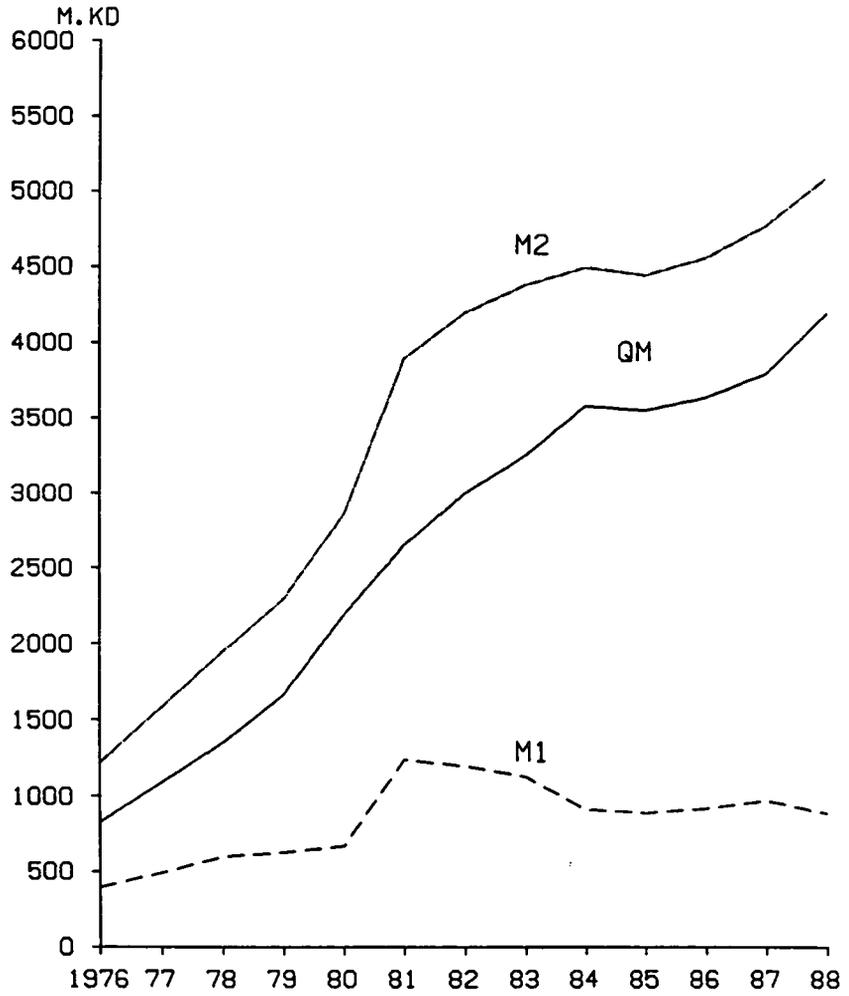
3.7.1 Money-(M1):

M1 in Kuwait consists of currency and sight deposits. Figure 3.A shows that M1 rose sharply in 1981, by 85 per cent as compared with 1980. A possible explanation is provided by the increase in government expenditure by 33 per cent and 20 per cent respectively in the fiscal years 1979/80 and 1980/81. As mentioned in Chapter II, oil production increased in 1979 by 17 per cent. Over the period 1976-88 M1 increased at an average annual rate of 7 per cent.

3.7.2 Money Supply-(M2):

M2 in Kuwait comprises M1 plus quasi-money. Figure 3.A also shows the changes in M2 during 1976-88. The money supply reached KD 5092 million in 1988, compared with KD 1220 million in 1976. These figures give an average annual rate of increase as 12.6 per cent. The factors affecting changes in money

FIG 3.A MONEY SUPPLY 1976-1988



SOURCE; Central Bank of Kuwait

supply in Kuwait are;

- i. Changes in the foreign assets of the CBK and the commercial banks (ΔFA).
- ii. Changes in domestic assets (ΔDA) which contain
 - 1- Claims on the private sector (ΔCP).
 - 2- Claims on government (ΔCG).
 - 3- Government deposits (ΔGD).
 - 4- Other factors (Net) (ΔON).

The relationship between the factors given above and the change in money supply ($\Delta M2$) is given by

$$\Delta M2 = \Delta FA + \Delta DA$$

with

$$\Delta DA = \Delta CP + \Delta CG + \Delta GD + \Delta ON,$$

and the figures for the period 1976-1988 are exhibited in Table 3-8.

If the CBK wants to control the money supply it must control the various components mentioned above.

3.7.3 Monetary Base:

The definition of monetary base in Kuwait can be given as

$$B = R + C,$$

where

B : Monetary Base

R : Reserve Money

C : Currency in Circulation

**TABLE 3-8: Factors Affecting Changes in Money Supply During
1976-88**

(million KD)

YEAR	$\Delta M2$	ΔFA	ΔCP	ΔCG	ΔGD	ΔON
1976	329.1	-34.4	427.6	-	17.0	-81.1
1977	363.0	321.1	304.2	-	-98.2	-164.1
1978	367.0	93.0	320.9	-	65.9	-112.8
1979	339.4	103.0	559.0	-	-211.9	-111.6
1980	567.8	410.2	552.1	-	-247.6	-146.9
1981	1010.3	310.4	782.2	-	57.0	-130.3
1982	315.0	299.4	838.9	-	-307.6	-515.6
1983	184.0	-324.2	460.2	-	151.1	-102.8
1984	114.5	167.5	292.7	-	-200.7	-145.0
1985	-48.7	101.4	22.5	-	-4.2	-168.4
1986	113.6	105.5	88.3	-	430.3	-510.5
1987	212.2	-360.9	317.1	536.9	56.8	-337.7
1988	317.8	-376.3	184.8	820.9	-257.0	-54.6

Source: CBK, *Quarterly Statistical Bulletin*, Vol.7, No.2, Apr.-Jun. 1980, p.10 ; Vol.10, No.2, Apr.-Jun. 1983, p.8 and Vol.15, No.4, Oct.-Dec. 1988, p.4.

One can further write the variable R as

$$R = CH + CB + LB,$$

with CH standing for cash with commercial banks, CB meaning CBK bills and LB denoting local banks' balances with the CBK.

TABLE 3-9: Monetary Indicators

(million KD)

YEAR	M1	M2	B	m1	m2
1976	393.7	1220.3	221.4	1.8	5.51
1977	490.7	1583.3	421.9	1.2	3.75
1978	599.1	1950.4	318.8	1.9	6.11
1979	625.9	2289.8	379.2	1.7	6.04
1980	669.7	2857.5	506.2	1.3	5.65
1981	1241.6	3867.8	679.3	1.8	5.69
1982	1199.7	4178.0	1097.3	1.1	3.81
1983	1128.2	4382.4	841.1	1.3	5.21
1984	913.9	4496.9	744.0	1.2	6.04
1985	893.6	4448.2	729.6	1.2	6.09
1986	921.9	4561.8	667.8	1.4	6.83
1987	975.9	4774.0	547.5	1.8	8.72
1988	892.1	5091.8	394.4	2.3	12.91
Annual %	7	12.6	4.9	2.1	7.3

Source: CBK, *Quarterly Statistical Bulletin*, Vol.7, No.2, Apr.-Jun. 1980, p.9 ; Vol.10, No.2, Apr.-Jun. 1983, p.7 and Vol.15, No.4, Oct.-Dec. 1988, p.3. (author's calculations).

The monetary base in Kuwait was at its maximum in 1982 at KD 1097 million. Table 3-9 shows the variation in the monetary base during the period 1976-88. Over this period the annual average rate of growth for the monetary base was 4.9 per cent.

3.7.4 Money Multiplier:

Table 3-9 also shows the money multiplier in Kuwait according to both definitions of M1 and M2. Regarding the data shown in the table the multipliers reached the values 2.3 and 12.91 respectively in 1988. In order to demonstrate how the CBK can affect the money supply through the money multiplier we derive the money supply model with depositor behaviour in Kuwait.

Recall that the M1 definition for Kuwait can be written as,

$$M1 = C + S, \quad (3.1)$$

where C is the currency in circulation and S is the sight deposit. Further for the monetary base B we have

$$B = R + C, \quad (3.2)$$

where R is the reserve money. We assume that the reserve money is a ratio (r) of the

- (1) Sight Deposits (S)
- (2) Time Deposits (T), which include savings deposits and savings syndicates.
- (3) Government Deposits (G).

We are now in a position to write the equations that link reserves in the banking system to the amount of sight deposits, time deposits and government deposits,

$$R = r(S + T + G). \quad (3.3)$$

The relation between time deposits and sight deposits is a proportional one and we can write $T = tS$ or

$$t = \frac{T}{S} \quad (3.4).$$

Similarly we can define for government deposits the ratio

$$g = \frac{G}{S}. \quad (3.5)$$

In order to derive the formula for the money multiplier in terms of the depositor ratio, we rewrite equation (3.3) as¹²

$$B = r(S + tS + gS) + C. \quad (3.6)$$

We can also define the currency in circulation as a ratio of the deposits and write

$$C = kS, \quad (3.7)$$

and equation (3.6) then becomes

$$B = S[r(1 + t + g) + k]. \quad (3.8)$$

Thus for the sight deposits S we can write

$$S = \frac{B}{r(1 + t + g)} \quad (3.9)$$

Using the above in equation (3.1) for the M1 we get

$$M1 = B \frac{1 + K}{r(1 + t + g) + K} \quad (3.10)$$

Thus finally the formula for the multiplier in Kuwait is¹³

$$m = \frac{1 + K}{r(1 + t + g) + K}$$

Thus the Central Bank of Kuwait can employ the multiplier as a means of influencing money supply in the country. To do so, the Central Bank manipulates the multiplier components in order to influence the money supply. Also the above formula shows that the money multiplier is negatively related to $r(1 + t + g)$.

¹² See Mishkin, "Money, Banking and Financial Markets", Canada: Little, Brown and Company, 1986, pp.261-268.

¹³ Mansoor, "Monetary Development in Kuwait 1962-1977", (in arabic), Ministry of Finance Bulletin, No.2, 1978 ,p.492.

3.8 MONETARY INSTRUMENTS

Since the CBK was established in 1969, the monetary policy in Kuwait has undergone several changes. During the past twenty years the CBK has tried to play a role in influencing the monetary, financial and economic developments in the country. The CBK has tried to use its own experience in an attempt to develop a number of monetary instruments. Some of these instruments are adopted while others are devised. In the following we summarise the development of monetary instruments in Kuwait.

3.8.1 Moral Suasion Instrument:

At the initial stages of the CBK operations, moral suasion was useful as a monetary instrument. The local banks were encouraged to carry out banking and credit operations on a sound basis and in accordance with the general interest of the national economy. To efficiently administer its policies the CBK held regular meetings with the local banks and outlined the scheme¹⁴. The structure of the banking system, which at the start of CBK operations was composed of a limited number of national institutions, made it easy for the CBK to implement its policies through this instrument. However expansion of the banking sector over the years has rendered this instrument inadequate.

3.8.2 Lending to Banks When Necessary:

In regards with the basic theory of money and banking, a principle purpose of any central bank is to serve as a lender of last resort to the financial system. As stated in the CBK report of 1979, "lending policy is intended to mean the policy which the CBK follows in respect of the discount and rediscount of commercial papers, and the policy it follows in connection with the provision of loans to banks". This instrument can be used by the CBK to effect the level of borrowed reserves and, therefore, the monetary base. Other instruments used earlier by the CBK to act as a lender of last resort were;

- (1) Opening an Account with the Banks: CBK used this instrument in 1974, when the commercial banks faced shortages in their balances. It was also used by

¹⁴ CBK, Economic Report, 1979.

TABLE 3-10: Discount Rate Changes and Maturity Periods

DATE	3 MONTHS %	6 MONTHS %	9 MONTHS %	12 MONTHS %
Feb. 1975	5.5	-	-	-
Oct. 1977	5.5	6.0	6.26	6.50
Apr. 1979	6.0	6.25	6.50	6.75
Mar. 1987	5.5	5.5	5.5	5.5
Nov. 1987	5.0	5.0	5.0	5.0
Dec. 1988	7.5	7.5	7.5	7.5

Source: CBK, Economic Report (several issues).

the CBK in 1987, when the CBK created a fund to support local banks under the settlement programme.

- (2) Discount Window: In 1975, the CBK established the system of discounting and rediscounting commercial papers. This system was intended to assist banks to overcome the shortage of KD funds. Table 3-10 shows more details about changes in the discount rate over the years. It is clear from Table 3-10 that the CBK cancelled the multiple discount rate as paper maturities and unified their rates in 1987.

In evaluating this instrument Moosa argued that the CBK had not used it for the purpose of short-term stabilization through monetary control. He said that "it has just been used as a tool to counter any liquidity shortage and boost the banks' ability to grant credits¹⁵". This point of view holds well for the period 1974-86. In 1987 the CBK started to give greater attention to it¹⁶. As a result the CBK had

¹⁵ Moosa, " A Study of Kuwait's Monetary Sector ", Unpublished Ph.D. Thesis, University of Sheffield, 1986.p.185

¹⁶ The Moosa study covers the period 1970-86.

to change the discount rate twice during 1987.

- (3) **Opening Interest Bearing Deposit Accounts For Banks:** This instrument was used by the CBK in 1973 after the international monetary system experienced the shocks from the collapse of the Bretton Woods system. The commercial banks approached the CBK requesting the opening of interest bearing deposit accounts with it. The CBK agreed in accordance with article 40 of the CBK law; Interest Bearing Deposit Accounts with the CBK for Banks. CBK paid the banks on their deposits an interest rate which was 0.5 per cent over the rate paid to savings account holders. In April 1979, the CBK cancelled this instrument and introduced its own negotiable bills to replace the system of Bank Deposit Accounts.

3.8.3 Liquidity System:

In April 1979, the CBK created a liquidity system requiring the banks to maintain 25 per cent of their holdings of deposits and their liabilities with the CBK in the form of liquid assets, provided that the ratio of KD liquid was not less than 7.5 per cent of the total liquid assets¹⁷. Earlier in August 1975, CBK had introduced an amendment whereby the total claims on banks (on demand and for one month) were to be considered among liquid assets. In 1978 CBK created a new liquidity system taking into consideration the structural developments in the inter-bank operations in Kuwait. Under this system the 25 per cent mentioned above could be replaced by different ratios. This system can be summarised as follows.

- (a) The banks should maintain the minimum limit of liquid assets held against one or more of the following assets;
- i. Liquid assets.
 - ii. Balance of current account with CBK.
 - iii. Balance with other banks.
 - iv. KD bills and time deposits with CBK.

¹⁷ CBK Economic Report, 1979.

(b) For other types of deposits the liquid assets can be held under one or more of the following assets;

- i. CD's issued by other banks with maturity of three months or less.
- ii. Deposits with other banks with maturity of one month or less.
- iii. Treasury bills payable within three months.
- iv. Banks acceptances payable within one month.

The system also required that the liquid assets in KD should not be less than one third of the total liquid assets. The main advantage of the liquidity system is to provide a basis for control from both the monetary and supervisory aspects. In June 1980, CBK decided that local banks should maintain a specific minimum ratio of 3 per cent of their deposits of total cash assets or balances with the CBK or in CBK bills. CBK's point of view, put forward in the CBK Economic Report of 1984, was that the reserve ratio would boost its ability to regulate the liquidity within the banking system. Moosa argued that the reserve ratio, the most important instrument of monetary control in the least developed countries (LDC's), has not been used in Kuwait effectively since its introduction in June 1980. Another interesting point of view was put forward by Mishkin (1986) when he said, "... the fact that changing reserve requirements are a powerful tool is probably more of a curse than a blessing because small changes in the money supply would be hard to engineer by varying reserve requirements..."¹⁸. It is true that small changes in the money supply could produce extremely small changes in reserve requirements, but because it is so expensive to administer changes in reserve requirements, such a strategy is not practical. Mishkin also states that "... there is another disadvantage of using reserve requirements to control the money supply which is that raising them can cause immediate liquidity problems for a bank with low excess reserves"¹⁹. Finally Mishkin does not recommend changing reserve requirements as a good tool. It seems to be that the differentiation between these arguments depends upon the individual viewpoint. As an example Moosa's recommendation

¹⁸ Mishkin, op. cit., p.371.

¹⁹ Mishkin, op. cit., p.371

was primarily in the context of LDC's, while Mishkin's argument was from the point of view of the industrialised countries, mainly the USA.

3.8.4 Swap Operations:

In 1978, the CBK started its swap operation with the local banks. This system helps banks to increase their KD balance when they face a shortage in their KD liquidity. In April 1985 the CBK stopped using this system.

3.8.5 CBK Bills:

CBK first issued its bills in 1979, and these bills played an important role in the monetary system during the period 1979-86. In 1987 the CBK issued public debt instruments on behalf of the Ministry of Finance. This was done under law number 50 of 1987, authorizing the government to borrow from the public, for a period of not more than ten years, by issuing treasury bills and bonds. The CBK has since then stopped issuing bills in order to encourage the commercial banks to use the public debt instruments.

3.8.6 Interest Rate:

Briefly, the interest rate policy may be defined as any official action designed to influence the level and structure of money rates of interest²⁰. A very interesting evaluation of the interest rate policy in Kuwait was done by Moosa in 1989²¹. He states " ..official action may take the form of statutory ceilings, statutory or voluntary interbank agreement operations on deposit and loan rates, open market operations and bank rate changes, and the subsidizing or regulation of specific rates. Since 1961, the structure and policy of interest rates in Kuwait have experienced all of these forms of official action."

In December 1969, the banks agreed informally on interest payable on deposits and loans within a 7 per cent ceiling set by the commercial law in 1961. This agreement remained in force until 1976, when the interest rate structure came under the jurisdiction of the CBK. In February 1977 the CBK set a new interest

²⁰ Chandavarkar, "Money and Monetary Policy in Less Developed Countries", Coats and Khakhate (Eds.), Oxford: Permagon Press, 1971, p.498.

²¹ Moosa, 'Kuwait interest rate policy', Arab Banker, Vol.IX, No. 2, March/April 1989, p.28.

rate of 10 per cent per annum. Other ceilings for interest on loans advanced by banks, financial and investment institutions were prescribed as follows;

1. 7 per cent per annum on secured loans.
2. 8.5 per cent per annum on unsecured loans.

In March 1987 the CBK lowered the interest rate to 7.5 per cent per annum. A further change to the structure of interest rates pegged deposit and loan rates to the discount rate of 7.5 per cent.

3.8.7 Exchange Rate:

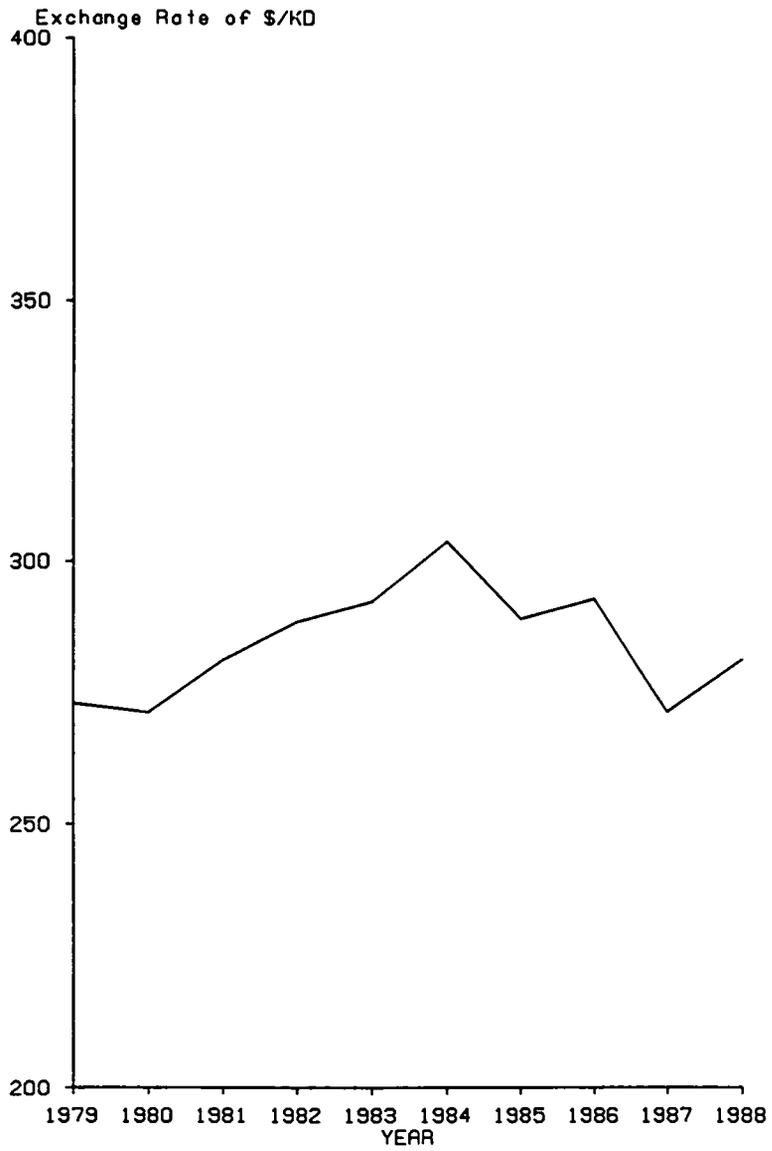
During the period 1961-67 the Kuwaiti Dinar was pegged to Pound Sterling. However subsequent to the devaluation of the Pound in 1967 it was effectively linked to the US Dollar even though it was revalued in terms of the latter in 1971 and 1973. It continued to be linked to the US Dollar until 1975 and throughout the CBK observed the 2.25 per cent margin recommended by the International Monetary Fund (IMF)²². Since 1975 the exchange rate of the Kuwaiti Dinar has been determined according to the performance of a basket of currencies whose components are not publicly known. Figure 3.B shows the trend of the \$ /KD exchange rate.

3.8.8 Public Debt Instruments:

In 1987, the government of Kuwait approved for the first time in Kuwait, the issue of public debt instruments (treasury bonds and bills). Under Law Decree number 50 of 1987, the government was given the authority to issue public instruments to cover the deficits in its budget. The public debt was to be limited to KD 1400 million, and the maturity period could not exceed ten years. In 1989, this law was amended by Law number 13 of 1989, which increased the limit value of public debt instruments to KD 3000 million. In 1987, CBK on behalf of the Ministry of Finance, issued these instruments. By issuing public debt instruments the CBK has gained a very important tool affecting the money market. Table 3-11 shows the updating data of the public debt instruments.

²² Khouja and Sadler, *op. cit.*, 1978, p.183.

FIGURE 3.b . Exchange Rate of \$/KD



Source: Central Bank of Kuwait

TABLE 3-11: Public Debt Instruments

(8 March 1987 – 22 March 1989)
(thousand KD)

	Treasury Bonds	Treasury Bills	Total
No. of Issues	11	44	55
Value of Issues	687010	4093000	4780010
Value of Redemption	142500	3243000	3385500
Net	544510	850000	1394510

Source: CBK.

The public debt instruments cover maturities ranging between three months and several years. It is worth mentioning here that the debt instruments provide the banking and financial institutions and the private sector a guaranteed investment asset. The holdings of the CBK of debt instruments increased substantially during the period 1987-88, and the CBK was an active buyer and seller of debt instruments in the secondary market. Table 3-12 shows the main developments of the public debt instruments in Kuwait during 1987-89.

Table 3-12 also shows that the commercial banks accounted for 58.3 per cent of the total of the debt instruments. CBK's own holdings of public debt instruments amounted to KD 1472 million or 30.8 per cent of the total.

3.9 PUBLIC FINANCE

As mentioned earlier, oil revenue is the major source of income in the national budget. As a result the rate of development is highly dependent upon the growth of oil revenues. The Kuwait government plays an important role in developing the country by using the oil revenue through its expenditure. The major areas in the

TABLE 3-12: Public Debt Instruments

(March 1987 – March 1989)

(thousand KD)

BUYER	TREASURY BILLS VALUE	%	TREASURY BONDS VALUE	%	TOTAL	%
LB	2444050	59.7	341411	49.7	2785461	58.3
IC	121250	2.9	35260	5.1	156510	3.3
PS	179400	4.4	117372	17.1	296772	6.2
CBK	1279300	31.2	192967	28.1	1472267	30.8
KIA	69000	1.7	-	-	69000	1.4
Total	4093000	100.0	687010	100.0	4780010	100.0

[LB: Local Banks, IC: Investment Companies, PS: Private Sector,
CBK: Central Bank of Kuwait, KIA: Kuwait Investment Authority.]

Source: CBK.

Kuwaiti budget can be analysed as follows.

3.9.1 Public Revenues:

Public revenues in Kuwait can be divided into two main items

- a. Oil Revenues; Oil is the major resource for the Kuwait government. Income from oil accounted for 85.7 – 97 per cent of the total revenues during the period 1976-88. This high percentage reflects the importance of oil to the Kuwaiti government and people. As a consequence of the fluctuation in the price of oil in the international market, the revenues available have also fluctuated. Table 3-13 gives more detail of the oil resources available to the Kuwaiti government. This table shows that in the fiscal year 1979/80, oil revenues reached a peak of about KD 5940 million. This peak is related to the 105 per cent rise in the

TABLE 3-13: Public Revenues and Expenditure

(million KD)

FISCAL YEAR	OIL REV.	%	OTHER REV.	TOTAL	EXPENDITURE	BALANCE
1977/78	2575.3	95.0	133.9	2709.2	1655.2	1054.0
1978/79	3036.1	95.6	140.2	3176.3	1681.8	1494.5
1979/80	5940.5	97.5	147.5	6088.0	2192.4	3895.6
1980/81	4434.2	95.2	225.1	4659.3	2629.6	2029.7
1981/82	2764.1	91.9	244.4	3008.5	2813.8	194.7
1982/83	2334.6	89.7	267.4	2602.0	3248.3	-646.3
1983/84	2923.4	92.1	251.9	3175.4	3023.9	151.5
1984/85	2493.7	90.8	250.9	2744.6	3205.0	-460.4
1985/86	2094.7	89.3	250.4	2345.1	3105.9	-760.8
1986/87	1483.9	85.7	247.0	1730.9	2860.1	-1129.2
1987/88	1991.4	88.4	260.3	2251.7	2806.0	-554.3

[The fiscal year runs from 1st July to 30th June.]

Source: CBK, *Quarterly Statistical Bulletin*, Vol.10, No.2, 1983, p.32 and Vol.15, No.4, 1988, p.24.

price of oil in 1979. Coupled to this the oil production of Kuwait also rose by 17 per cent (see also Chapter II). After the oil glut in the world market, the prices crashed and also the production of oil in the OPEC countries was reduced. Consequently the oil revenue in Kuwait fell by 38 per cent in fiscal 1981/82 and by 16 per cent in 1982/83. In fiscal 1983/84 the revenues increased slightly by 3 per cent, but fell again by 15 per cent in fiscal 1984/85. During the period 1985-88 the income from oil has been falling at an annual rate of

5.4 per cent (see Figure 3.C).

- b. Other Revenues; These include entry and registration charges, fee on international trade and transactions and charges or fee on government services. It is worth mentioning here that the Kuwaiti government has no system of tax and thus no income from tax. It is imperative that the government establish a tax system at the earliest. The main reason for this recommendation is that the government cannot sustain national development by sole reliance on oil revenue which fluctuates in value . During the period 1976-88 the non oil revenues accounted for between 2.5 to 11.6 per cent of the national income (See Table 3-13).

3.9.2 Public Expenditure:

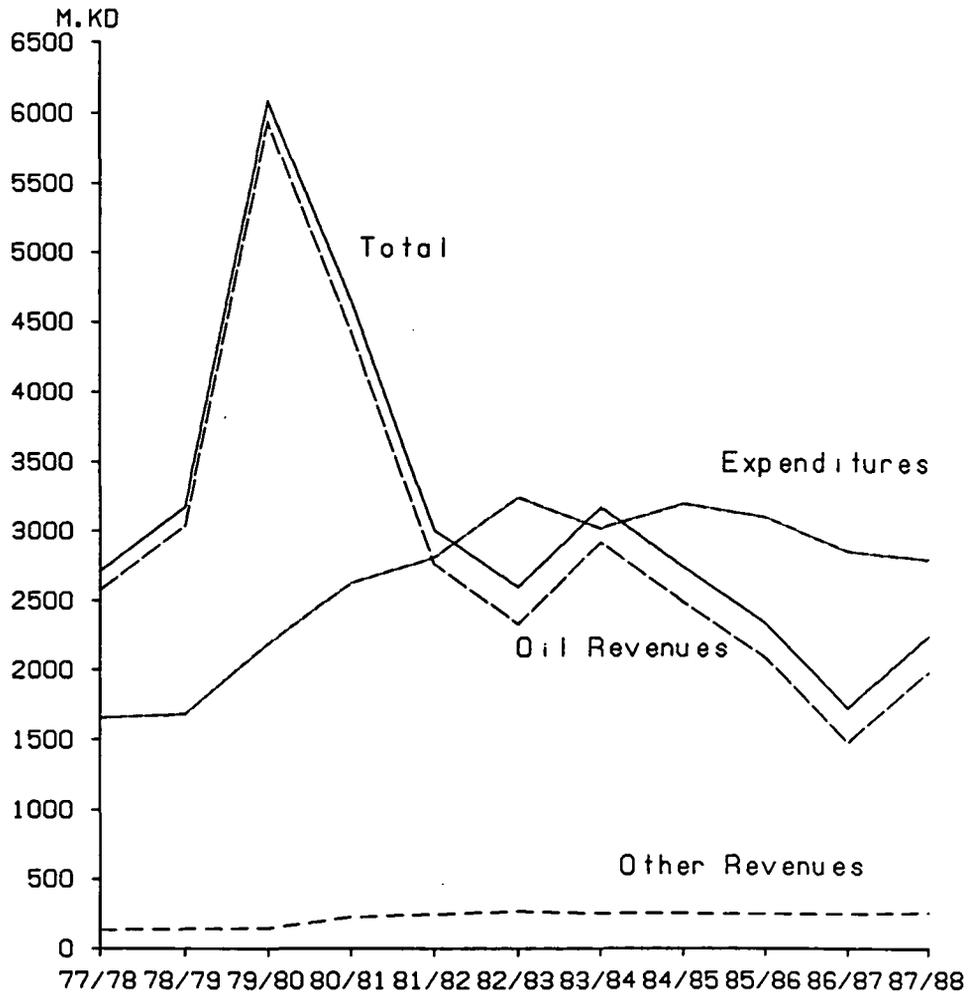
Table 3-13 shows that the public expenditure increased by 31 per cent in the fiscal year 1979/80 against 1978/79 and continued to increase, reaching KD 3248.3 million in fiscal 1982/83 and KD 3205 million in 1983/84. In fiscal 1985/86 government expenditure declined by 3 per cent. It further decreased by 8 per cent in 1986/87 and 1.9 per cent in fiscal 1987/88. The main reason being the cutdown in government programmes as a direct result of the fall in oil prices. The government has attempted to cut the accelerating rate of public expenditure through rationalization policies and adoption of cost related budget programmes based on objectives and importance to the domestic economy.

3.9.3 Revenue Funds:

It is useful here to give a brief summary of other resources for the Kuwaiti government. These resources are however kept away from the government expenditures. These are;

- a. State General Reserve Fund (GRF); This fund was established at a time when the government budget showed a surplus. Owing to the growth of surplus funds the reserve fund account has grown substantially during the period 1976-88. This fund consists of government investment in the local economy through its participation in local companies. It is worth mentioning here that the government has used some of the GRF money to inject capital into the local

FIG 3.C PUBLIC REVENUES and EXPENDITURES 1977-88



SOURCE: CBK, Quarterly Statistical Bulletin, Vol. 10, No. 2, 1983 & Vol. 15, No. 4, 1988.

economy. For example the government used a part of this fund to buy shares in the stock market in 1983 and 1984 (after the Al-Manakh crisis). In 1986 the government drew from this fund to cover the deficit in the budget.

- b. Reserve Fund For Future Generations (RFFG); This fund was established in 1976. A total amount of KD 5345.8 million was transferred from the State General Fund to this fund. The main purpose of this fund is to keep some money and invest it for future generations. Further 10 per cent of the State General Reserve should annually be added to this fund and no outlays are to be made from the fund. The fund money is invested by the Kuwait Investment Authority. The policy of the Kuwait Investment Authority has been to invest in the United States, British and Japanese markets, and mainly in assets of relatively secure high returns. The investments are usually made in company stocks, government securities and bank deposits. The amounts in both the GRF and the RFFG are not published but there are some estimates which suggest the size to be KD 12000 million.

3.9.4 Fiscal Deficit:

The fiscal deficit in the government budget started in the fiscal year 1982/83 when the oil revenues fell by 16 per cent. Table 3-12 shows that during the period 1982-88, except for fiscal 1983/84 when it showed a slight surplus, the government budget has continuously shown a deficit. The highest deficit was recorded in 1986/87 and amounted to about 1129.2 million and the lowest deficit was recorded in 1984/85.

3.10 CONCLUSION

In this chapter the structure of the financial and public finance sectors has been surveyed. In reviewing the financial sector the following main features were found:

1. The financial sector in Kuwait consists of 7 commercial banks, 3 specialised institutions, 22 investment companies, 39 money exchanges, 19 insurance companies and the stock exchange.

2. Since the CBK was established in 1969, the monetary policy in Kuwait has undergone several changes. During the past twenty years the CBK has tried to play a role in influencing the monetary, financial and economic developments in the country. The CBK has tried to use its own experience in an attempt to develop a number of monetary instruments. Some of these instruments are adopted while other are devised.
3. In the Commercial Banks sub-sector, it was found that non-productive credit such as personal and trade credits exceeded the amounts advanced to productive areas such as industry and agriculture. The figures indicate a society with a high level of consumption, which may not be desirable in the long run.
4. The money supply, in both its definitions (M1 and M2) expanded in 1981. In fact M1 jumped by 81 per cent in 1981 compared to 1980.

On the other hand, in reviewing public finance in Kuwait, the following features have been noted:

1. As is to be expected the economy of Kuwait is highly dependent on one crucial commodity, oil. Table 3-13 demonstrates this clearly in terms of the deficits recorded in the national budget of Kuwait since the early 1980's. Clearly this overwhelming dependence on oil revenue cannot be viewed without alarm. Therefore the government of Kuwait should establish a taxation system.
2. The government in Kuwait started to issue public debt instruments to cover the deficits in its budget. The instruments provide the banking and financial institutions and the private sector a guaranteed investment asset.

The next chapter will focus on the historical developments in the Kuwait Stock Market.

Chapter IV

THE KUWAIT STOCK MARKET: A HISTORICAL BACKGROUND 1952-1988

As mentioned in Chapter II, after World War II oil became a major financial resource in the Kuwaiti national income. The increase in oil production resulted in a rapid growth in Kuwaiti financial resources. Therefore, this financial resource helped in the establishment of Kuwaiti financial market.

In fact the increase in oil resources generated a growing demand for financial assets supporting the monetary and financial sector in the Kuwaiti economy. Over the past thirty years the Kuwait stock market has grown rapidly and has become one of the biggest sectors in terms of the activities of investors.

The main purpose of this chapter is to present an historical overview of the developments of the Kuwait stock market. It is useful to mention here that there has been some research in the field of the capital market in Kuwait done by Khouja and Said (1974), the Ministry of Planning (1976), AL-Zurban (1981), El-Beblawi and Fahmi (1982), Al-Rukaibi (1983), Al-Modaf (1983), Darwiche (1985), Salameh (1986), Al-Jumah (1986) and Al-Shimali (1989).

It is useful for the purpose of this study to divide the periods of the development of the Kuwait stock market into four main stages. The following is a detailed review of the major historical developments in the stock market during the period 1952-1988.

4.1 THE FIRST STAGE (1952-1969):

4.1.1 Market Activity;

The first shareholding company in Kuwait was the National Bank of Kuwait which was established in 1952. From that date the private sector in Kuwait started

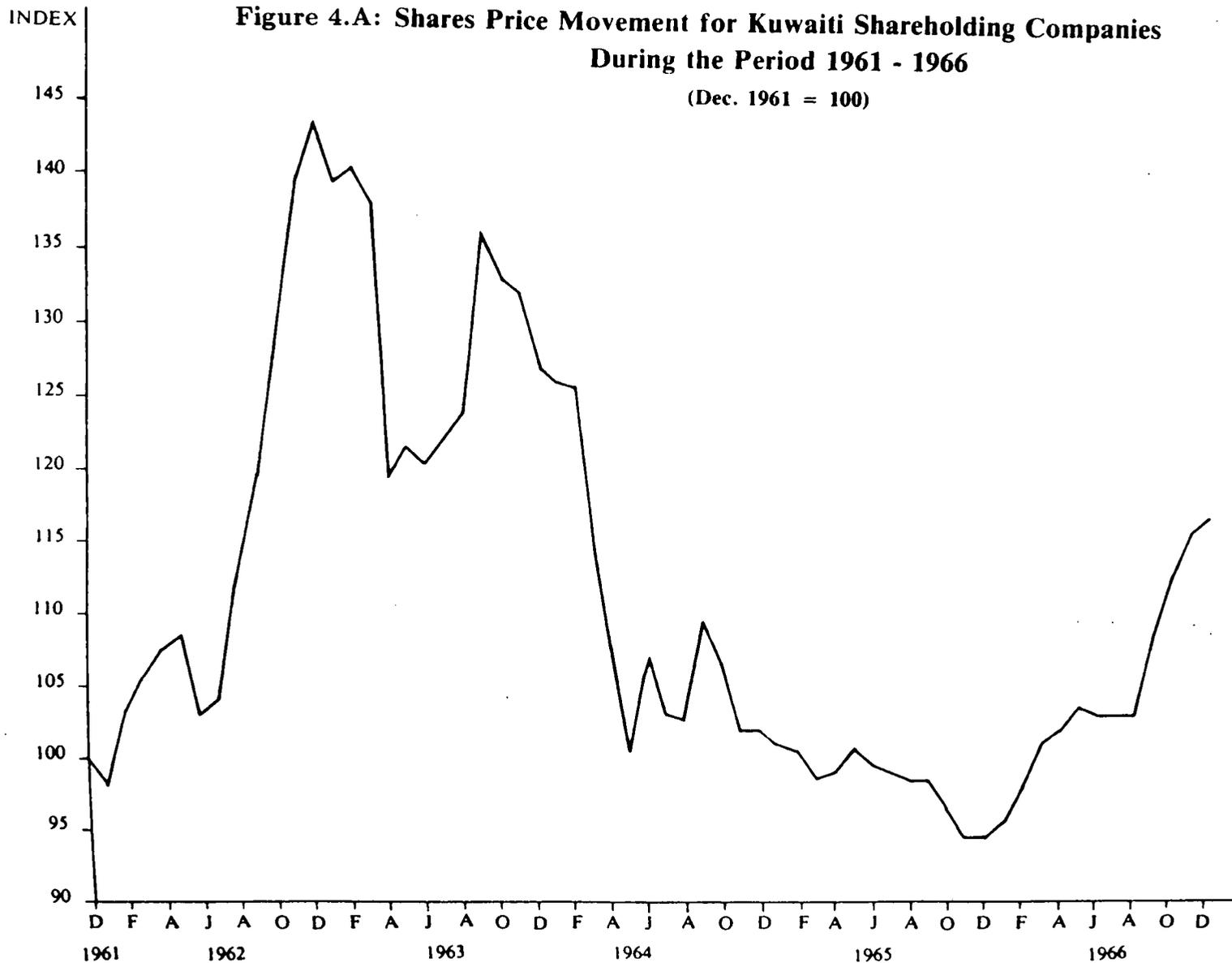
to create more companies. During the period 1952-69 twenty five public shareholding companies were created with a total capital of 100 MKD, represented by 11.8 million shares. The government owned about 43 per cent of the capital of these companies.

There is no official data relating to the secondary market in the period 1952-69. The main reason for this is that the stock market during this period did not have any official structure. The investors traded their shares among themselves directly or through unofficial brokers.

However, there are a few studies which have dealt with the estimation of secondary market activities during the period 1952-1969. Khouja, M. and Said, W. (1974), El-Beblawi (1982), and Al-Rukaibi (1983) have reported that during 1952-1969 the secondary market was active. However, Kouja and Said emphasised in their work that during the period of 1965-69 the market was inactive compared to the earlier period. Al-Rukaibi pointed out that the market became one of the major economic and financial sectors of the Kuwaiti economy. Trading was carried out by many different unofficial brokers and prices for stocks varied from one broker to another. According to the annual report of the Kuwait Investment Company (1964), share prices dropped sharply in 1964. Figure 4.A shows more details about this decline.

It is useful to summarise the main features of the stock market during the period 1952-1969 as follows:

1. During this period the main institutions of the stock market structure were founded. Therefore the available data for this period shows the rapid growth in the number of companies and shares issued. (25 companies with a total capital amount 100 MKD).
2. The secondary market was very simple and stock prices varied among the brokers.
3. The par value of the stocks was fixed between 7.5 KD to 10 KD. This value was very high, so it prohibited the small investors from participating in the stock market.



SOURCE: El-Beblawi & Others, The Kuwaiti Stock Market (1946-1980). The Industrial Bank of Kuwait Series, No. 6, p. 31.

4. Because of the lack of financial information, the investors depended upon advice and private knowledge. According to the basic theory of finance the thin market can be defined as “..operating with few buyers and sellers at any given moment and generating only a moderate volume of orders”²³

The above summary indicates that the stock market in Kuwait during the period 1952-1969 can be described as a thin market.

4.1.2 Legal Developments;

On 12 May, 1960, Law No.15 was issued. This Law was the first Law concerning shareholding companies in Kuwait and the following are its main aspects²⁴

1. Every joint shareholding company established in Kuwait should be owned by Kuwaiti nationals, except for banks and insurance companies. It is possible for non-Kuwaitis to participate in the other companies. At the same time Kuwaiti participation should own at least 51 per cent of the total capital.
2. The authorized capital of a shareholding company shall be not less than 500,000 Rupees.
3. The transfer of shares was prohibited before the company had issued its first balance sheet, covering 12 months.

4.2 THE SECOND STAGE (1970 - 1977):

This period is the most important period in the life of the Kuwait stock market. It covers the main developments of the stock market in Kuwait. It is useful to divide this period into the following sub-periods:

4.2.1 (A) 1970-1974:

4.2.1.1 Market Activity;

By the end of 1974, the total number of public shareholding companies was 33

²³ Francis, “Investments, Analysis and Management”, New York: Mc-Graw-Hill, 1987, p.81.

²⁴ Law No. 15, 1960, Promulgating the Commercial Companies Law, Kuwait: Kuwait Al-Youm, Official Gazette, No. 276, 23 May, 1960.

TABLE 4-1: Shareholding Companies Classified by Sector

(million KD)

SECTOR	1970			1973		
	NO.	Cum. Capital	%	NO.	Cum. Capital	%
Banks	4	11.4	12.4	6	23.7	12.8
Insurance	3	2.2	2.4	3	2.5	1.4
Investment	2	17.5	19.0	3	38.3	20.8
Industrial	7	39.8	43.1	9	70.4	38.2
Transport	2	13.8	14.9	2	20.5	11.1
Services	4	7.6	8.2	5	15.6	8.5
Real Estate	-	-	-	3	13.3	7.2
Total	22	92.3	100.0	31	184.3	100.0

Source: El-Beblawi and Fahmi, *The Kuwaiti Stock Market 1946-80*
Industrial Bank of Kuwait, Kuwait, 1982, p36.

with a total capital of KD 214 million. This is an increase of 32 per cent in the number of the public shareholding companies and a 114 percent increase over the total capital at the end of 1970. The government owned about 41 per cent of the capital of these companies. Most of them were established in 1973 and in the same year the first three real estate companies were established. Table 4.1 shows that the cumulative capital of these companies was 13.3 MKD, which is 7.2 per cent of the total capital distribution according to category.

As is also shown in Table 4-1, industrial companies represented about 38.2 percent of the total cumulative capital of companies. Available data on the value and volume of transactions indicated that the total volume of transactions in 73/74 reached 10.6 million shares. This was an increase of 238.5 per cent so that the total

TABLE 4-2: Average Share Prices of Kuwaiti Shareholding Companies

(1970-74)

YEAR	BANKS	INS. & INV.	INDUSTRY	OTHERS	AVERAGE
1970	26.9	11.9	14.9	13.3	16.8
1971	32.0	14.9	17.0	15.4	19.8
1972	52.2	26.68	23.3	79.1	45.3
1973	69.1	39.8	36.9	31.2	44.3
1974	64.6	42.6	55.8	29.2	48.1

Sources: Khouja and Said, *The Kuwait Stock Market: Performance and Prospects*, Kuwait Economic Society, 1974, p.111.

and

Ministry of Planning, "Kuwait Stock Market 1976", Table 4, p.19.

value of transactions had increased by 238.5 percent by 73/74 as compared with 72/73.

Table 4-2 indicates that during the period 1970-74 the General Average Price (GAP) increased by an annual rate of 23 per cent per annum. In fact, the same indicator rose by 129 percent in 1972 compared with 1971. During 1972-74 the GAP increased slightly (by an annual rate of 2%). As shown also in Table 4-2, 1972 was the most important year of stock market activity during this period.

El-Bablawi pointed out that the rise in the share prices during the period mentioned above had also included the shares of newly established companies which had not started their operations and did not issue any annual balance sheet.

4.2.1.2 Legal Developments:

In June 1970, a British consultancy group visited Kuwait on invitation of the

Ministry of Commerce and Industry (MCI). This group recommended the MCI to open a stock exchange in Kuwait within 9-12 months. In their view this period was adequate to establish a stock exchange in Kuwait²⁵.

On 26 November 1970, Law No.32 was issued and was the first law to establish a basis for trading the shares of Kuwaiti companies. It also gave the Minister of Commerce and Industry the power to issue regulations and laws to organize the stock market in Kuwait.

As a result of this consultancy, a financial committee was appointed. This committee comprised two representatives of the Ministry of Commerce and Industry, a representative each of Ministry of Finance and Oil and the Central Bank of Kuwait, and five other members from the private sector. The main duties of this committee were to present propositions regarding the establishment of a stock exchange and to work as a consultancy team for the government²⁶.

In 1971, the Minister of Commerce and Industry issued Ministerial Decree No.10/71 which can be considered as the first Law in Kuwait to organize trading in shares. By this law the MCI established a new division to deal with shareholding companies. The main duties of this division were compiling statistical analysis of share movements, publishing daily prices and the number of shares traded and following up company balance sheets.

In the late 1974, the Minister of Commerce and Industry issued Resolution No.52 suspending the forward-market transaction temporarily. This resolution was necessary because trading in local shares was down and there was a general stagnation in the stock market.

4.2.2 (B) 1975-1977:

4.2.2.1 Market Activity :

During the period 1975-77, seven new public shareholding companies were established with a total capital of 45.75 million KD and 42.5 million shares.

²⁵ Slameh, "The Stock Market and Economic Stability in a Developing Surplus Economy", A Dissertation presented to the University of Denver, USA, 1986. p.64.

²⁶ CBK, Economic Report 1972/73, Kuwait, 1973 ,p.60.

TABLE 4-3: Kuwait Shareholding Companies

Volume of Traded Shares (in thousands).

	1974	1975	%	1976	%	1977	%
Banks	2686	6108	127.4	7806	27.8	2431	-68.9
Investment	8332	26190	214.3	50658	93.4	15436	-69.5
Insurance	65	368	466.1	695	88.9	179	-74.2
Industrial	10325	73160	608.6	63775	-12.8	16030	-74.8
Transport	9182	26509	188.7	23635	-10.8	18749	-20.7
Services	358	734	105	613	-16.5	72	-88.3
Real Estate	6320	37904	499.7	29115	-23.2	7104	-75.6
Total	37268	170973	358.8	176297	2.39	60001	-65.9

Source: CBK, *Quarterly Statistical Bulletin*, Vol.5, No.4, 1978, p.25 and Vol.7, No.3, 1980, p.39

Table 4.3 shows the volume of traded shares in the Kuwait stock market during the period 1974-77. This table also indicates that in 1975 the total volume of trade jumped by 358.8 per cent. In 1976, the same indicator increased slightly by 2.4 per cent and peaked. But in 1977 it dropped by 65.9 per cent.

On the other hand, the average share price increased in 1976 by 86.1 per cent. In 1977 the average share price dropped by 38 percent and during this year this indicator decreased by a monthly average of 3.8 per cent. Table 4.4 shows in more detail the price movements during the period 1975-77.

As mentioned earlier, the stock market of Kuwait had a sharp decline in its activity in 1977. This further supports the existence of speculative behaviour and an emphasis on making a quick profit. Additionally, the trading of stocks increased in 1976 in part because of selling in the secondary market and the popularity of

TABLE 4-4: Kuwait Shareholding Companies

Average Share Price (In KD)

SECTOR	1975	1976	%	JAN. 1977	DEC. 1977	%
C.Banks	68.4	111.5	93.0	170.4	96.3	-44
S.Banks	38.0	77.8	104.7	115.0	68.0	-41
Insurance	68.3	130.0	90.3	213.3	125.0	-41
Investment	29.0	60.5	108.6	80.0	53.3	-33
Industrial	52.7	88.7	68.3	81.1	60.6	-25
Transport	27.9	33.2	19.0	53.0	45.0	-15
Shipping	46.5	57.2	23.0	31.0	25.2	-19
Real Estate	35.9	114.9	220.1	177.0	88.3	-50
Others	20.1	46.1	129.4	68.2	54.9	-20
Grand Average	43.0	80.0	86.1	109.9	68.5	-38

Source: CBK, Economic Report of 1976 and 1977.

forward trading. In fact the development in the market activity in 1977 caused the first crisis in the Kuwaiti stock market. The main features of the first crisis can be summarised as follows:

The first crisis:

By the end of 1976, the first signs of a crisis in the Kuwait stock market had started to appear. A possible reason for this crisis is that forward-dealing was used widely in 1976. However forward-dealing had a big role in upsetting the secondary market in the following ways;

1. By pushing up the levels of prices. As mentioned earlier in this chapter, the level of prices was very high according to any economic measurement.

2. By effecting the secondary market mechanism. In fact, post-dated cheques caused a disequilibrium between supply and demand in the market.

A lot of investors had difficulty in covering their post-dated cheques when prices dropped in 1977.

On the other hand the government solved this crisis by issuing laws and buying shares from the market. The government bought shares from the market during the period Dec.1977-Apr.1978, the estimated amount being about 150 million KD.

In fact by buying shares from the market the government controlled the share supply and prices in the market. Also, the government had a high percentage in these companies, so that in effect they were managed by the government.

4.2.2.2 Legal Developments:

In 1975, Law No.5 was issued. This introduced amendments to some articles of Law No.15 of 1960 concerning shareholding companies. The main amendments of this Law meant that it did not allow the shares of the new companies to be traded without publishing their first balance sheets. This Law also split the shares of the Kuwaiti companies to a value of KD 1 nominal instead of their previous par values, which were between 7.5 KD and 10 KD.

The government split the shares because it believed that this step would encourage small investors to enter the market and would increase the share base. For example, after the law if the previous par value was 10 KD then 10 KD had to contain 10 shares.

Al-Rekaibi argued that "the split was beneficial because it allowed small investors and private citizens to buy stocks. The split increased the number of shareholders and brought the average share price down to a more realistic level. As a result, the problem of over-subscription was temporarily halted"²⁷

At the end of April 1977, the Kuwait stock exchange was opened in the city centre of Kuwait.

²⁷ AL-Rekaibi, "A Descriptive Analysis of the Development of the Kuwait Stock Exchange", A Dissertation presented to the School of Business and Management, United States International University, USA, 1983, p.58.

TABLE 4-5: Kuwait Shareholding Companies

Volume of Traded Shares (in thousands)

SECTOR	1978	1979	%	1980	%
Banks	59973	81388	35.7	47686	-41.40
Investment	42175	24379	-42.2	24537	0.64
Insurance	685	3452	403.9	1048	-69.64
Industrial	27207	22619	-16.8	14833	-34.40
Transport	6382	8427	32.0	23607	180.13
Services	7732	6071	-21.5	9382	54.53
Real Estate	20618	22884	10.9	22616	-0.01
Total	164772	169220	2.7	143709	-15.10

Source: CBK, *Economic Report*, various issues.

Decision No.31 of the year 1977 was issued on April 1977 by the Ministry of Commerce and Industry in order to regulate the forward-market. This decision placed all forward dealings under MCI control. In August 1977 a further decision was issued which prohibited the increase in the capital of existing companies.

4.3 THIRD STAGE : AFTER THE FIRST CRISIS (1978-80):

4.3.1 Market activity;

In 1978, the total traded shares reached 164.7 million shares, representing a rise of 174.6 percent over the preceding year. The major increase was in the bank sector (58 %), investment 25 per cent, and real estate 12.5 per cent. On the other hand, the General Price Index at the end of this year rose by 35 per cent, reaching 258.9 against 191.8 in 1977. Table 4.6 shows that the price index of insurance companies registered the highest growth in this year (104.2%).

TABLE 4-6**TABLE 4-6: Kuwait Shareholding Companies**

Share Price Index
(1st January 1976 = 100)

SECTOR	1978	%	1979	%	1980	%
Banks	315.3	61.6	496.6	57.5	469.7	-5.4
Investment	248.1	27.8	258.8	4.3	241.8	-6.6
Insurance	569.8	104.2	774.9	36.0	693.8	-10.5
Industrial	226.8	31.3	236.0	4.1	211.9	-10.2
Transport	101.2	-16.8	113.0	11.7	140.2	24.0
Services	298.5	28.7	272.5	-8.7	359.2	31.8
Real Estate	384.0	37.0	444.5	15.5	464.5	4.5
General Index	258.9	35.0	311.4	20.3	313.3	0.6

Source: CBK, *Quarterly Statistical Bulletin*, Vol.10, No.2,
Apr.-Jun. 1983, p.52.

By 1979 the market was stable. The total volume of traded shares was 169.2 million shares, a slight increase against the previous year (2.7 %). As can be seen from Table 4.6, the General Price Index rose by 20.3 per cent during the same period. In fact, the reason for this increase was due to the rise in the price index of the bank and insurance sectors (57.5 % and 36 %).

In 1980, the market activity witnessed a decline and the market was weak. The total volume of traded shares decreased to 143.7 million shares, a decline of 15.1 per cent from the previous year. Possible reasons for this decline are that during 1980 Kuwaiti investors directed their concern to new shareholding companies. These companies are the Gulf shareholding companies, most of which were established in 1979 and 1980 in the Gulf countries (mainly UAE and Bahrain). The total number

of these companies reached 35 by the end of 1980. However, during the same period the general price index increased slightly by 0.6 per cent. Three sectors had shown an increase in their price index during the same period. These sectors are; Services, Transport, and Real Estate (31.8 , 24 and 4.5 per cent respectively).

4.4 THE FOURTH STAGE (1981-1988):

This period can be further divided into the following two sub-periods:

4.4.1 (A) 1981-1984:

4.4.1.1 Market Activity:

It is useful for the purpose of this study to focus on the activity of the official market and the unofficial market (AL-Manakh). During this period the unofficial stock market was created and this market witnessed many developments during 1981-1984. This market will be the most important subject to be discussed in this chapter because it caused a big crisis in the financial market. This crisis (Al-Manakh) affected the Kuwait economy in general and the financial market specifically.

(1)The Official Market (Stock Exchange);

During the period 1981-84 apart from the Kuwait public shareholding companies, two new types of companies were included in the stock market, the Kuwait closed shareholding companies and the Gulfshare holding companies. The following is a brief summary of each of them:

Kuwait Public Shareholding Companies:

During this period four new public shareholding companies were established; the Medical Industries Company and the Kuwait International Petroleum Investment Company, both of which were established in 1980 with a capital of 6 MKD and 100 MKD respectively. In 1982, the Trade Fair Complex Company was established with a capital of 5 MKD and in 1983 the Mobile Telephone Company was established with a total of 25 MKD.

Available data on the value and volume of transaction during 1981-84 show that these two indicators reached their highest level in 1981, 1754 MKD and 246.7 million shares respectively. In 1981, the General Price Index reached 490 point, an increase of 56 per cent. But in 1982 the same indicator reached its highest level at 509 points (see Figure 4.B).

Kuwait Closed Shareholding Companies:

In April 1981, the MCI set some conditions for trading in the shares of the closed shareholding companies. The difference between these companies and the public shareholding companies is that the shares of these companies are issued to a limited number of participants (mainly between families or partners).

These conditions can be summarised as follows:

- (a) The company should have a capital of 5 MKD or more.
- (b) The company should have been created for at least five years with accumulated profits during the last 2 years.
- (c) Any closed shareholding company which wishes its shares to be listed in stock exchange should publish a detailed financial report on its activities and a balance sheet in at least two daily newspapers.

In 1981, the stock exchange allowed six Kuwaiti closed shareholding companies to trade in the market. By the end of 1984, there were 7 Kuwaiti closed shareholding companies, with the volume of trading in their shares amounting 1.5 million shares at total value of 1.6 MKD.

The Gulf Shareholding Companies:

As mentioned earlier these are public shareholding companies established in the Gulf countries (mainly UAE and Bahrain).

After the Gulf companies gained in importance in the local market especially in the Al-Manakh market, the government initiated the first regularity framework outlining the main conditions under which these companies were to be listed in the Kuwait stock exchange. The following are the main conditions:

FIGURE 4.b . SHARE PRICE INDEX : JAN 1976 =100 . (1976-88)

84



Source: Central Bank of Kuwait

**TABLE 4-7: Companies Listed in the Local Stock Exchange by the
End of 1984**

COMPANY	NO.	VOLUME	VALUE	TRANSACTIONS
Kuwait Public	40	20	112.1	5430
Kuwait Closed	7	2	1.6	79
Gulf	8	49	2.7	442
Total	55	71	116.4	5951

[Volume in Million Shares, Value in Million KD]

Source: CBK, *Economic Report 1981*, p.102.

- (a) The company should be set up in one of the GCC countries and the Kuwaiti partners must own at least 51 per cent of its total share base.
- (b) The company should have been established for at least three years, with a 10 per cent profit per annum in the last two years.
- (c) The capital of the Gulf company must not be less than 5 MKD.

The important factors behind the establishment of these rules are as follows:

- (1) The narrowness of the shares listed in the secondary market.
- (2) As mentioned earlier, many investors were trading in these shares outside the stock exchange, and the new rules would encourage them to trade in the market.

In 1981, two companies were listed in the official stock market, the Gulf Real Estate Investment Company and the Gulf Agricultural Development Company. By the end of 1984, there were 8 Gulf shareholding companies with a total volume of 49 million shares and a total value of 2.7 MKD.

Table 4-7 shows the three types of companies listed in the stock market by the end of 1984.

(2) The Unofficial Market (AL-Manakh):

This market is also called the parallel market or Souq Al-Manakh. As mentioned earlier in this chapter, after the first crisis the government had banned the establishment of new shareholding companies. Therefore the small Kuwaiti investors established 42 new companies (Gulf shareholding) outside Kuwait, mainly in Bahrain and the United Arab Emirates and traded in its shares inside the Al-Manakh market illegally. In fact the shares of these companies were traded in the market before they had established their business. In 1979, a total of 13 Gulf shareholding companies were established and by the end of 1982 they totalled 42 with an issue base of KD 1.8 billion.

4.4.1.2 The Activity of the Market:

In 1981 and part of 1982, the Al-Manakh market witnessed a rapid growth in its activity. Trading in the shares of the Gulf companies brought a sharp rise in prices and the transactions increased rapidly. Most of these transactions were paid by post-dated cheques. By using post-dated cheques the traders had a new credit facility system which helped them to buy any quantity of shares they wanted. The interest rate on the post-dated cheques varied between 150 to 300 per cent. For example all you needed to enter the market at that time was to have a cheque book account, and to issue a post-dated cheque payable to the seller with a high percentage of premium above the market price. The post-dated cheque system caused high inflation in prices, and the prices of some companies doubled within a few hours.

The absence of government controls for the Al-Manakh market has not allowed any accurate data about the volume of transactions or prices. But some indicators collected from local newspapers estimated that during the first half of 1982 there were 500 million shares. Darwiche (1985) reported that the volume of trading in the Gulf shares reached 3500 million shares at a face value of 200 million dollars, but their market value amounted to US\$ 6000 million.

”The signs of the Al-Manakh crisis emerged in September 1982 when the Al-Manakh market sagged suddenly to 72 million shares against 602 million in the previous month ”²⁸.

4.4.1.3 The Al-Manakh Crisis:

This crisis was bigger than the first one. It caused a big problem for the Kuwait economy and still affects it. The signs of the crisis started in September 1982 when one of the biggest dealers in the market was unable to pay his debtors. After a short time, other investors had the same problem. The following are the main causes of the Al-Manakh crisis:

(1)Direct Factors:

- (a) The absence of government control.

This was, in fact, one of the most important causes of this crisis, because the government did not take any action against the market and it knew that it was unofficial. It is believed that some government officials were involved in the market.

- (b) Forward transactions.

As mentioned earlier in this chapter the post-dated cheque system was widely used. This phenomenon caused a rapid increase in the prices of shares. Post-dated cheques also involved huge amounts which exceeded the financial resources of the traders.

(2)Indirect Factors:

- (a) The limitation of the economy capacity.

Al-Sabah argued that ”the sudden rise in oil revenues in the late 1970’s and early 1980 gave rise to another problem which directly brought about the Souq Al-Manakh crisis. The problem was basically caused by the limited absorptive capacity of the Kuwaiti economy and the excess of oil revenues over the country’s current ability to spend domestically. This was essentially related to the productive

²⁸ CBK, The Kuwait Economy 1980-84, Kuwait, 1984, p.92.

TABLE 4-8: Value and Maturity of Post-dated Cheques

VALUE (BKD)	MATURITY DATE
11	1982
14	1983
1.7	1984
26.7	-

Source: Al-Jumah, *The Kuwait Stock Market Crisis*, p.52.

base of the economy. The larger the productive base, the higher the absorptive capacity”²⁹.

(b) Unplanned economy.

Al-Saadoon argued that the Al-Manakh crisis was another example for the unplanned economy in Kuwait. He argued that the Kuwaiti government did not know how to channel its surplus money into the productive sectors and that it had channelled the oil revenues into the wrong sectors. He also argued that a large part of the surplus which came from the oil revenues was not invested locally but only in land and shares, and that is why these sectors always have problems³⁰.

On the other hand, the extent of the Al-Manakh crisis can be summarised as follows:

- There was a total of 78,878 post-dated cheques.
- The value of the post-dated cheques was 26.7 billion KD (BKD).
- The maturity dates of these cheques was as in Table 4-8.

²⁹ Al-Sabah, Kuwait: Anatomy of a Crisis Economy, London , pp.6-7.

³⁰ Al-Saadoon, “The Climate of Crisis and Al-Manakh Crisis”, (in arabic), Kuwait: Al-Rubain Company, 1984, p.68.

TABLE 4-9: Investor Details

CLASS	NO. OF INVESTORS	TOTAL VALUE TRADED (BKD)	%
Large	50	18	66.7
Middle	400	7	25.9
Small	5000	2	7.4
TOTAL	5450	27	100

Source: Al-Jumah, *The Kuwait Stock Market Crisis*, p.53.

A total of 5,450 investors were involved in the Manakh crisis. Table 4-9 shows more details about these investors. On the other hand, the following results were found after we had compared the total value of the post-dated cheques with some economic indicators:

1. The total value of the post-dated cheques exceeded 4.5 times the 1981-82 Kuwait GDP, which was 4727.5 MKD.
2. The same figure was 9 times the oil revenues which were 27641 MKD during the fiscal year 81/82.
3. The same figure was 52 times the economic bank's capital and reserves which were 505.2 MKD in 1982³¹.

4.4.2 Legal Developments;

During the period 1981-84, the government issued many laws and decisions. It is useful for the purpose of this study to discuss firstly the legal developments in the Al-Manakh market and later on the legal developments of the official market.

³¹ Slamah, op. cit., p.98.

4.4.2.1 The Al-Manakh Market:

During the period 1981-84, the government issued a lot of laws, decisions and amendments to solve the Al-Manakh crisis. The following is an outline of the most important of these laws and decisions:

- Decree No. 57/82
- Decree No. 59/82
- Law No. 75/83
- Law No. 100/83

The following are the main features of these laws;

1. By Decree No 57/82, the government gave the Kuwait Clearing Company – a closed shareholding company with a capital of 6.5 MKD – the right to register all forward transactions of the Al-Manakh market, and at the same time the government called everyone who had post-dated cheques to register their cheques within 30 days. The Kuwait Clearing Company reported that it had registered 28.8 thousand cheques to the value of 26.7 billion KD.

”Three categories emerged when the owners of post-dated cheques were classified according to their net financial position in the clearing company records; those with no payables and only receivables, those with payables and receivables, and those with only payables”³²

Table 4.10 shows more details about the categories of the post-dated cheques holders.

On 22 November 1982, Law No 59/82 was issued. The purpose of this law was to establish a fund for small investors. The capital of this fund was 500 MKD paid by the government from its reserve. According to this law the small investor is defined as the investor who had been involved in the Al-Manakh market and whose total debts did not exceed 2 MKD. Later on Decision No 46/83 was issued,

³² Slameh, op. cit., p.100

TABLE 4-10: Categories of Post-dated Cheque Holders

(in MKD)

CATEGORY	POSITION	CREDIT	DEBIT
First	Receivables but no Payables; 4131 Individuals	3670	-
Second	Payables and Receivables; 1478 Individuals	23073	25543
Third	Payables but no Receivables; 684 Individuals		1200
TOTAL		26743	26743

Source: Securities Group Co. Annual Report, 1983, p.9.

reducing this amount to 0.5 MKD. The fund would pay the creditor the amount due him calculating it as follows:

- The amounts on cheques dated before 20 September 1982 shall be paid in full.
- The amounts on cheques dated after 20 September 1982 must be reduced to the spot price on the date of issue of the cheques plus the same percentage agreed in the forward contract for the period from the date of the issue to 20 September 1982.

Later on Decision No 57/82 was issued to clarify the methods of payments. The fund would pay the creditors in cash or in bonds according to the following:

Transaction Value (in thousand KD)	Method of Payment	Maturity date
Up to 100	Cash	Immediately
100 - 250	Bonds	6 months
250 - 500	Bonds	12 months
500 - 750	Bonds	36 months
750 - 1000	Bonds	48 months
1000 - 1500	Bonds	66 months
1500 - 2000	Bonds	72 months

Nine months later, on 6 November 1983, the Prime Minister issued an amendment (Decision No 46/83) for the method of payment. By this decision the limit payable by the fund was reduced to 0.5 MKD and accordingly the method of payment to small investors became as follows;

Transaction Value (in thousand KD)	Method of Payment	Maturity Date
Up to 25	Cash	-
25 - 62.5	Bonds	6 months
62.5 - 125	Bonds	12 months
125 - 187.5	Bonds	36 months
187.5 - 250.5	Bonds	54 months
250 - 375	Bonds	66 months
375 - 500	Bonds	72 months

The Central Bank of Kuwait rediscounted these bonds at 7.25 percent and the commercial banks also announced that they would rediscount these bonds at 7.5 percent. It is believed that the fund, by the end of 1983, had paid in cash to small investors about 110 MKD and issued about 775 MKD bonds.

On 20 April 1983, the government issued Decree No 75/83. Through this law the government created a public corporation which undertook the settlement of transactions registered in accordance with Law 57/82. This corporation also took over the assets of the creditors whose debts resulted from forward share transactions.

The main duties of this corporation were that if any creditors could not pay or cover their debts, they should transfer by law to this corporation, which had the right to undertake the management, liquidation and execution of settlements and compromises, and act on behalf of the creditors whose debts resulted from forward share transactions. In fact this corporation had its own capital which was one million KD, withdrawn from the country's general reserve.

4.4.2.2 Law No 100/1983:

Although the government had issued many laws and decisions it found that they did not solve the problem because these laws tried to solve the post-dated cheques problem by paying in full. It is worth mentioning here that there were some investors who paid in full to debtors.

Law No 100/83 was issued on 24 August 1983; and through this we could say that the government had solved the post-dated cheque problem. We could also say that this Law was unfair to the people who had paid to their debtors in full.

CBK reported that Law No 100/83 brought about some positive results, such as the following:

- The minimization of insolvencies and bankruptcies.
- A reduction in the total number of persons referred to the corporation as the said number had reached 128 persons prior to the issue of the second law.
- The transfer of 81 cases from deficit to surplus³³.

By this law the government reduced the profit margin to the lowest level. Apart from issuing laws and decisions the government tried to minimize the crisis

³³ CBK, Economic Report, 1983, p.93.

by buying shares from the stock market. Its objectives can be summarised as follows:

1. Stock prices will be supported in the secondary market. If the prices are stable they will help the government to minimize the effects of the crisis. For example, borrowers from banks can sell their shares at a good price and can then pay their banks.
2. By buying shares from the market, the government tried to increase the prices or stop their decline. The government also tried to help investors to solve their problems by liquidating their shares in the secondary market.

In fact there is no official data about the total shares purchased by the government, but the estimate is about 700 MKD. The Securities Group Company reported that the government bought shares as follows:

Period	Total value (MKD)
6 Oct. - 31 Dec. 82	402
1 Jan. - 31 Dec. 83	296
1 Jan. - 30 Apr. 84	2
TOTAL	700

It is believed that the government shares had increased from 36 per cent of the total market shares in 1982 to 48 per cent in 1983.

The government bought these shares through three investment companies, the Kuwait Foreign Trade and Contracting Investment Company (KFTCIC), the Kuwait International Investment Company (KIIC), and the Kuwait Investment Company (KIC).

However, after the government stopped buying shares from the market the prices declined sharply. For example the General Price Index declined from 476 points in March to 238.6 points in December 1984.

4.4.2.3 The Official Market (Stock Exchange):

After the government had spent a lot of time solving the Al-Manakh crisis, it started to reorganize the stock market in Kuwait. On 14 August 1983, an Emiri decree organizing the Kuwaiti stock exchange was issued. According to Article No. 3 in this decree the stock market exchange objectives would particularly include the following;

1. Developing the stock exchange in a manner serving the economic growth process and helping to realize the objectives of the state economic policy.
2. Developing the methods and techniques in the stock exchange through establishing a relationship with the foreign financial market.

On the other hand the stock exchange would be managed by a committee, under the chairmanship of the Minister of Commerce and Economy and a membership of the following;

1. The stock exchange director, who would be a full-time deputy.
2. A representative of Ministry of Commerce and Economy.
3. A representative of Ministry of Finance.
4. A representative of CBK.
5. Two competent and experienced experts, duly selected by the Council of Ministers.
6. Four representatives from the Kuwait Chamber of Commerce and Industry.

Article 8 of the stock exchange decree stated that the stock exchange committee would assume the responsibility of establishing the competent technical units required by the stock exchange to exercise its activities, namely³⁴:

1. To follow up and analyse price movements of shares and bonds duly listed in the stock exchange.

³⁴ Emiri Decree and By-Law Organising Kuwait Stock Exchange, Kuwait Stock Exchange, 1986.

2. To establish a sales control unit which would be responsible for follow up and evaluation of forward transactions.
3. To establish a data and information compilation unit to compile, analyse and publish the data relating to the market.

According to Article 10 the stock exchange membership would be limited to the following:

- i. Public Shareholding companies.
- ii. Closed Shareholding companies.
- iii. Brokers in the Stock Exchange.

In fact Articles No.8 and 10 were issued to create new solid and practical rules to protect the stock market from any future problems.

4.4.2.4 By-Laws of the Kuwait Stock Exchange:

In November 1983, the Kuwait stock exchange by-laws were issued with 69 articles covering a number of subjects related to the market's objects, management and membership. According to Article 7 the financial papers acceptable in the market are as follows:

- i. The shares of both the public Kuwaiti shareholding companies and closed Kuwaiti shareholding companies.
- ii. The shares of non-Kuwaiti shareholding companies which are approved by the market committee.
- iii. Bonds and any other Kuwaiti or non-Kuwaiti financial papers approved by the market committee.

These by-laws also set the requirements which had to be satisfied by brokers in the Kuwait Stock Exchange. Article 21 of the by-laws spelled out the details of these requirements, as follows:

- a. It should be a 100 per cent Kuwaiti company.

- b. The brokers in the company had to be Kuwaitis with educational qualifications not lower than General Secondary School Certificate.
- c. The company had to provide a valid bank guarantee.

Moreover, the by-laws contain more details about the new organisation of the Kuwaiti stock exchange.

4.5 THE PERIOD 1985-1988:

4.5.1 Market Activity:

After the government closed the Al-Manakh market it created a parallel market for the companies which were trading in the Al-Manakh market (the Gulf and closed companies). The parallel market was open for one hour only after the official market had closed. In this part of the chapter we will discuss the developments in both markets.

4.5.1.1 The Official Market:

This market peaked in 1987, when the total value of traded shares reached 828.8 MKD and the total number of deals of traded shares was 74.5 million.

On the other hand, the price index (31 Dec. 1978 = 100) showed that in 1987 this index reached 99.9 points while it was 65, 86 and 91.6 in 1985, 1986 and 1988 respectively. The main reason for this increase can be attributed to the following factors:

1. **Share Split:** On April 1987, the government decided to reduce the nominal value of all shares to 100 Fills, which meant that all shares which were trading in the stock market were divided into 10 (in the past the nominal value was one KD). In this way the government expanded the market base 10 times. Also, the small investor, unable to deal in Kuwaiti shares because of high prices, was empowered, according to his financial ability, to enter the market after the government had split the shares.
2. **Reduction in Local Interest Rate:** In the first quarter of 1987 the CBK

TABLE 4-12: Finance Situation

COMPANIES TO:	LIQUIDATION	MERGER	VIABILITY	TOTAL
Kuwaiti Public	4	4	-	8
Kuwaiti Closed	5	26	2	33
Gulf Companies	9	15	12	36
TOTAL	18	45	14	77

Source: Al-Jumah, *The Kuwait Stock Market Crisis*, 1986, p.74.

issued Decision No.1/87 determining the maximum limit of the interest rate³⁵. The reduction in the local interest rate had a positive influence on the stock market because some investors channelled funds from their accounts (deposit and savings) to the stock market which gave higher interest.

4.5.1.2 The Parallel Market:

As mentioned earlier the parallel market contains the Gulf shareholding companies and the Kuwaiti closed shareholding companies that are not qualified to be listed in the official market. The activity of this market during the period 1985-88 was stable and in 1988 the government closed it, believing that it should be more organised.

4.5.1.3 The Major Legal Developments:

In March 1986, the MCI published the finance situation of some companies according to the studies prepared by MCI. Table 4-12 summarizes this finance situation.

In August 1986, the Central Bank of Kuwait (CBK) issued the difficult credit facilities settlement programme. The main purpose of this programme is to solve

³⁵ CBK, Economic Report, 1987, p. 30.

the credit problems of local banks, which came from the Al-Manakh crisis. In 1982, the commercial banks had expanded their credit facilities by 103 per cent compared with 1979. Most of these facilities went directly or indirectly into speculation in the stock exchange market³⁶. Of course the CBK during that time should have controlled the credit facilities policy. In fact, some commercial banks had a financial problem after the Al-Manakh crisis. Therefore the CBK set the difficult credit facilities settlement programme. This programme divided the debtors according to their continuous cash flow ability, which could be summarised as follows:

1. For those debtors who had no continuous cash flows, the debtor bank would issue a interest-free loan for a 10-year period equal to his assets, and this loan would have to be repaid through either the liquidation of these assets or after the maturity of the loan. Therefore the debtor bank had to create a interest-free instrument of deferred payment payable by the debtor for 10 years after finalizing the settlement.
2. For those debtors who had continuous cash flows, the debtor bank would reschedule the debt which was covered by collateral for a period of not more than 15 years. Also the bank would use as collateral all those assets as well as the non-insured assets of the debtor, and create an interest-free instrument for the difference between the principal and interest on settlement date and the value of assets legally used as collateral by the bank.

On the other hand, the government supported the local banks through the CBK which had given the right to lay down the conditions and rules in these matters.

On December 15, 1986, a law was issued amending some provisions of the commercial companies law as issued in Law No.15 of 1960. The main features of this law are as follows:

- The nominal value of shares was reduced to 100 Fills.
- The shareholding companies were given the right to buy their shares from the stock market.

³⁶ CBK, Economic Report, 1986, p.41.

On December 27, 1986, a decree was issued creating a clearing system in the stock market. Before this date the stock market did not have any clearing system and the buyers would issue the cheques to the seller. The seller had to wait three days before he received his money. This system was very simple and each transaction was settled separately.

On the other hand the new system helped the transactions within the market to move quickly, and accordingly all the investors in the stock market had to open an account and every week the Clearing Company informed the traders about their financial situation.

4.6 SUMMARY AND CONCLUSIONS:

In this chapter the historical developments of the Kuwait Stock Market during the period 1952 - 1988 have been reviewed. This period was divided into four main stages.

The first stage was the period 1952 - 69, which discussed the establishment of the stock market in Kuwait. The main features of the stock market during this period were as follows:

1. The main institutions of the stock market structure were founded.
2. The secondary market was very simple and the financial information of the listed shareholding companies was poor.
3. The par value of stocks varied between 7.3KD and 10KD.

The second stage was the period 1970-77. During this time the structure and the legal developments were discussed. It has been found that in 1971 the first law in Kuwait concerning organised trading in shares was issued. However, the secondary market was very active. Meanwhile by the end of 1976, the early signs of the first crisis had begun to appear. In 1977, the first crisis in the Kuwaiti stock market had arisen. In fact, the prices of all shares had dropped sharply. The main factors which helped speed this crisis have been discussed in this chapter.

During the same period the government bought shares to a total value of around KD 150 million. This resulted in a decline in the supply of shares in the

market.

The third stage was the period 1978-80 when major developments in stock market activity were covered. It has been found that most of the developments during this period were concerned with solving the 1977 crisis. The secondary market during this period was stable.

The fourth stage covered the years 1981-88 and was one of the most important stages in the Kuwaiti stock market development. Firstly, during this period a great crisis had arisen (the Al-Manakh crisis) which caused and is still causing problems within the Kuwait economy. The crisis has been fully discussed in this chapter. Secondly, during this stage the new organization of the stock market was founded.

On the other hand, the developments in the Kuwait stock market have led to the following conclusion:

- (1) The government has played a huge role in the Kuwait stock market. It has encouraged the private sector to create the stock market. At the same time, it has a high percentage of listed shareholding companies. The legal developments in Kuwait had not followed or moved at the same speed as developments in stock market activity. In fact, most of the developing countries have a lag between the laws and the activity of the economy and Kuwait is no exception in this respect.
- (2) It is clear that the economic policy of the Kuwait government is to support the private sector, even if the participants in this sector suffer. This policy has already cost the government a great deal of money and it will cost even more.
- (3) Finally it is clear that as an institution, the structure of the Kuwait stock market is very weak. Up to this date, there is no institution or company trade in this market. Also, no trading methods or financial instruments (such as mutual funds, options, preferred stocks, etc.) were found.

The next chapter will focus on the theoretical and empirical background of the stock market and the relationship between stock prices and some macro-economic variables.



Chapter V

LITERATURE AND EMPIRICAL REVIEW

This chapter contains two sections. The first will focus upon and discuss the main definitions related to the stock markets as well as the main theories and hypotheses. The purpose of the second section is to give a theoretical and empirical review of the relationship between the stock market and some macro economic variables.

The purpose of this chapter, therefore, is to give a theoretical and empirical background for the work in the next chapter and the empirical tests which will be demonstrated in Chapter VI.

SECTION I: SOME DEFINITIONS:

5.1 The Stock Market:

There are many definitions of the stock market and stock exchange. The difference between the stock exchange and the stock market is that the former is the building while the latter is the market for transactions. The simple definition of a stock exchange is the place where traders sell and buy their stocks or securities. The Dictionary of Modern Economics defines securities market as “an organized market place in which securities (mainly stocks) are bought and sold”³⁷.

Francis defined the securities markets as “the large institutions where many independent buyers and sellers meet. It is easy for the newcomer to enter the market and for others to leave it”³⁸.

³⁷ “Dictionary of Modern Economics”, 2nd edition, New York: McGraw Hill, 1973. p.530.

³⁸ Francis J., “Investments: Analysis and Management”, 4th edition, New York: McGraw Hill, 1986. p.526.

Frederick defined the securities market as any place where buyers and sellers come together to trade in securities³⁹.

The security markets can be classified according to the maturity of the securities traded. If this maturity is less than one year the security is traded in the money market, and if the maturity is more than one year it is traded in the stock markets.

Generally speaking, the stock market is the market of long term debt instruments or for tradable assets like securities. Therefore, the capital market can be defined as the market which contains the security market and the money market.

For the purpose of this study the discussion will focus on the stock market, mainly securities as an asset or as investment instrument traded in the stock market. Therefore, other instruments which are also traded in the stock market, will not be discussed in this context.

The stock market, on the other hand, can be classified according to the type of securities traded as follows:

1. Primary Markets: where new issues are underwritten. In fact the primary market is the first step in the trading of securities. Most of the new issues (new stocks) in the world are sold to investors both directly by the issuers and indirectly through the financial intermediaries and dealers⁴⁰.

Levy and Sarnat defined the primary market as follows: "The primary market for securities is the new issues market which brings together the 'supply and demand' or 'sources and uses' for new capital funds"⁴¹.

"The security at the time of initial sale is called a primary security and the market that facilitates this sale is called a primary market"⁴².

³⁹ Frederick, "Investment: an introduction to analysis and management", New Jersey: Prentice-Hall, 1978. p.17

⁴⁰ Dougall, "Capital Market and Institutions", London: Prentice-Hall, 1965. p.123.

⁴¹ Levy and Sarnat, "Portfolio and Investment Selection: theory and practice", New Jersey: Prentice-Hall International, 1984. p.3.

⁴² Jones, "Macrofinance", Massachusetts: Winthrop Publishers, 1978, p.170.

2. **Secondary Market:** This market always takes place in the official market or in the organized stock market. When securities are traded in the organized market, it is called a secondary market. This market deals with existing securities rather than new issues. "Securities exchanged subsequent to their initial sale are called secondary securities and the markets that facilitate these exchanges are called secondary markets"⁴³.

Figure 5.A shows the functions of the primary and secondary markets.

3. **Over-the-Counter Market:** This is the unorganized secondary market and is not located in a specific place. Francis described the over-the-counter market as "more a way to do business than it is a place"⁴⁴.

In fact, on the secondary market listed securities are bought and sold on an auction basis through brokers, but on the over-the-counter market these transactions are made by negotiations between buyers and sellers through dealers acting as principals.

In the USA, there are two more markets involved in security dealings. First, there is the 'third market' which can be defined as an over-the-counter market exchanging listed securities and which is a subset of the secondary market. Francis argued that the third market is not as well-known as the secondary market, but by 1975 it had reached its peak⁴⁵. Then there is the 'fourth market'; a communications network between investment institutions (another subset of the secondary market). Figure 5.B shows the relationship between the different kinds of stock market.

5.2 THE ROLE OF THE STOCK MARKET:

The major socio-economic role of the stock market is to evaluate securities immediately after they enter the market. The evaluation of these securities, therefore, should reflect the facts of the financial position of their companies. However, one does not expect the stock market to give each share its real value but one should demand at least that the market price of stocks reflects the information

⁴³ Jones, op. cit., p.170.

⁴⁴ Francis, op. cit., p.61.

⁴⁵ Ibid., p.72.

Figure 5.A: Primary and secondary markets.

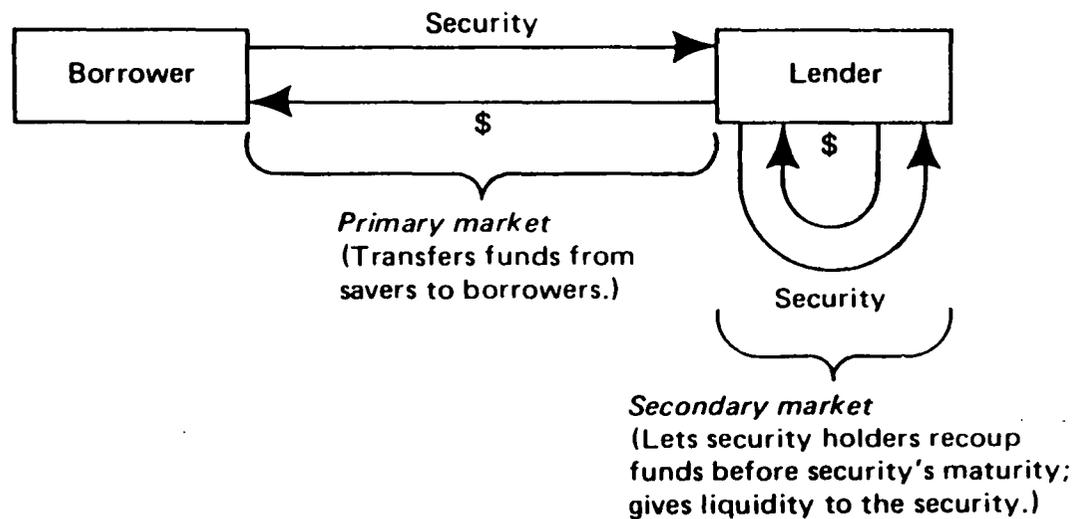
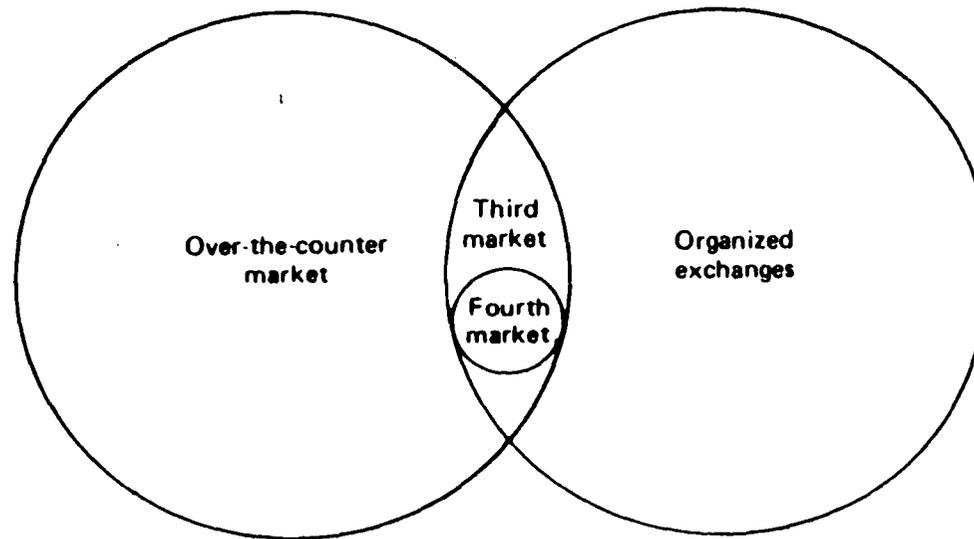


Figure 5.B: Subsets of the secondary markets.



Source: Francis, Investments: analysis and management, 2nd.ed., New York: Mc Graw-Hill, 1987. p.72.

concerning these stocks. Another important role for the stock market is to channel the money from the surplus units to the deficit units which can use them more profitably. In fact, stocks are a form of financial assets used for the financing of a modern economy. In other terms, financial assets are claims or obligations on the deficit units held by the surplus ones. Also, the market should be a well-run market place where the traders can enter or leave freely.

Fama (1970) argued that “the primary role of the capital market is the allocation of ownership of the economy’s capital stock”.

Lloyd (1977) argued that “the role of the stock market within an economy is intimately connected with finding a positive and constructive role for private investment within that economy”⁴⁶.

Levy and Sarnat (1984) argued that the purpose of the stock market “like any other organized market, is to enable buyers and sellers to effect their transactions more quickly and cheaply than they could otherwise”⁴⁷.

In order that the stock market can do its job in evaluating securities, one needs a perfectly competitive and well run stock exchange mechanism for which the desirable conditions are⁴⁸:

1. The commodities traded in the market must be homogenous.
2. There must be a large number of buyers and sellers, so that no single buyer or seller can affect the price by his action.
3. There must be no restriction to entering or leaving the market.
4. There must be a plentiful supply of stocks and shares.
5. There must be perfect knowledge.

Firth (1977) argued that “the major stock exchanges of the world have broadly

⁴⁶ Lloyd, ‘Efficiency of financial institutions’, *The Investment Analyst*, No.47, May 1977, p.5.

⁴⁷ Levy and Sarnat, *op. cit.*, p4.

⁴⁸ Briston, “The Stock Exchange and Investment Analysis”, 3rd edition, London: George Allen and Unwin, 1975. p.114.; Firth, “The Valuation of Shares and the Efficient Market Theory”, London: Macmillan, 1977. p.2.

met the first four requirements and impose no serious constraints on the functioning of the stock market”⁴⁹. However, Firth’s point of view is that the fifth condition, perfect knowledge, requires that all knowledge relating to the value of a company (for example future earning, asset values), is known and that this knowledge is accurately conveyed in share prices. Obviously this requirement is not met in the case of ordinary shares. However the major stock markets of the world, that is, those that have “succeeded”, have managed to provide “reasonable” share pricing⁵⁰.

5.3 THE MARKET QUALITIES:

In order to evaluate the Kuwait Stock Market it is useful to give a brief theoretical background about market qualities.

There are two kinds of market qualities. The first one is the depth market, or strong market: “a market that is deep has buy and sell orders for the asset traded in that market that continuously exist both above and below the market price”⁵¹. The second market is called the shallow market: “The market prices of assets traded in shallow markets typically jump about in an erratic and disconcerting fashion because there are few orders to buy and sell and the price range between these sparse orders is wide”⁵².

Figure 5.C shows the differences between the depth markets and the shallow markets. In the depth market the offered price (PA) is lower than that in the shallow market. The bid price in the depth market is higher than that in the shallow market. Also, the difference (PA - PB) in the depth markets is less than that in the shallow market. The quantity in the depth market Q4 is more than the quantity in the shallow market Q1. Therefore the difference between the asked price and the bid price in the strong market is smaller than that in the weak market, but the equilibrium price is the same in both markets.

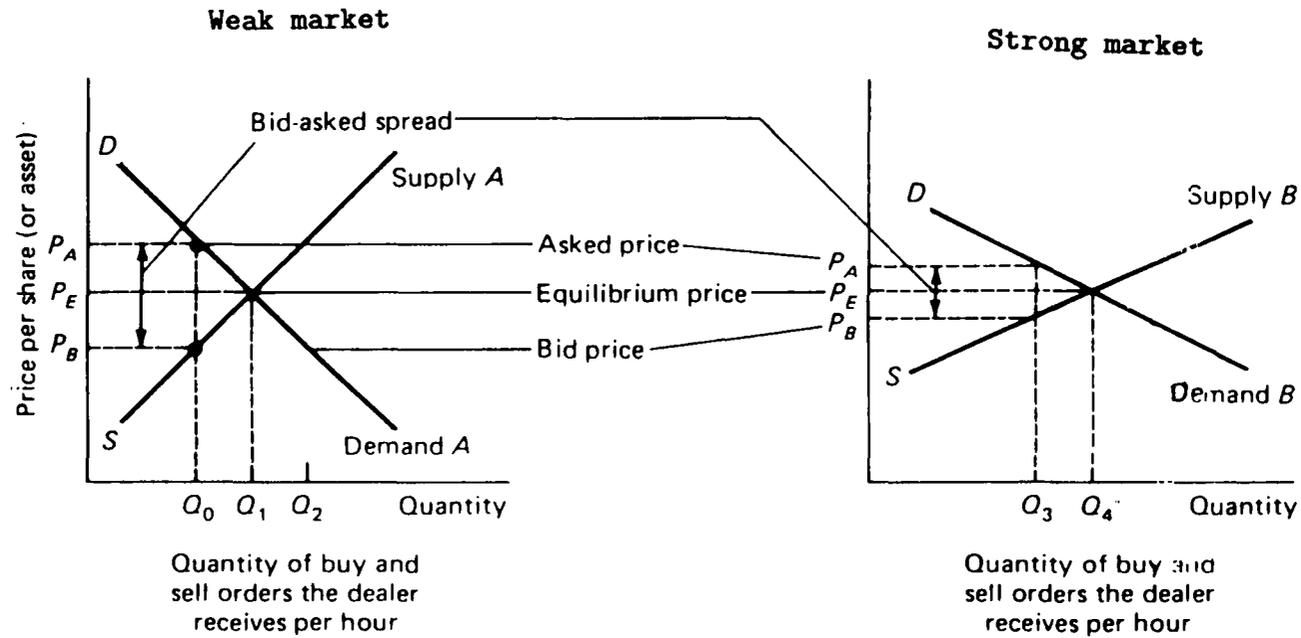
⁴⁹ Firth, op. cit., p.2.

⁵⁰ Firth, op. cit., p.3.

⁵¹ Francis, op. cit., p.80.

⁵² Ibid., p.80.

Figure 5.C: Supply and demand schedules for the same asset in a weak and a strong market.



Source: Francis, Investments: analysis and management, 2nd.ed., New York : Mc Graw-Hill, 1987. p.79.

5.4 THE EFFICIENT MARKET HYPOTHESIS (EMH):

An efficient market has been defined by several researchers, yet the most generally accepted definition was that offered by Fama in 1970⁵³:

“Market efficiency requires that in setting the prices of securities at any time, the market correctly uses all available information.”

Another useful definition is from Jensen⁵⁴:

“A market is efficient with respect to a given information set $\theta(t)$ if it is impossible to make profits by trading on the basis of that information set $\theta(t)$. By economic profit is meant the risk-adjusted return net of all costs.”

Three forms of efficiency have been identified in the stock markets. These forms are as follows:

5.4.1 Weak Form;

The most useful definition was stated by Keane⁵⁵, as follows;

“The market is efficient in the weak sense if share prices fully reflect the information implied by all prior price movements. As a result, investors are unable to profit from studying charts of past prices”. The weak form asserts that current prices fully reflect the information implied by the historical sequence of prices.

5.4.2 Semi-strong Efficiency Form:

The semi-strong efficient market is a market whose prices fully reflect all public information, or the current prices reflect public knowledge about the listed companies in that market.

Fama (1970) defined the semi-strong efficient market as: “a semi-strong form, in which the concern is whether prices are efficiently adjusted to other information

⁵³ Fama, ‘Reply’, *Journal of Finance*, 31, 1976, pp.143-144.

⁵⁴ Jensen, ‘Some anomalous evidence regarding market efficiency’, *Journal of Financial Economics*, Vol.6, 1978, p. 96.

⁵⁵ Keane, “Stock Market Efficiency”, Oxford: Philip Allen, 1983. p.10.

that is obviously publicly available (e.g.announcements of annual earnings, stock split, etc.)”⁵⁶. This information may be economy wide, industry wide, or firm specific news.

In fact this hypothesis is concerned with the reaction of the price of the listed securities or stocks to new public information. If the prices fully reflect this information, then the market is a semi-strong efficient market.

5.4.3 Strong Efficiency Form:

The strong efficiency form stresses that not just public information is fully reflected in security prices, but also what may not be known generally.

In the strong form of an efficient market, the concern is whether any given investors or groups have monopolistic access to any information relevant to the formation of prices⁵⁷.

Francis argues that the strong efficiency market is sometimes called a perfectly efficient market where prices and values are always equal as they fluctuate randomly together as new information arrives⁵⁸.

Keane argues that these levels of market efficiency are not independent of one another. For example, for the market to be efficient in the semi-strong form it must also be efficient in the weak sense. Because “if price movements follow a predictable path which the perceptive observer can exploit profitably, the implication is that the price has reacted slowly or capriciously to published information. Like-wise, for the market to be efficient in the strong sense, it must also be efficient at the two lower levels, otherwise the price would not capture all relevant information”⁵⁹.

Table 5-1 shows the three different categories of the efficient market hypothesis.

⁵⁶ Fama, ‘Efficient capital market: a review of theory and empirical work’, *Journal of Finance*, Vol.25, May 1970, p. 387.

⁵⁷ Fama, op. cit., p.383

⁵⁸ Francis, op. cit., p.549.

⁵⁹ Keane, op. cit.,pp.10-11

TABLE 5-1: Efficient Market Hypothesis

(Prices fully reflect all available information)

Weak form	Semi-strong form	Strong form
Prices fully reflect past prices.	Prices fully reflect all publicly available information.	Prices fully reflect all information.

Source: Rutterford, "Introduction to Stock Exchange Investment", London, Macmillan, 1983. p.258.

5.5 CONDITIONS OF AN EFFICIENT MARKET:

Several researchers, including Fama⁶⁰ (1970), Kihlstrom and Mirman⁶¹(1975) thought that there may be some pre-requisites without which the efficient market hypothesis would not hold. These conditions can be summarised as follows:

1. The transactions in the market are free and without any costs.
2. The information should be available to all market participants and without any cost.
3. All agree on the implications of current information for the current price and distribution price of each security.

Fama noticed that⁶², "these conditions are sufficient for market efficiency, but not necessary".

⁶⁰ Fama, op. cit., pp. 387-417.

⁶¹ Kihlstrom and Mirman, 'Information and market equilibrium', The Bell Journal of Economics, Spring 1975.

⁶² Fama, op. cit., pp.387-417.

5.6 THE RANDOM WALK THEORY:

According to Fama⁶³ the Random Walk Hypothesis states that “the future path of the price level of a security is more predictable than the path of a series of cumulated random numbers”.

The idea underlying this theory was first put forward by Bachelier in 1900 in relation to commodities traded on the French commodity markets. More tests have been carried out on both the USA and UK stock markets using statistical techniques (serial correlations, charts, and run tests). These tests have confirmed that share prices do on the whole follow a random walk. These tests have been done by Tinbergen (1933,1939), Alferd Cowles (1933), Cowles and Jones (1937), Praetz (1969), Jennergren and Korsvold (1973), Gandhi, Saunders and Woodward (1980), Cooper (1982), Doods (1983) and more papers in this area have appeared since.

The random walk model is probably the simplest economic model of stock price behaviour. In statistical terms, the hypothesis states that successive price changes are independent, identically distributed random variables. Hence the best linear forecast of tomorrow's price is today's price.

Mathematically, this model may be expressed in a number of ways, but the simplest form is given by the following equations;

$$P(t) = P(t - 1) + E(t) \quad (5.1)$$

or

$$P(t) - P(t - 1) = E(t) \quad (5.1)$$

which may also be written as

$$\log P(t) - \log P(t - 1) = n, \quad (5.2)$$

where $P(t)$ is the price of shares at time t , and $P(t - 1)$ gives the price of the shares in the immediately preceding period. E and n are uncorrelated, zero mean random variables.

⁶³ Fama, 'The behaviour of stock market prices', Journal of Business, Volume 38, 1965, pp.34-105.

Two groups of tests are usually applied to ascertain whether the differences in share prices are independent random variables. The first group used the statistical techniques which are applied to a time series of price or index changes to establish independence, while the other group consists of testing stock market trading rules based upon historical price data which purport to outperform a random portfolio of shares.

In the next chapter the Kuwaiti Stock Market will be tested by using the model given by equation (5.1).

SECTION II : THE STOCK MARKET AND THE REAL ECONOMY

The purpose of this section is to give a brief summary of the theoretical and empirical background of the relation between stock prices and some macro economic variables, such as monetary, national economy, fiscal and other important macro economic variables. The following is a brief summary of the relationship between stock prices and these variables.

5.7 Money and Share Prices:

5.7.1 The Theory;

There are two theories explaining the relationship between changes in the money supply and share prices. The first theory is called the quantity theory⁶⁴. This theory argues that changes in the money supply precede changes in stock prices (at least in broad terms). According to this theory, if the money supply increases this will lead to an increase in the demand for financial assets, because investors will try to keep their money in other assets and stock will be one of those assets. In fact, when the supply of money expands the investors' portfolio, which normally contains cash as well as other assets, is thrown out of balance. Consequently, the investors will shift out of cash holdings to other financial assets and current consumption. Therefore, the prices of these assets and consumption are built up until a new equilibrium is reached. In addition, the relationship between stock prices and money supply can be drawn from the quantity theory of

⁶⁴ Rozef, 'Money and Stock Prices', Journal of Financial Economics, Vol. 3, Sept. 1974, p.246.

money. It is worth mentioning here that this theory has played an important role in determining the relation between money supply and different economic variables. Rozeff (1974) reported that the model of this theory (Monetary Portfolio Model) has been developed by Burnner (1961), Friedman (1961), Friedman and Schwartz (1963), Sprinkel (1964), and Cagan (1972). Among modern economists, Burger (1971) called the model the portfolio theory of monetary policy. Tests of this model, as applied to stock prices, have concluded that:

1. changes in monetary variables do result in stock-price changes; and
2. changes in monetary variables, on average, lead to changes in stock prices⁶⁵.

Saunders and Woodward (1976) reported that the “sum results from USA regression studies appear to show that there has been a direct and stable relationship between current and past changes in (variously defined) money supply variables and current changes in stock prices over most of the post-war period”. They added that this “evidence has provided strong support for the quantity theorists’ view as to the transmission mechanism between money and share prices”⁶⁶.

The second theory is the efficient market theory. This theory postulates that if the stock market is efficient then the actual prices of shares reflect the information. “In this case the money supply should reflect instantaneously the changes in share prices”⁶⁷.

According to Fama, this model can be called the EM model (Efficient Market model). In an efficient market available information concerning changes in monetary policy is fully reflected in current stock prices. In fact, both models are widely known and accepted in economic fields.

From the previous theoretical review it can be concluded that the relation between money variables and stock market can be derived from two theories. The first one is related to the economic theory (the quantity theory), and the second one is from the finance theory (efficient market theory).

⁶⁵ Fama, op. cit., p.387-88.

⁶⁶ Saunders and Woodwards, op. cit., p.25.

⁶⁷ Saunders and Woodwards, ‘Money supply and share prices: the evidence for UK in the post-ccc period’, The Investment Analyst, No. 46, December 1976. p,24.

5.7.2 Empirical Review;

The relationship between money supply and stock market prices have been examined by several researchers. The most important work was done by Sprinkel (1964), Palmer (1970), Keran (1971), Homa and Jaffee (1971), Hamburger and Kochin (1972), Saunders and Woodward (1976), Cooper (1977), and Friedman (1988). All of them expected that there would be a strong relationship between money supply and stock prices. Their work confirmed this hypothesis with the evidence. It is worth mentioning that these authors, by using different models, examined the same hypothesis which stresses that “changes in money supply precede changes in stock prices”. The following is a brief summary of their works.

Sprinkel (1964) argued that when money supply increases, investors will increase their demand for stock which will lead to an increase in stock prices. Sprinkel’s point of view is that we can predict stock-price changes by using the past money supply changes. He used a regression model to test the relationship between money supply and the stock price index in the USA. His conclusion was that “a bear market in stock prices was predicted fifteen months after each peak in monetary growth, and a bull market was predicted two months after each monetary growth trough was reached”⁶⁸.

Another study in this field was carried out by Palmer (1970) using a single regression equation between changes in money supply in its narrow definition (M1) and changes in Standard and Poors (SP) index. His model was based on a Quantity theory model and takes the form:

$$\Delta SP = a + \Delta M1,$$

where SP denotes the Standard and Poors index and M1 is the money stock according to the narrow definition.

He used monthly data for the period January 1966 - August 1969. His results showed that the coefficient of the money stock (M1) was large and it indicates that

⁶⁸ Sprinkel, “Money and Stock Prices”, Illinois: Rihard Irwin Inc., 1964.

if the changes in money supply (M1) increased by one it would lead to a 10 per cent change in stock prices within one month. The R statistic⁶⁹ is 0.61.

Keran (Jan 1971) estimated two regression models. The first model takes the form:

$$SP_t = a_0 + a_1 \sum_{i=0}^1 R_{t-i} + a_2 \sum_{i=0}^{19} E_{t-i},$$

where R = AAA bond rate, and E denotes the net tax earnings.

He expected the a_1 sign to be negative and a_2 to be positive. He tested this model by using the USA quarterly data over the period 1956-1970. In the first equation the risk-free yield is measured by the corporate AAA bond rate and the expected earnings are measured as a weighted sum of current and post corporate profits after tax (E). Keran obtained:

$$SP = 12.33 + 16.27R + 4.44E$$

$$R^2 = .94 \quad , \quad SEE = 4.7 \quad , \quad DW = .74$$

Constraints: 6th degree polynomial for E and 2nd degree polynomial for R.

Thus DW indicates autocorrelation. His second model took the form,

$$SP = a_0 + a_1 \sum_{i=0}^2 \dot{M}_{t-i} + a_2 \sum_{i=0}^7 \dot{Y}_{t-i} + a_3 \sum_{i=0}^{16} \dot{P}_{t-i} + a_4 \sum_{i=0}^{19} e_{t-i},$$

where \dot{M} gives the growth in money supply (M3), \dot{Y} denotes a real growth component of changes in real seasonally adjusted GNP, and \dot{P} is the GNP deflator.

In his second model, Keran replaced the long term bond rate AAA by its determinants – the rate of growth of real income (\dot{Y}), the percentage change in real money balances (\dot{M}) and the expected rate of inflation (\dot{P}).

By testing this model over the same period Keran obtained:

$$SP = -30.68 + 1.31 \dot{M} - 5.37 \dot{Y} + 11.96 \dot{P} + 4.8 e_{t-i}$$

$$R^2 = .98 \quad , \quad SEE = 2.49 \quad , \quad DW = 1.71$$

⁶⁹ Palmer, 'Money supply, portfolio adjustments and stock prices', Financial Analysts Journal, Jul/Aug 1970, pp.19-22.

In fact Keran's second model had significant results. The signs as expected and R^2 were quite good, while DW improved to 1.71. He concluded that the effect of money supply on the stock market is largely indirect. The major indirect influence on stock prices is through their effect on inflation and corporate earning expectations⁷⁰.

Homa and Jaffee (Dec 1971) tested the relationship between the Standard and Poors (SP) stock index and money supply in the USA. They used a regression model to examine this relationship using quarterly data over the period 1954-1969. Their results showed that the coefficient of the growth rate (current and lagged one quarter) was positive and significant. Also, the explanatory variable explained 96 per cent of the variation in the stock index (SP). In fact, this model has been used for a long time as a forecasting model for future changes in the USA stock market prices⁷¹.

The form of Homa and Jaffee's model is as follows;

$$SP = a_0 + a_1 M_t + a_2 \dot{M}_t + a_3 \dot{M}_{t-1} + a_4 U_{t-1},$$

where \dot{M}_t gives the growth rate in money supply and U_{t-1} is the lagged error term.

They obtained the following results:

$$SP = -26.77 + .61M + 3.14\dot{M}_t$$

(4.13) (3.16)

$$+ 1.46 \dot{M}_{t-1} + .87 U_{t-1}$$

(1.46)

$$R^2 = .968 \quad , \quad SEE = 3.7 \quad , \quad DW = 2.14$$

The previous results indicate that the coefficients are statistically significant. The DW indicates no autocorrelation.

⁷⁰ Keran, 'Expectations, money and stock market', Federal Reserve Bank of St. Louis Review, USA, 1971.

⁷¹ Homa and Jafee, 'The supply of money and common stock prices', Journal of Finance, Vol.26, December 1971. pp.1045-66

Hamburger and Kochin (1972), argued that the past change in money supply affected stock market prices (SP)⁷². Changes in the stock of money affects, in different ways, all determinants of equity prices: the risk-free yield, earnings expectations and the risk premium. In fact, the U_{t-1} included in their model serves to reduce the very high serial correlation. They examined the relationship between changes in money supply and the stock market index (SP) in the USA. Their data was quarterly and it covered the period 1956-1970. Their model took the form:

$$SP = a_0 + a_1 P_t + a_2 R_t + a_3 \sum_{i=0}^2 \dot{M}_{t-i} + a_4 \sum_{i=0}^7 \dot{Y}_{t-i} + a_5 \sum_{i=0}^{16} \dot{P}_{t-i} + a_6 \sum_{i=0}^6 e_{t-i},$$

where P gives the current price level, R is the bond rate, M denotes the money supply, Y stands for the GNP deflator and e means the net of tax corporate earnings.

They obtained the following results;

$$SP = -77.93 + 1.45P + 9.67R + 7.03\dot{M} - 4.14\dot{Y} + 2.43\dot{P} + 1.42e$$

$$R^2 = .985 \quad , \quad SEE = 2.3 \quad , \quad DW = 1.82$$

The results showed that the signs were as expected. In fact, the coefficient of the explanatory variables indicated that money has a direct and indirect effect on stock prices. The results also showed an important effect of the lag of money growth rate on current changes of the Standards and Poors index with 26 per cent.

Saunders and Woodward (1976), by using monthly data for the period October 1971- December 1975 , conducted some empirical tests on the stock market in the UK. Their approach was basically investigative in the sense that they sought a systematic relationship between current changes in the Financial Times Share Index (650) and current and past money supply variables. Their explanatory variables were M1 and M3 and the changes in them. They obtained the following

⁷² Hamburger and Kochin, 'Money and stock prices: the channels of influence', Journal of Finance, Vol.27, No.2, May 1972, pp.230-49.

results:

$$\Delta FT = .784 - .001 M1$$

(0.01)

(5.3)

$$R2 = .002 \quad , \quad DW = 2.0$$

$$\Delta FT = 4.01 - .0002 M3$$

(.00035)

(5.4)

$$R2 = .005 \quad , \quad DW = 2.01$$

$$\Delta FT = -3.17 + 0.018 \Delta M1$$

(0.014)

(5.5)

$$R2 = .035 \quad , \quad DW = 2.08$$

$$\Delta FT = -0.789 - 0.001 \Delta M3$$

(0.0007)

(5.6)

$$R2 = .0003 \quad , \quad DW = 2.01$$

$$\Delta FT = -1.14 + 145.5 \Delta M1$$

(101.84)

(5.7)

$$R2 = .04 \quad , \quad DW = 1.9$$

$$\Delta FT = 1.33 - 172.36 \Delta M3$$

(199.15)

(5.8)

$$R2 = 0.015 \quad , \quad DW = 1.96$$

$$\Delta FT = 0.8 + 151.8 \Delta M1 + .056 \Delta FT_{t-1}$$

(.001) \quad (0.144)

(5.9)

$$R2 = .055 \quad , \quad DW = 1.92$$

$$\Delta FT = 2.64 - 0.0003 M1 + 114.52 \Delta M1 - 79.18 \Delta M1_{t-1}$$

(.001)
(118.24)
(118.01)

(5.10)

$$R2 = .055 \quad , \quad DW = 1.96$$

where M1 gives the money supply in its narrow definition and $\Delta M1$ denotes the changes in M1. Similarly M3 gives the money supply according to the third definition and its changes are given by $\Delta M3$. FT is the Financial Times index, FT_{t-1} gives share price index lagged by one month, and changes in FT are given by ΔFT . The standard errors in estimates are given in paranthesis.

As can be seen from the previous results there is no significant statistical relationship between either M1 or M3 with the share price index.

“The poor explanatory power of these equations clearly indicates that either some independent determinants of UK share prices have been ignored, or the UK stock market is highly efficient”⁷³.

Cooper (1977a) carried out an empirical study to examine the relationship between money supply and stock market prices in the UK. He used quarterly data over the period 1952-1971. However, the most important work in his paper was the following:

$$\ln FT = a + a_1 \ln M_t + u_t,$$

where FT stands for the Financial Times 30 share index and M denotes the money supply. T statistics are shown in paranthesis.

The following results were obtained;

(**For the Period 1952 - 61**):

$$\ln FT = -49.06 + 6.33 \ln M$$

(20.4)

$$R2 = .92 \quad , \quad SEE = .10 \quad , \quad DW = .72$$

⁷³ Saunders and Woodward, op. cit., p26.

(For the Period 1962-71):

$$\ln FT = -2.02 + 0.89 \ln M$$

(5.5)

$$R2 = .46 \quad , \quad SEE = .12 \quad , \quad DW = .33$$

(For the Period 1952-1971):

$$\ln FT = -13.16 + 2.15 \ln M$$

(14.3)

$$R2 = .73 \quad , \quad SEE = 0.22 \quad , \quad DW = .09$$

These results show that the equations are reasonably well determined in the sense of having a high explanatory power and all the individual coefficients are statistically significant. However the DW, for all equations is weak.

Cooper (1979b) argued that the relationship between money supply and stock prices in the USA and the UK has "elicited a considerable volume of research"⁷⁴. Therefore he tested the relationship between money supply and the stock prices for all world stock markets (48) except Costa Rica, Kuwait, Paraguay, Saudi Arabia and Trinidad. He used the following model:

$$\Delta PT = a + b\Delta M_{it} + e_{it},$$

where PT is the first difference of the natural logarithms of and index of ordinary stocks, $\Delta M_{it} = \ln M_{it} - \ln M_{it-1}$ and a, b are parameters and e_{it} is the random error term.

He ran this model over two periods. His results showed that 20 out of 48 b 's had a positive sign, 7 of which were statistically significant at the the 5 percent level. In all equations the R2 is very low (.00 - 0.21). In the second period he had

⁷⁴ Cooper, 'Money and stock prices; some international evidence', The Investment Analyst, No 53, May 1979, p.33.

the same statistic problems. 7 *b*'s out of 48 were significant and the R² varied from .00 to .14. In fact, the results were very poor. His results suggested that the stock prices do not lag behind money supply.

Friedman (1988) did some empirical tests to examine the role of the real stock price as a variable in the demand function for money. Quarterly data was used for the period 1961-1986 to examine the relationship between the real quantity of money demanded (defined as M2) relative to income with the deflated price of shares (Standard and Poors composite) in the USA. He concluded that "the real quantity of money (M2) demanded relative to income is positively related to the real stock price, three quarters earlier, and negatively related to the contemporaneous real stock price. The positive relation appears to reflect a wealth effect, the negative a substitution effect"⁷⁵. Finally, he said that these results raised some puzzles that he had not been able to resolve.

Hashemzadeh and Taylor (1988) undertook an empirical study to examine the relationship between the supply of money and stock price levels and also between the level of interest rates and stock prices in the USA. The theoretical background of their work was drawn from the quantity theory. They also examined the direction causality between money supply, stock prices and interest rates. They used the Granger-Sims test for determining unidirectional causality. They found that "the relationship between the money stock prices is characterized by a feed back system with money supply causing some of the observed variations in the stock price level and vice versa"⁷⁶. They concluded that "although weekly money supply figures were statistically related to stock prices, the hypothesised relationship cannot be adequately explained by using single cause explanatory models". Accordingly they recommended the use of money supply as well as other macro economic variables, as they believed that this will improve the results.

5.7.3 National Economy and Stock Market:

The stock market is now widely recognised as a leading indicator of the economy. Like the economy, it moves in a series of cycles, rising and falling in a broadly

⁷⁵ Friedman, 'Money and the stock market', *Journal of Political Economy*, Vol.96, No.2, 1988, p.239.

⁷⁶ Hashemzadeh and Taylor, 'Stock prices, money supply and interest rates: the question of causality', *Applied Economics*, Vol.20, No.12, 1988, pp.1603-11.

rhythmical manner. In fact, the cycles traced by the stock market are generally believed to reflect those of the economy⁷⁷.

On the other hand , there is much research that supports the notion that the stock market is a leading indicator of economic activity⁷⁸.

Al-Shamali (1988) argued that the fundamental relationship between the stock market and the economic activity has important divisions. First, there is concrete evidence that stock prices are important in the sense of reflecting real economic variables. Second, it helps in explaining why the stock market is followed with concern by so many people⁷⁹. Several studies investigating this relationship between stock prices and the national economy found out that changes in stock market prices tend to precede changes in business conditions⁸⁰. Moreover, the practical experience of the major world stock markets nowadays has confirmed this relationship. The most serious empirical studies in this field can be summarized as follows :

Solomon (1955), analysed the relationship between common stock prices and economic growth in the USA. He examined the relationship between changes in GNP and changes in the level of Standard and Poor's Index of 425 industrial stock prices. In order to remove the effects of change in the price level both series were deflated by the same price index. He concluded that "over the period as a whole, the real growth in stock values has proceeded at about two-thirds of the trade of the real growth in GNP"⁸¹. Solomon did not forecast the future course of the stock prices or of the economy.

Weston (1956) dealt with the same subject as Solomon. He pointed out that there is a close relationship between GNP and sales by businesses and a close relationship between profits and dividends. Finally, there is also a close relationship between dividends and stock prices. He also pointed out that these results led to

⁷⁷ Clarke, 'Economic and stock market cycles', *The Investment Analyst* , No 58, Oct.1982, p.24.

⁷⁸ Hashemzadeh and Taylor, op. cit. p1604.

⁷⁹ Al-Shamali, "Weak Form Efficiency and Factors Leading to Market Efficiency in the Kuwait Stock Market", Ph.D. dissertation, UK: Loughborough, 1989. p. 10.

⁸⁰ Moone, 'Stock prices and the business cycle', *Journal of Portfolio Management*, No.1 (spring 1975), pp59-64.

⁸¹ Solomon, 'Economic growth and common stock value', *Journal of Business*, Vol.28, No.3, Jul.1955, pp.123-21

the conclusion that there is a close relationship between GNP and the level of stock prices.

5.7.4 Fiscal Policy and Stock Prices:

Fiscal policy can affect stock prices through two channels. First, it can affect the semi-strong market efficiency through the information of the government budget deficit. As mentioned earlier, the semi-strong efficiency market (SEM) stresses that the stock market prices reflect all the available public information. The second channel through which the fiscal policy can affect the stock is when the government decides to finance its deficit by issuing bonds and Cd's. It is well known from public finance literature that the government can cover its deficit in several ways. The most common are the following:

1. Increasing tax rates.
2. Creating money.
3. Cutting its expenditure.
4. Issuing bonds and Cd's.

In fact, if the government decides to finance its budget by issuing bonds or Cd's, stock prices would be affected because the government financial instruments are less risky than stock. Therefore, some investors will transfer their money from stock as an asset to government bonds. It is worth mentioning that the decision of investors in this case depends on many conditions. One of these conditions is whether the yield of the government bonds is more or less than that investors expect from their stock. The second factor which might affect the decision is the inflation rate, which should be taken into consideration in both cases.

One of the most important studies in this field was made by Darrat in 1988. By using quarterly data over the period 1960-84, he conducted an empirical study to test the relationship between a number of important macro economic variables (including monetary and fiscal policy actions) and stock prices in the case of Canada.

The following equation explained Darrats' results:

$$SP = 0.081 + 3.939 HF + 0.607 MG + .720 r - 0.037 INF$$

$$R2 = .36 \quad , \quad Se = .0656 \quad , \quad DW = 1.86$$

where SP now gives the growth rate of stock prices, MG gives the growth rate of money stock, HF denotes the change in the real high employment budget deficits expressed relative potential GNP, INF stands for inflation and r gives the short term interest rate.

Darrat concluded that fiscal policy plays an important role in determining stock returns, even when the path through interest rates is excluded⁸².

5.8 SUMMARY AND CONCLUSIONS:

This chapter started with a theoretical background of the main features of the stock market. It showed the definition of the stock market and its classifications, the primary markets where new issues are under written, the secondary market which always takes place within the official market, and the over-the-counter market which is the unorganised market.

In this chapter the role of the stock market has been discussed. This role is basically to evaluate securities immediately as they enter the market. The major desirable conditions of a well run stock market are: homogeneity, there must be many buyers and sellers, no restrictions and a good knowledge.

In addition, there are three forms of market efficiency hypothesis. It was stated that the weak-form efficiency arises when current prices fully reflect the information implied by the historical sequence of prices. The second form is the semi-strong efficiency which stresses that prices fully reflect all the public information. Finally, there is the strong form efficiency which postulates that it is not just public information which is fully reflected in stock prices, but also what may not be known generally.

⁸² Darrat, 'On fiscal policy and the stock market', Journal of Money, Credit and Banking, Vol.20, No.3, Aug.1988., pp353-63

In this chapter, some of the major empirical tests of the relation between stock prices and some macro economic variables were also reviewed. It was found out that most studies in this area were made in order to examine the relationship between stock prices and monetary policy. Very little attention was given to examining the relationship between stock prices and other macro economic variables. Some of the researchers who were involved in these studies concluded that there was a relationship between stock prices and some macro economic factors (variables), such as monetary and fiscal factors, GNP, inflation etc. For example, Sprinkel (1964), Palmer (1970), Keran (1971), Homa and Jaffee (1971) and Hamburger and Kochin (1972) concluded that money supply changes precede stock price changes. However, Darrat (1988) went forward to conclude that the fiscal policy does affect the stock prices.

In the next chapter the relationship between stock prices and some important macro-economic variables in Kuwait will be examined.

Chapter VI

THE EFFECT OF ECONOMIC FACTORS ON SHARE PRICES: ANALYTICAL PERSPECTIVES

This chapter consists of two sections. The first section will focus on previous quantitative research about the Kuwait stock market. This research has been done by Khouja and Said (1974), Fahmi (1982), Slameh (1986), Behbehani (1987) and Hijazi (1988). Khouja and Said (1974) and Hijazi (1988) carried out empirical studies related to the same theoretical background. Also, their hypotheses were the same, and they argued that there was a significant relationship between stock prices and some micro variables such as the book value, nominal value and dividend per share.

These studies have, in fact, applied the weak efficiency form. As mentioned in Chapter V, the weak efficiency form stresses that the stock prices fully reflect the information implied by all prior price movements. However, many economists believe that there is some "true value" for the stock and the price should be equal to this true value. This means that the current stock price should reflect the present and future dividend and earnings.

Fahmi, Slameh and Behbehani, on other hand, conducted empirical studies to examine the relationship between stock prices and some macro economic variables. Most of the equations they applied were related to the quantity theory. This theory, as was discussed in the previous chapter, stresses that if the money supply increases, the investor will exchange his money in a variety of asset markets, that is bonds, stocks, real estate, capital goods and human capital. Also, it is worth mentioning that some equations which were used in their work were related theoretically to the semi-strong efficiency form which has been explained in Chapter V.

The second section will analyse the economic factors that affect share prices and explain specifically the relationship between some macro economic variables and the stock price index. Also, some empirical tests will be conducted to examine the relationship between money and stock prices in the Kuwait stock market.

Section I

6.1 OVERVIEW:

Previous econometric work on the stock market in Kuwait can be summarised by the following;

(1) Khouja and Said (1974), used cross-section data for two periods. They tested the relationship between some micro-economic variables (for example book value, nominal value, and dividend per share) and stock market prices. Their work contained eighteen equations. The first ten equations were single regression models relating the average price of shares to the following variables: book value, book value/nominal value, dividend per share, dividend per share/nominal value, earnings per share, and earnings per share/nominal value. The results of these equations – for the period Dec 1972-Feb 1973 – were: R^2 ; .44, .62, .68, .20, and .29, respectively. All of the individual coefficients were statistically significant in the sense that their standard errors are equal to or less than half their values, that is, they had t-statistic of two or more. In fact the R^2 of the last two equations was very low. They repeated the same test by using the prices for the fourth quarter of 1973 and they found these results: R^2 ; .31, .27, .47, .48, .29, .21, and .31 respectively. Also, the estimated coefficients are statistically significant for all equations. The above results indicate that earnings per share play a big role in determining stock prices in Kuwait. Finally, the last eight equations were two-variable regression models and their results can be summarised as follows;

For the period Dec 1972-Feb 1973;

$$\begin{aligned} \text{PM} &= 6.267 + 1.029 \text{ B} + 16.342 \text{ D} \\ &\quad (2.469) \quad (4.761) \end{aligned} \tag{6.1.1}$$

$$R^2 = .69$$

$$\begin{aligned}
 \text{PM} &= 13.060 + 1.191 \text{ Z} + 16.760 \text{ D} \\
 &\quad (2.656) \quad (5.008)
 \end{aligned}
 \tag{6.1.2}$$

$$R2 = .71$$

$$\begin{aligned}
 \text{PM} &= 7.530 + .975 \text{ B} + 134.617 \text{ F} \\
 &\quad (2.584) \quad (5.718)
 \end{aligned}
 \tag{6.1.3}$$

$$R2 = .75$$

$$\begin{aligned}
 \text{PM} &= 14.55 + 1.039 \text{ Z} + 137.417 \text{ F} \\
 &\quad (2.485) \quad (5.718)
 \end{aligned}
 \tag{6.1.4}$$

$$R2 = .75$$

Prices for the fourth quarter of 1973;

$$\begin{aligned}
 \text{P} &= 25.847 + .898 \text{ B} + 16.84 \text{ D} \\
 &\quad (1.496) \quad (1.496)
 \end{aligned}
 \tag{6.1.5}$$

$$R2 = .50$$

$$\begin{aligned}
 \text{P} &= 31.85 + .997 \text{ Z} + 17.361 \text{ D} \\
 &\quad (1.513) \quad (3.558)
 \end{aligned}
 \tag{6.1.6}$$

$$\begin{aligned}
 \text{P} &= 27.17 + .922 \text{ B} + 129.668 \text{ F} \\
 &\quad (1.559) \quad (3.513)
 \end{aligned}
 \tag{6.1.7}$$

$$R2 = .52$$

$$\begin{aligned}
 \text{P} &= 33.952 + .913 \text{ Z} + 134.349 \text{ F} \\
 &\quad (1.389) \quad (3.614)
 \end{aligned}
 \tag{6.1.8}$$

$$R2 = .51$$

In equation (6.1.6) they do not report $R2$. In the above PM stands for the average monthly stock prices, P denotes the average share prices of the fourth

quarter of 1973, B is the book value and D the dividend per share. Z denotes the difference between the book value and the nominal value (price), and F gives the ratio of the dividend per share D to the nominal value.

As can be seen from the above results, by using the average prices for the fourth quarter of 1973, all the coefficients are statistically insignificant. The main shortcoming of this work is that it covers a short period.

(2) Fahmi (1982), used monthly data for the period 1978-80 and the OLS method. He has conducted some empirical tests on the stock market in Kuwait. The main purpose of his study was to test the relationship between the stock market prices (SPI) and the M2, M1, Eurodollar interest rate, and lagged stock prices [SPI(-1)]. The following is a brief summary of Fahmi's results, where we give the standard error of the coefficient in square brackets [] and the t statistic is within parenthesis (), and R2 gives the coefficient of determination:

$$\begin{aligned} \text{SPI} &= 58.607 + .10 \text{ M2} \\ & \quad \quad \quad [.012] \\ & \quad \quad \quad (8.75) \end{aligned} \tag{6.2.1}$$

$$R2 = .691$$

$$\begin{aligned} \text{SPI} &= 141.22 + .673 \text{ M1} \\ & \quad \quad \quad [.077] \\ & \quad \quad \quad (9.35) \end{aligned} \tag{6.2.2}$$

$$R2 = .719$$

$$\begin{aligned} \text{SPI} &= 173.639 + 9.425 \text{ I} \\ & \quad \quad \quad [2.07] \\ & \quad \quad \quad (4.553) \end{aligned} \tag{6.2.3}$$

$$R2 = .378$$

$$\begin{aligned} \text{SPI} = & -114.216 + .566 \text{ M1} + 3.495 \text{ I} \\ & \quad \quad \quad [.0837] \quad [1.5956] \\ & \quad \quad \quad (6.94) \quad (2.191) \end{aligned} \quad (6.2.4)$$

$$F = 48.2 \quad , \quad R2 = .745$$

$$\begin{aligned} \text{SPI} = & 31.551 + .902 \text{ SPI}(-1) \\ & \quad \quad \quad [.0418] \\ & \quad \quad \quad (21.23) \end{aligned} \quad (6.2.5)$$

$$R2 = .932$$

$$\begin{aligned} \text{SPI} = & -.573 + .084 \text{ M1} - 2.996 \text{ I} + .953 \text{ SPI}(-1) \\ & \quad \quad \quad [.0447] \quad [.7765] \quad [.0707] \\ & \quad \quad \quad (1.730) \quad (-3.857) \quad (12.956) \end{aligned} \quad (6.2.6)$$

$$DW = 1.5 \quad , \quad F = 245.2 \quad , \quad R2 = .96$$

These results show that all the estimated coefficients of equations (6.2.1), (6.2.2) and (6.2.5) are statistically significant. In equations (6.2.3) and (6.2.4), Fahmi expected a negative sign for the Eurodollar interest rate and he argued that this sign should be negative because if the Eurodollar interest rate (as a proxy of the interest rate in Europe) increased this would encourage Kuwaiti investors to transfer their money from their own stock market to Europe.

However, Fahmi obtained a very low R^2 ($=.37$) and concluded that the Eurodollar interest rate had not played a major role in the determination of stock prices in the Kuwait Stock market. Moreover, in equations (6.2.3) and (6.2.4) Fahmi's result shows an unexpected sign for the eurodollar interest rate. Possible reasons for these results can be summarised as follows:

1. In fact the effects of the Eurodollar interest rate on the Kuwait stock prices depend on the following factors:

- 1.1 The exchange rate of US\$/KD: The sign of the Eurodollar interest rate variable depends on the exchange rate. For example if the eurodollar in-

terest rate is high and the exchange rate is stable, it is expected that the local investors will shift some of their funds outside the country. But if the exchange rate does not help them, they will invest their funds locally. It is worth mentioning here that during the period of Fahmi's study the exchange rate of US\$ against KD was unstable.

1.2 Another important factor which affects the decision of the investor in regard with investing his funds locally or transfer them abroad is the differential between the local interest rate and the eurodollar interest rate. Of course if the investor gets a higher rate of interest locally he will not be inclined to transfer funds abroad. In fact the data of Fahmi's work show that the difference between the local and the Eurodollar interest rate was not high. Thus, it may be argued here that the sign obtained for the Eurodollar variable in Fahmi's results is due to the first factor.

2. It may be argued here that Fahmi's results could be improved if the lag terms were used for some variables. For example, the effects of the Eurodollar interest rate on the stock price could be stronger if the lag time was taken into account. However, Fahmi did not attempt to improve his results by using the lag time or dummy variables.

(3) Slameh (1986) tried to build a model for the Kuwaiti stock market. He tested his model over the monthly data (July 1978-Oct 1982) using the OLS method.

The following results were obtained;

$$\begin{array}{r}
 \text{SPI} = -288 \quad +1.485 \text{ EX} \quad -.264 \text{ I} \\
 \qquad \qquad \qquad (1.27) \qquad \qquad (-.14) \\
 \\
 \qquad \qquad \qquad -.157 \text{ NFA} \quad +.106 \text{ GE} \quad +.065 \text{ PS} \\
 \qquad \qquad \qquad (-5.28) \qquad \qquad (.65) \qquad \qquad (1.56) \\
 \\
 \qquad \qquad \qquad +.167 \text{ DL} \quad +.26 \text{ CI} \\
 \qquad \qquad \qquad (7.13) \qquad \qquad (.12) \\
 \\
 R^2 = .94 \quad , \quad \text{DW} = .95
 \end{array}$$

TABLE 6-1: Slameh's Model With a Lagged Dependent Variable

Dep.v	Constant	EX	I	NFA	GE	PS	DL	CI	R2	DW
SPI(t+1)	186	0.80	-0.80	-0.137	0.177	0.063	0.187	-2.81	0.94	1.04
t	0.35	0.61	-0.41	-4.01	1.07	1.52	7.08	-1.29	-	-
SPI(t+2)	-147	2.12	-1.1	-0.64	0.245	0.047	0.155	-3.31	0.93	1.12
t	-0.25	1.42	-0.48	-1.61	1.32	0.98	5.12	-1.37	-	-
SPI(t+3)	-208	2.71	-1.39	-0.004	0.347	0.01	0.134	-4.5	0.92	0.90
t	-0.33	1.67	-0.55	-0.08	1.77	0.19	4.15	-1.76	-	-

[SPI: Stock Price Index, EX: The Monthly Average Exchange Rate US\$/KD, I: Difference Between Eurodollar Market Interest Rate on Deposit and Kuwaiti Interbank Rate, NFA: Net Foreign Assets, GE: Government Expenditure on Land Acquisition, PS: Difference Between Private Sector Deposit and the Claims on Private Sector (Credit Facilities Represent Bulk of the Figure, CI: Cost of Living Index)]

Source: Slameh, op. cit., p.157.

To improve his results, Slameh tried to use a lagged dependent variable. Table 6.1 shows the same model with a lagged dependent variable.

It may be useful for the purpose of this study to assess Slameh's work. The main comments on such a piece of work can be summarised by the following;

(3-a) Regarding the basic econometrics, the researcher should reject the equations when the results show a conflict between the sign and the theory⁸³. In fact the previous results show that two of the independent variables have the unexpected sign. These variables are the private sector (PS) and the cost of living index (CI).

As mentioned earlier PS is the difference between private-sector deposits and

⁸³ Koutsoyannis A., "Theory of Econometrics", London: MacMillan Press, 1988, p.26.

the credit facilities from commercial banks to the private-sector. If PS increases this means either private deposits have increased or the credit facilities to this sector have decreased. Therefore, for both reasons the stock prices should decrease if PS increases because when PS increases this means that the investors have shifted their money from stocks to deposits. In this case the deposits can be classified as an asset substitute. Slameh's results show that this relationship is positive.

On the other hand, the cost of living index (CI) as a proxy of the inflation rate should have a positive relationship with stock prices. Slameh's results show that this relationship is negative. In fact, many economists believe that inflation is useful for stock owners, in particular Fisher (1920), Keynes(1923), Hamilton (1953) and Kessel(1956).

Fisher (1920) argued that, as prices rise, business profits will rise as well, even if the business costs rose in the same proportion. He pointed out that, "the rise of prices would be purely nominal, as it would merely keep pace with the rise in price level. The business-man would buy no more than his former smaller money profits bought before. But, as a matter of fact, the business-man's profits will rise more than this because the rate of interest he has to pay will not adjust itself immediately. Among his costs is interest, and this cost will not, at first, rise. Thus the profits will rise faster than prices"⁸⁴.

Keynes (1923) argued that inflation is advantageous to owners of common stock because it reduces the burden to corporations of servicing and repaying their debts. He stated, "when the value of money falls or prices rise, it is evident that those persons who have engaged to pay fixed sums of money yearly out of the profits of active business must benefit, since their fixed money outgoings will bear a smaller proportion than formerly to their money turnover. This benefit persists not only during the transitional period of change, but also, so far as old loans are concerned, when prices have settled down at their new and higher level"⁸⁵.

Hamilton (1953) argued that the stock owners received additional benefits from inflation because the company products in which the investor's stock is held would rise faster than wages.

⁸⁴ Fisher, "The Purchasing Power of Money", New York: MacMillan, 1920, p.59.

⁸⁵ Keynes, "A Tract on Monetary Reforms", 5th. ed., London: MacMillan Press, 1971,p.17.

Kessel (1956) argued that business firms gain through inflation for the following reasons:

1. The hypothesis that debtors gain by inflation, the business firms – most of whom are debtors – will gain from inflation. He pointed out that this has become the standard text book argument; debtors gain and creditors lose during inflation⁸⁶.
2. The assumption that inflation causes wages to lag behind prices⁸⁷.
3. The hypothesis that stock owners gain because companies carry inventories and can be sold at high prices.

Lorie and Hamilton (1973) argued that the hypothesis that owners of common stock benefit during inflation would be true if business firms were debtors and if the interest rates which they paid failed to reflect future changes in the price level. They pointed out that it is a mistake to believe that business firms are debtors only, because as Kessel and Alchian (1960) pointed out, it is important to look at both sides of their balance sheets in order to decide whether firms are debtors or creditors. It is clear now that if the price level increases in any economy, stock as an asset should also increase. Therefore the sign of this variable should be positive.

(3-b) The statistical results of Slameh's work were very weak. As can be seen from them the coefficient for all variables, except for two of them, were insignificant. The D.W. was .95 due to the autocorrelation . In fact he tried to improve his model by using the lagged dependent variable and his results show that domestic liquidity was the only independent variable showing a significant effect.

However, it can be argued that his results could have been improved if he had used variables such as the dummy variables for the period of the Al-Manakh market which contained bulk purchases of shares that caused high inflation in the price index.

(4) Behbehani (1987) conducted some empirical studies investigating the feasibility of forecasting stock prices of the banking sector. He used the OLS method and his

⁸⁶ Kessel, "Inflation-caused wealth redistribution: a test of a hypothesis", *American Economic Review*, Vol.46, March-May 1956. p.128.

⁸⁷ *ibid.*, p.128.

period covered the quarterly data of June 1982-March 1987. Behbehani's results can be summarised as follows;

$$\begin{aligned}
 \text{SPKI} &= -159.9161 + .0212 \text{ GOLDP}(-1) + .0373 \text{ PS}(-1) \\
 &\quad (2.49) \qquad\qquad\qquad (3.21) \\
 &+ .3759 \text{ US}(-1) + .129 \text{ USINDX}(-1) - .0007 \text{ JPINDEX}(-1) \\
 &\quad (3.93) \qquad\qquad\qquad (4.14) \qquad\qquad\qquad (-3.08) \\
 &+ 1.926 \text{ IUSIM}(-1) + .8153 \text{ SPKI}(-1) \\
 &\quad (3.52) \qquad\qquad\qquad (6.75)
 \end{aligned}$$

$$\text{DW} = 2.8 \quad , \quad R^2 = 0.98,$$

where SPKI is the average close price of the banking sector, GOLDP stands for the gold price in London, PS gives the exchange rate of Pound/KD, US is the exchange rate of US\$/KD, USINDX stands for standard and poors index, JPINDEX is the Tokyo Dow Jones, IUSIM gives the monthly local interest rate on the US\$, and finally the factor (-1) stands for the lag period for one term.

Behbehani's model shows that the signs of some variables were against the theory. For example the relationship between stock prices, gold prices (GOLDP -1), USA share prices (USINDX (-1)), and the local interest rate of the US\$ (IUSIM (-1)) should be negative because these variables can be classified as asset substitutes. Behbehani argued that the relationship between these variables should be positive. In other words if the prices of these variables rose, the Kuwaiti investors would return their money to Kuwait, mainly to the Kuwait stock market because investors are always afraid of high rises in the prices of those variables. He spoke mainly about three variables for which he had a positive sign, that is gold prices, local interest rate on the US\$, and the Standard and Poors index. But at the same time he had a negative sign for the Tokyo Dow Jones Index and he agreed that this sign was right. The main problem of Behbehani's work is that the sign of some variables is against the economic theory.

(5) Hijazi (1988) introduced an empirical study to test the relationship between the stock prices and some micro economic variables such as the book value, dividend per share, and earnings per share. This work was related to the classical assumption of some economists about the stock valuation which stresses that there is some “true value” for the stock in which the current price of stock should reflect the present and future dividend of earnings. His work was very close to Khouja’s and Said’s. The main difference between Hijazi and Khouja and Said’s works is that Hijazi’s study covered a longer period. Hence, Hijazi’s study can be described as the most comprehensive work that has been done in this field in Kuwait up to date. Hijazi applied the following model;

$$AVSP = f(AVDPS, AVEPS)$$

$$AVSP = f(AVDPS, AVBV)$$

where AVSP stands for the average share price for the period, AVDPS gives the average dividend per share, AVEPS denotes average earnings per share and AVBV is the average book value per share.

This study covered the period 1978-1984. He used cross-section data which included the prices, dividend per share, earning per share, and average book value per share for 33 listed companies. The model is estimated by OLS and the results were as follows;

Period I: 1978-82;

$$AVSP = 2.917 + 6.313 AVEPS + 8.489 AVDPS$$

$$(3.19) \quad (2.67) \quad (2.41)$$

(6.5.1)

$$R^2 = .41, \quad SEE = 2.602$$

The equation shows that the estimated coefficients are statistically significant with the proper expected sign. R2 is quite low because cross-sectional data has been used. In fact R2 values typically tend to be low because of both the great variation that is possible across individual companies and the lack of a common underlying trend. The result from equation (6.5.1) is that a one KD change in

the AVDPS leads to an increase in AVSP of 8.489 KD, everything else being held constant and a one KD change in AVEPS will increase the AVSP by 6.313 KD under the same conditions.

$$\begin{aligned} \text{AVSP} &= -.492 + 9.523 \text{ AVDPS} + 2.667 \text{ AVBV} \\ &\quad (-.49) \quad (3.7) \quad (5.91) \end{aligned} \tag{6.5.2}$$

$$R^2 = .66, \quad \text{SEE} = 1.968$$

In the previous model, Hijazi substituted the Average Book Value per share (AVBV) in place of AVEPS. The result indicates that the coefficients are statistically significant and all the signs are correct.

Period II: 1983-84;

By estimating the same models for the period 1983-84, Hijazi obtained the following results:

$$\begin{aligned} \text{AVSP} &= 3.628 - 7.211 \text{ AVEPS} + 77.67 \text{ AVDPS} \\ R^2 &= .44, \quad \text{SEE} = 3.793 \end{aligned} \tag{6.5.3}$$

All the individual coefficients are statistically significant. AVDPS in this equation has the proper sign, while AVEPS has the wrong one. Hijazi argued that this result may be explained by the fact that during this period investors lost their confidence in the companies earnings because they realized that most of the profits reported were fictitious and just an accounting figure resulting from interest on the post-dated cheques which is neither a true nor achievable profit. In fact during this period the assets of many companies consisted of inflated shares and real estate which need provisions to adjust them to reflect the actual situation. It is worth mentioning here that during this period many companies reported operating losses. Compared to Khouja and Said's results, Hijazi did not obtain the expected sign for AVEPS.

For this period Hijazi substituted AVBV for AVEPS and obtained the following

results:

$$\begin{aligned}
 \text{AVPS} &= 4.214 + 37.018 \text{ AVEPS} + .563 \text{ AVBV} \\
 &\quad (2.63) \quad (2.11) \quad (.96) \\
 R^2 &= .31, \quad \text{SEE} = 4.211
 \end{aligned}
 \tag{6.5.4}$$

The equation shows that the coefficient of book value (AVBV) was insignificant in the sense that its t-statistic was very low. In fact this result was due to the distortions of the stock market collapse during this period.

Period III: 1978-84;

Finally Hijazi estimated the regression coefficient for the same model over the whole period 1978-84. He obtained the following results:

$$\begin{aligned}
 \text{AVSP} &= 2.108 + 4.114 \text{ AVEPS} + 42.934 \text{ AVDPS} \\
 &\quad (3.32) \quad (1.47) \quad (3.68) \\
 R^2 &= .523, \quad \text{SEE} = 2.587
 \end{aligned}
 \tag{6.5.5}$$

The coefficient of AVEPS is insignificant with the t-statistic less than 2. It indicates that the Kuwait investors were just interested in the dividends per share (AVDPS) which is statistically significant. This could be explained by the fact that the Kuwait investors are familiar with the dividends which they usually receive. Another important factor which affected the AVEPS coefficient results was the Al-Manakh crisis.

Hijazi substituted AVBV in place of AVEPS in the earlier equation and obtained the following results:

$$\begin{aligned}
 \text{AVSP} &= 1.006 + 37.656 \text{ AVDPS} + 1.27 \text{ AVBV} \\
 &\quad (.85) \quad (3.04) \quad (1.87) \\
 R^2 &= .54, \quad \text{SEE} = 2.53
 \end{aligned}
 \tag{6.5.6}$$

The coefficients of equation (6.5.6) are statistically significant with the correct expected signs.

From the earlier review of Hijazi's work it may be useful to summarise the main findings of his work in the following:

1. Dividends (AVDPS) were statistically significant over all periods. This led to the conclusion that the Kuwait investors were usually concerned with the company's dividends which represents a factor in determining the company's share value. Hijazi argued that the Kuwait investors get information about companies dividends from one another without any analysis or investigation. Hence, companies usually maintain high dividends to ensure higher share prices in the market. These results supported the finding of Khouja and Said. The underlying assumption was that the Kuwait Stock Market responds to the same financial factors as other stock markets in the world.
2. Earning per share (AVEPS) was insignificant for the period 1982-84. But for the period 1978-82 the coefficient of this variable was statistically significant and the sign was as expected. However, for the period 1983-84 AVEPS had the wrong sign as a result of the Al-Manakh crisis.
3. The most important factor in such work is the reliable estimates of the coefficient of the independent variables in explaining stock market prices. The results of this study support the previous study made by Khouja and Said. Therefore, since Hijazi's work has been done recently, we will concentrate on the relationship between macro-economic variables and stock market prices.

Section II

6.2 EMPIRICAL ANALYSIS:

In this part of the chapter some hypotheses are examined and the objective of this work is to answer the following questions:

1. What is the relationship between economic activity and the general level of share prices? This question comprises the following sub-questions:
 - 1.a What kind of relationship exists between macro-economic factors and the level of stock market prices?

- 1.b What is the most important macro-economic factor affecting the price level in the Kuwait stock market?
2. How are stock prices determined ?
3. Is it possible to forecast stock prices in Kuwait ?

Tentative conclusions are as follows;

1. There is a statistical relationship between the macro-economic factors and the price level.
2. The Random Walk model is the most suitable form for forecasting the Kuwaiti stock prices.

To examine the above hypotheses the following work has been done:

6.2.1 The Data:

The data employed were collected from a number of sources: the Central Bank of Kuwait (CBK), the Stock Exchange, and the IMF. The data for the first thirteen equations are quarterly and for the other equations monthly, covering the period 1979-88. However, it is well known in the field of econometrics in developing countries that the researcher might focus on some data problems. For example, there might be a shortage of data or the data might not be accurate. As far as this study is concerned the quarterly data for the Non-Oil GDP in Kuwait were not available, and the data published by the CBK differ from issue to issue.

6.2.2 The Variables:

6.2.2.1 Dependent Variable: The Stock Market Index(SPI);

In 1976 the Ministry of Commerce and Industry (MCI) calculated a price index for share prices which was adopted by the Central Bank of Kuwait (CBK) until 1984. This price index was calculated by a geometric mean of share prices as shown by the following methods ;

- a. The share price index for each company is calculated by the following formula

$$SPI_K = \frac{CP_t}{bp} \cdot 100,$$

where SPI_K is the price index for the company K, CP_t gives the closing price for the day (t), and bp stands for the closing price on the base day (1st January 1976).

- b. The general price index for the stock market is calculated as the following formula;

$$SPI = \frac{\sqrt[n]{CP_1 \cdot CP_2 \dots CP_n}}{\sqrt[n]{bp_1 \cdot bp_2 \dots bp_n}} \cdot 100$$

However, if new capital (bonus shares) or company dividends are issued by companies, the base price will change according to the following formula:

$$\text{Adjustment of Base Price} = \frac{\text{Base Price}}{1 + \text{Dividend per Share}}$$

For example if the base price is 3 KD and the company dividend is 20 per cent as a bonus share, the adjustment base price will be;

$$\begin{aligned} \text{Adjustment Base Price} &= \frac{3}{1 + 0.2} \\ &= 2.5KD \end{aligned}$$

In 1986 the Economic Research Department in the Central Bank of Kuwait attempted to develop a share price index. In fact the basis which has been used to develop this index is the same as that of the MCI index and was calculated with the same formula as the above. The difference between those two indices is the base year. The MCI index base was January 1976=100 and for the CBK index 1979=100. It is worth mentioning here that the CBK index is an unpublished index and is used for the purpose of CBK staff work.

6.2.2.2 Independent Variables:

(A) Money (M1);

As published in the CBK quarterly bulletin, the definition of M1 is money supply in its narrow definition. M1 contains currency in circulation with the public plus sight deposits (private demand deposits in KD). The relationship between this variable and the dependent variable is expected to be positive. As mentioned in Chapter V, the theoretical basis of this relationship is related to the quantity theory, with respect to the demand for currency, that is currency is held for transaction purposes only. In fact, under the influence of Keynes' General Theory and after the Second World War a more profound analysis of the transmission mechanisms between money and the transactions volume or national income and prices was developed. Some economists argued, that an increase in money leads not only to a rise in the demand for goods, but also to a rise in the demand for financial assets⁸⁸. Therefore, an increase in M1 is expected to increase demand for stock which, in turn, leads to an increase in stock prices.

As discussed earlier in this study, all investors use cheques to pay for their transactions in the stock market. Of course when this variable increases share prices will increase also. Therefore the expected sign of this variable will be positive.

(B) Quasi-money (QM):

Quasi money (QM) in Kuwait comprises saving deposits, time deposits, and certificate of deposits (CD's), and the private sector maintains these components in KD or foreign currencies with local commercial banks. The expected sign of this variable is negative because when it decreases this means that the investors have to shift their money from the QM to the sight deposits in order to settle their trading in the stock market. This means, therefore, that the investor expects more yield from the stock market than from the deposits with commercial banks. In fact the components of the QM can be classified as substitute assets for the stocks.

⁸⁸ Friedman (1961) and Sprinkel (1964).

(C) Sight Deposit (Sight):

Sight deposit is the current account or the cheque account. This variable is included because it is expected that there is a positive relationship between sight deposits and stock market activity. Most of the transactions in the stock market are paid for by cheques. As banks in Kuwait do not pay interest on current accounts, people prefer to keep money in this type of account mainly to pay for their transactions.

(D) Exchange Rate (\$/KD):

This is the quarterly average exchange rate of US\$ against KD. Like any other investor, the Kuwaiti investor is expected to have a portfolio containing foreign currency, stocks, real estate, money, etc. If the US\$ value against the Kuwait Dinar decreases, the investor will shift his money from the US\$ to the KD. If the investor expects that he will earn more money from the Kuwait Stock Market, he will shift his money there. Accordingly the expected sign for this variable is negative.

(E) Oil Revenue (OIL):

As mentioned in Chapter II the Kuwaiti economy has only one main source of revenue represented in oil. Therefore, one would expect that the more revenue the country has the more activity there would be in the market. Lag terms are believed to exist in this case because the oil revenues will be channelled into the local economy after a period of time. The expected sign of this variable is positive.

(F) Land Purchase (LP):

Since the 1960's the Kuwaiti government has started to purchase land and houses from individuals. It believes that the purpose of this policy is to distribute the oil revenue among Kuwaiti citizens; moreover, the government buys land and houses at prices inflated above the market price. Because people receive a large amount of money from the government, they can invest it in the stock market; hence the expected sign of this variable is positive. In other words the more government expenditure there is on land purchase the more activity is expected in the stock market.

(G) Gold Prices (GOLD):

The data has been collected from the IMF. It is expected that investors will invest their money in gold which can be described as another substitute investment tool for stocks. Therefore the expected sign for this variable will be negative.

(H) OIL GDP (OILGDP):

One of the most important macro-economic factors is the OIL GDP .As mentioned in Chapter II, the oil sector plays a huge role in the Kuwaiti national income. The theoretical background of the relationship between the GDP and the stock market has been discussed in Chapter V. In fact, increasing the oil GDP means that the country earns more money, and this will lead to improving the citizens' standard of living either directly or indirectly. Therefore, the expected sign for this variable will be positive.

(I)Government Expenditure on Land and Projects (DLP):

This variable contains two factors, government expenditure on land and on development projects. By increasing government expenditure on these sectors, the economy will have more liquidity, hence part of this money must be invested in the stock market, or it will lead to inflationary pressures. The expected sign, therefore, is positive.

(J)Dummy Variables (D1 and D2):

D1 is a dummy variable for the stock market during the time when the government purchased shares and when the Iraq-Iran war stopped, and equal to 1 in 2Q80-2Q82 and 1Q87-3Q87, and 0 otherwise.

D2 is a dummy variable for the market boom and is 1 in 3Q79 -1Q81 and 0 otherwise.

6.3 METHODOLOGY:

Most researchers nowadays use regression analysis. In fact regression is a useful and powerful tool that can be used to examine the relationship between a dependent variable and an independent one. Multiple regression is used in this

research in order to depict the relationship between the dependent variable (SPI) and the independent variables (macro-economic variables). Koutsoyannis pointed out that in any econometric research we may distinguish four stages: the first stage is the specification of the model with which one will attempt to measure the phenomenon being analysed. The second stage is known as the stage of the maintained hypothesis, that is after the formulation of the model one should obtain estimates of its parameters. The third stage occurs after the model has been estimated when one should proceed with the evaluation of the estimates, that is to decide on the basis of certain criteria whether the estimates are satisfactory and reliable. This final stage of any econometric research is concerned with the evaluation of the forecasting viability of the model⁸⁹.

6.4 HYPOTHESES:

The null hypothesis to be tested is:

$$H_o : b_1 = b_2 = \dots b_K = 0$$

against the alternative hypothesis;

$$H_I : \text{not all } b_i\text{'s} = 0.$$

If the result shows that $H_o : \dots b_K = 0$, it means that the independent variables do not qualify to affect the dependent variable or, in other words, there is no linear relationship between the dependent and independent variables. Therefore another independent variable should be chosen. On the other hand, if the result shows that;

$$H_I : \text{not all } b_i\text{'s} = 0,$$

the null hypothesis will be rejected and the relationship between the dependent and independent variables will be accepted.

The following regression equations have been applied by using the Ordinary Least-Square method (OLS). In the equations R^2 stands for the coefficient of determination, MR denotes the multiple R and DW is the Durbin-Watson test.

⁸⁹ Koutsoyannis A., op. cit., p.12.

6.5 THE EQUATIONS:

It may be useful for the purpose of this study to select the main variables that are believed to have influenced the stock price index (SPI). In fact many examinations of all the independent variables were made, and the main results follow.

In the following equation the relationship between SPI and LP, SIGHT, SPI(-1), and D1 are examined. The objective is to investigate the relationship between stock prices and a selection of some macroeconomic variables. The first selected variable is land purchase (LP). Because people receive a large amount of money from the government through the land purchase policy, a part of this money is channeled into the stock market. Therefore, the expected sign of this variable is positive.

The second variable selected is sight deposit or demand deposit (SIGHT). As mentioned earlier, money in Kuwait is defined as consisting of currency in circulation and sight deposits. As sight deposits represent a high percentage in M1, and traders in the stock market always use sight deposits to pay for their transactions, the expected relationship between this variable and stock prices is active and positive. In fact, as was discussed earlier in Chapter V, many economists believed that money supply does affect the stock prices. Hence the expected sign of this variable is positive.

The third variable studied is the lag stock price index [SPI(-1)]. Earlier works on the Kuwait Stock Market have confirmed that speculation plays a major role there. This speculation results in a rise in the price of most of the stock during certain periods without any scientific justification for the increase in price. However, the investors in Kuwait are always watching the stock price movements, in order to take their decisions.

As mentioned in Chapter V, the stock market prices can be described in terms of the 'Random Walk Model'. The model stresses that in any future period the price will equal the current price plus some randomly chosen number. In regard to this theoretical background the expected relationship between SPI and its lagged value will be strong and positive. Finally D1 is a dummy variable as discussed

and

$$b_i = \frac{\partial Y}{\partial X}$$

Y = the dependent variable

X = the independent variable

\bar{X}, \bar{Y} = value of the mean of the variables.

By using the above formula the following results show the elasticity of each of the above stated variables:

$$E(LP) = 0.26$$

$$E(SIGHT) = 0.005$$

$$E(SPI(-1)) = 0.79.$$

The results indicate that a 1 per cent increase in land purchase will lead to 0.26 per cent increase in the SPI. In fact the result confirms the earlier expectations which stressed that the government expenditure on land acquisition (land purchase) has a good affect on the stock prices. As discussed earlier in this study that the land purchases have increased the wealth of some Kuwaiti citizens, hence, this led to an increase in the demand for stocks which, in turn, led to an increase in stock prices. Similarly a 1 per cent increase in sight deposits leads to a 0.005 per cent increase in SPI. Also a 1 per cent rise in lagged stock prices leads to a 0.79 percent increase in SPI.

In the following model the SIGHT variable has been substituted by M1. As mentioned earliar M1 in Kuwait includes currency in circulation and sight deposits. M1 is the money supply in its narrow definition. An increase in M1 is expected to result in an increase in stock prices.

$$SPI = a + b_1M1 + b_2LP + b_3SPI(-1) + b_4D1 \quad (2)$$

The following results are obtained;

$$\begin{array}{rcc} \text{SPI} = & -11.0209 & +.0231 \text{ M1} & +.1171 \text{ LP} \\ & & [.0095] & [.0364] \\ & & (2.439) & (3.214) \end{array}$$

$$\begin{array}{rcc} +.8251 \text{ SPI}(-1) & +9.3739 \text{ D1} \\ [.0503] & [3.8459] \\ (16.416) & (2.437) \end{array}$$

$$R^2 = .954 \quad , \quad MR = .977 \quad , \quad DW = 1.935$$

The results of this equation are similar to the results of equation (1). The coefficient is statistically significant. The DW indicates no autocorrelation. The signs of the coefficients of all explanatory variables are as expected.

If the elasticity of M1 is calculated with respect to the formula stated earlier, it will be found that $E(M1) = .002$. This indicates that if M1 increases by 1 per cent this leads to an increase in SPI of .002 per cent. Comparing this result with the results obtained in equation (1), the impact of SIGHT on the stock prices is stronger than that of M1. This is mainly due to the fact that the transactions in the stock market are paid for by cheques.

In the following model QM has been substituted for LP. QM consists of saving deposits, time deposits, deposits in foreign currencies and CD's. All of these items can be classified as substitutes and hence the expected sign of this variable is negative.

$$\text{SPI} = a + b_1 \text{SIGHT} - b_2 \text{QM} + b_3 \text{SPI}(-1) + b_4 \text{D1} \quad (3)$$

We found,

$$\begin{array}{rcl}
 \text{SPI} & = & 28.3034 \quad +.0482 \text{ SIGHT} \quad -.009 \text{ QM} \\
 & & \quad \quad \quad [.0138] \quad \quad \quad [.0029] \\
 & & \quad \quad \quad (3.496) \quad \quad \quad (-3.143) \\
 \\
 & & +.7135 \text{ SPI}(-1) \quad +8.1351 \text{ D1} \\
 & & \quad \quad \quad [.0704] \quad \quad \quad [3.8004] \\
 & & \quad \quad \quad (10.132) \quad \quad \quad (2.141)
 \end{array}$$

$$R^2 = .9471 \quad , \quad MR = .9732 \quad , \quad DW = 1.873$$

The signs and the coefficient are as expected. Also, the coefficients are statistically significant. DW indicates no autocorrelation.

The results show that QM elasticity is $E(\text{QM}) = -.00035$. This indicates a 1 per cent increase in QM leads to a decrease in SPI by .00035 per cent only.

The following model examines the relationship between SPI and LP, SIGHT, \$/KD and SPI(-1). The \$/KD is a very important macroeconomic variable in Kuwait because most of the country's national income is determined by the value of the US \$. The expected sign of the variable is negative. An increase in the US\$ against the KD will lead the Kuwaiti investors to transfer some money from their portfolio funds to the US. hence, the stock market prices will decrease.

$$\text{SPI} = a + b_1 \text{LP} + b_2 \text{SIGHT} - b_3 \text{\$/KD} + b_4 \text{SPI}(-1) \quad (4)$$

We found the following results :

$$\begin{array}{rcl}
 \text{SPI} & = & 99.036 \quad +.129 \text{ LP} \quad +.0361 \text{ SIGHT} \\
 & & \quad \quad \quad [.0325] \quad \quad \quad [.0114] \\
 & & \quad \quad \quad (3.967) \quad \quad \quad (3.178) \\
 \\
 & & -.3675 \text{\$/KD} \quad +.79 \text{ SPI}(-1) \\
 & & \quad \quad \quad [.1644] \quad \quad \quad [.0535] \\
 & & \quad \quad \quad (-2.235) \quad \quad \quad (14.85)
 \end{array}$$

$$R^2 = .9561 \quad , \quad MR = .9779 \quad , \quad DW = 2.269$$

The results of this equation are quite good. The coefficients are statistically significant. The signs are as expected. The DW indicates no autocorrelation. The elasticity of \$/KD is $E(\$/KD) = -.157$. This indicates that if the US \$ value against the KD increase by 1 per cent the SPI will decrease by .157 per cent. The dollar exchange rate against the Kuwaiti dinar is very important to the country's economic policy because the gross domestic product is effected by it. The sign of the coefficient of \$/KD is negative because it was expected that the investor would keep his money in Kuwait while the US \$ value against KD was decreasing. Therefore he would invest his money locally (in the stock market).

In the following equations LP has been substituted by QM. This has been done to examine the relationship between SPI with four variables. Two of them have negative expected signs and for the other two a positive sign is expected. The model takes the following form:

$$SPI = a - b_1QM + b_2SPI(-1) + b_3SIGHT - b_4\$/KD \quad (5)$$

And the following results were found:

$$\begin{array}{rcl}
 SPI & = & 125.9924 \quad -.0081 \text{ QM} \quad +.7006 \text{ SPI}(-1) \\
 & & \quad \quad \quad [.0037] \quad \quad \quad [.0744] \\
 & & \quad \quad \quad (-2.203) \quad \quad \quad (9.419) \\
 & & +.057 \text{ SIGHT} \quad -.3579 \text{ \$/KD} \\
 & & \quad \quad \quad [.0137] \quad \quad \quad [.2034] \\
 & & \quad \quad \quad (4.175) \quad \quad \quad (-1.76)
 \end{array}$$

$$MR = .9723 \quad , \quad R^2 = .945 \quad , \quad DW = 1.87$$

The result of this equation shows that the coefficient of all variables are statistically significant and the signs are as expected. However the exercise was repeated with the same equation by using 2 lag periods for the \$/KD and the results im-

proved as follows;

$$\begin{array}{rcl}
 \text{SPI} & = & 146.7295 \quad -.0079 \text{ QM} \quad +.0571 \text{ SIGHT} \\
 & & \quad \quad \quad [.0035] \quad \quad \quad [.0133] \\
 & & \quad \quad \quad (-2.291) \quad \quad \quad (4.298) \\
 \\
 & & - .4283 \text{ \$/KD} \quad +.6891 \text{ SPI}(-1) \\
 & & \quad \quad \quad [.1906] \quad \quad \quad [.0714] \\
 & & \quad \quad \quad (-2.247) \quad \quad \quad (9.647)
 \end{array} \tag{6}$$

$$\text{MR} = .9789 \quad , \quad \text{R}^2 = .9482 \quad , \quad \text{DW} = 1.9254$$

The coefficient of the \$/KD improved statistically and became more than 2. Also, the coefficients of all explanatory variables are significant. The DW indicates no autocorrelation and the sign of all variables is as expected. The results indicate that the exchange rate of \$/KD is an important variable influencing stock market prices (SPI). The negative relationship between the \$/KD and SPI was expected, because while the US \$ value against KD was decreased the investors will keep their money locally. Behbehani (1988) argued that the relationship between the \$/KD and the SPI should be positive and his results showed that sign⁹⁰. In fact these results showed the opposite of Behbehani's sign. However the large positive coefficient of SPI(-1) and sight deposits reflect the influence of both of these explanatory variables on the share price level in the stock market.

The objective of the following model is to investigate the relationship between stock prices and QM, SIGHT, SPI(-1), GOLD(-2) and OIL(-2). Two important variables have been added here to the independent variables. These are the two quarter lagged oil revenues and two quarter lagged gold prices. Oil is a very important factor because it finances more than 85 per cent of the government budget. The more the revenue from oil the more money will be injected into the local economy. Hence part of the money must be invested in the stock market. Therefore the expected sign of this variable is positive.

⁹⁰ Behbehani, 'The feasibility of forecasting stock prices of the banking sectors', Unpublished Staff Paper, CBK, 1987, p.5

Gold as a substitute investment tool for stocks should have a negative sign. To examine this relationship the following has been applied:

$$SPI = a - b_1QM + b_2SIGHT + b_3SPI(-1) - b_4GOLD(-2) + b_5OIL(-2). \quad (7)$$

The following results were obtained;

$$\begin{array}{rcc} SPI = 39.9279 & -0.0152 QM & +0.0495 SIGHT \\ & [.0050] & [.0143] \\ & (-3.023) & (3.453) \\ \\ +.68 SPI(-1) & +.0578 GOLD(-2) & -.0137 OIL(-2) \\ [.0703] & [.0211] & [.0101] \\ (9.691) & (2.738) & (-1.354) \end{array}$$

$$MR = .9756 \quad , \quad R2 = .9518 \quad , \quad DW = 2.1383$$

The above equation has two problems; the sign of the oil revenues is negative where it should be positive and the coefficient statistics of this variable are insignificant. Also the sign for GOLD is unexpected. However the other variables are significant and the DW indicates no autocorrelation. The coefficient of the last variable is insignificant statistically. This can be explained by the fact that the oil revenue of Kuwait is not transferred to the local economy after two quarters. In the equation (8) below, the coefficient of the lag oil revenue OILR(-1) is statistically significant and this result may be due to the fact that the oil revenue has an influence on the local economy and then indirectly on the stock market after one quarter. In equation (8) GOLD has been replaced by the government expenditure on land and projects (DLP). The lagged DLP is used because the expenditure on these sectors affect the economy after three months or more.

$$SPI = a + b_1SIGHT + b_2OILR(-1) + b_3DLP(-1) + b_4SPI(-1). \quad (8)$$

The following results have been found;

$$\begin{array}{rcc}
 \text{SPI} = -18.1888 & +.0524 \text{ SIGHT} & +.0166 \text{ OILR}(-1) \\
 & [.0157] & [.0064] \\
 & (3.344) & (2.609) \\
 \\
 .0417 \text{ DLP}(-1) & +.7064 \text{ SPI}(-1) & \\
 [.0244] & [.0772] & \\
 (1.708) & (9.148) &
 \end{array}$$

$$R2 = .932 \quad , \quad MR = .9654 \quad , \quad DW = 1.514$$

All of the individual coefficients (except DLP) are statistically significant in the sense that they have t-statistics of more than 2, DW indicating no autocorrelation.

The model shows that the impact of the oil revenues on the stock prices is stronger in terms of one quarter than in terms of two quarters. The elasticity of OILR(-1) is .0027. It suggests that a 1 per cent increase in oil revenue produces a .0027 per cent rise in the stock price index in one quarter.

In the following model the relationship between SPI and QM, OILGDP, GOLD, SIGHT and D2 have been examined. The interrelationship between the dependent variable and the independent variable can be stated in mathematical form as follows:

$$\text{SPI} = a - b_1\text{QM} + b_2\text{OILGDP} - b_3\text{GOLD} + b_4\text{SIGHT} + b_5\text{D2}. \quad (9)$$

The following was found :

$$\begin{array}{rcc}
 \text{SPI} = 12.9908 & -.0206 \text{ QM} & +.541 \text{ OILGDP} \\
 & [.0074] & [.0190] \\
 & (-2.79) & (2.85) \\
 \\
 +.087 \text{ GOLD} & +.1547 \text{ SIGHT} & -40.2712 \text{ D2} \\
 [.416] & [.0176] & [16.355] \\
 (2.083) & (8.689) & (-2.462)
 \end{array}$$

$$R2 = .8472 \quad , \quad MR = .9205 \quad , \quad DW = 1.349$$

The results of equation (9) show that all the variables (except GOLD) were statistically significant. Apart from GOLD, which has the unexpected sign, all of the independent variables have the proper sign. In fact the problem of this equation is the sign of gold prices which we think should be negative because gold can be described as another substitute investment tool for stocks. In fact this sign may be due to the distortions of the stock market boom during 1979-82. The result implies that the investors in Kuwait were usually concerned with other substitutes, for example US \$. The DW indicates no autocorrelation.

6.5.1 Money and Share Prices:

As mentioned in Chapter V, there are two theories explaining the relationship between changes in the money supply and share prices. The first theory is called the quantity theory of money. This theory argues that the changes in the money supply precede changes in stock prices. According to this theory if the money supply increases this will lead to an increase in the demand for financial assets, because investors will try to keep their money in other assets and shares will be one of those assets. Regarding the basic economic theory which said that the prices of any commodity will increase if the demand increases, the same will happen if the demand for shares increases. The second theory is the efficient market theory⁹¹. This theory postulates that if the stock market was efficient then the actual prices of shares reflect the information. "In this case the money supply should reflect instantaneously the changes in share prices"⁹².

It is useful for the purpose of this study to examine the relationship between stock prices (SPI) and the money supply in both definitions and components in Kuwait. The relationship between the changes in stock prices (SPI) and changes in the money supply has been tested. The objective of this analysis is to investigate the impact of monetary policy on stock prices. First differences in these variables are used rather than level values to remove any time trend effects which may exist for all variables. The simple regression model tested by the OLS method is shown the following form:

$$\Delta \text{SPI} = a + b\Delta \text{M1} \quad (10)$$

⁹¹ Saunder and Woodward, 'Money supply and share prices: the evidence for the UK in the post-ccc period', *The Investment Analyst Journal*, No. 45, September 1976.

⁹² *Ibid.*, p.24

$$\Delta\text{SPI} = a + b\Delta\text{QM} \quad (11)$$

$$\Delta\text{SPI} = a + b\Delta\text{M2} \quad (12)$$

And then the multiple regression model was tested to examine the components of the M2 as follows :

$$\Delta\text{SPI} = a + b_1\Delta\text{QM} + b_2\Delta\text{M1} \quad (13)$$

The following results were found;

$$\begin{aligned} \Delta\text{SPI} &= -.8936 + .0656\Delta\text{M1} \\ &\quad \quad \quad [.0156] \\ &\quad \quad \quad (4.206) \end{aligned} \quad (10)$$

$$R^2 = .5687$$

The result shows that the coefficient is statistically significant with the expected sign. The simple regression of SPI on ΔM1 explains 56 per cent of the total variation in SPI, while 44 per cent remains unexplained. It indicates that a 1 per cent change in the M1 changes the SPI by 0.0656 per cent.

$$\begin{aligned} \Delta\text{SPI} &= -.1263 - .0078\Delta\text{QM} \\ &\quad \quad \quad [.0197] \\ &\quad \quad \quad (-.192) \end{aligned} \quad (11)$$

$$R^2 = -.031$$

The results of this model show that the coefficients are statistically insignificant. R^2 is very low.

$$\begin{aligned} \Delta\text{SPI} &= -4.1928 + .0476\Delta\text{M2} \\ &\quad \quad \quad [.0146] \\ &\quad \quad \quad (3.254) \end{aligned} \quad (12)$$

$$R^2 = .47$$

The results of the above model show that the coefficients are statistically significant with the proper sign. Comparing these results with that of model number (10), the effects of M1 on the stock prices appears stronger than that of M2. This result was expected because M2 comprises M1 and QM. QM represents more than 70 per cent of M2. Since QM has negative effects on SPI, therefore the expected relationship between M2 and SPI should be weaker than that between M1 and SPI.

However, a problem always arises when the relationship between money and stock prices is examined. This problem can be illustrated by the following question: which definition of money should be used? It may be suggested here that the researcher should examine all the definitions of money. Also it may be useful to break down the components of money (all definitions) and examine their effects on the stock market prices.

In the following model the relationship between the changes in both components and M2 with SPI are examined. The results show that the coefficient of QM is insignificant and has the wrong sign. Also R2 is very low. The impact of M1 in this model on stock prices is the same as in model (10).

$$\begin{array}{rcc} \text{SPI} = & -2.403 & .0718 \Delta\text{M1} & +.0203 \Delta\text{QM} \\ & & [.0164] & [.0171] \\ & & (4.387) & (1.188) \end{array} \quad (13)$$

$$R^2 = .3490 \quad , \quad MR = .590 \quad , \quad DW = 1.74$$

In fact when these results were compared with Fahmi's it was found that in using the aggregate numbers of the explanatory variables, as Fahmi did, better results were achieved. Equations (10) and (12) above are similar to Fahmi's and his results show that the explanatory power, R², is higher.

6.5.2 The Forecasting Model:

As mentioned earlier in Chapter V of this study the random walk hypothesis is the simplest economic model of stock market price behaviour. Also, some economists believe that the future price can be predicted by using the previous

price time series. Fama (1965) argued that “the future path of the price levels of a security is no more predictable than the path of a series of cumulated random numbers”⁹³. The most natural form of the random walk model is:

$$[\text{price at time } t]P_t = [\text{price at time } t - 1]P_{t-1} + [\text{residual at time } t]E_t$$

where the residual series has zero mean and is uncorrelated with all previous terms in the residual series. However to predict P_t using previous values of the series, then all possible functions $f(P_{t-1}, P_{t-2}, \dots)$ should be tried⁹⁴.

Granger and Morgenstern (1970) argued that a problem arises when the random walk model is applied. The problem is whether to use the raw price data or some transformed version. They stressed that “it has become common practice to use the logarithm of prices, when long series are considered, to compensate for the fact that such series will frequently contain trends both in means and variances”⁹⁵.

By using the logarithmic transformation the random walk model can be written as:

$$\log P_t = \log P_{t-1} - n_t,$$

where both residual series have zero mean and are uncorrelated with earlier values. In fact both models are approximately the same, because in practice usually the percentage change in price, E_t/P_{t-1} is small.

However the most important outcome of the random walk model is that the best predictor of tomorrow’s price is today’s price. It is worth mentioning here that the random walk hypothesis says that price changes are not predictable by using linear combinations of previous price changes.

On the other hand, many economists and financial analysts argued that it is possible to predict the stock prices by using a regression equation. The equation

⁹³ Fama E F, ‘The behaviour of stock market prices’, *Journal of Business*, Volume 38, 1965, pp. 34-105.

⁹⁴ Granger and Morgenstern, “Predictability of Stock Market Prices”, Massachusetts: Heath Lexington Books, 1970. p.72.

⁹⁵ Granger and Morgenstern, *op. cit.*, p.177.

attempts to predict earnings, dividends and prices. The form of this equation is as follows:

$$[\text{price per share}]P = a + b [\text{dividend per share}] + c [\text{earnings}] + r [\text{residual}]$$

To predict the stock prices in Kuwait both models should be estimated. As mentioned in this chapter, Hijazi's work was related to the second model, and as his work is quite recent there is no need to examine this model.

To forecast the stock prices in Kuwait, many tests have been made. Monthly data are used for these equations, the main reason being that their results are more accurate than in the case of quarterly data. In fact, in order to examine the random walk hypothesis, it was more useful if we use the daily or weekly share stock price index and Runs Test. But because these data were not available this work was done by using monthly data. The OLS method was used to analyse the data of SPI for 112 months over the period 1979-88. The following models have been tested:

$$\log \text{SPI} = a + b_1 \log \text{SPI}(-1) + b_2 \log \text{SPI}(-2), \quad (14)$$

$$\text{SPI} = a + b_1 \text{SPI}(-1) + b_2 \text{SPI}(-2) + b_3 \text{SPI}(-3), \quad (15)$$

$$\text{SPI} = a + b_1 \text{SPI}(-1) + b_2 \text{SPI}(-2), \quad (16)$$

$$\text{SPI} = a + b_1 \text{SPI}(-1), \quad (17)$$

where the (-1), (-2), and (-3) are the lag terms.

The following results have been found;

$$\begin{array}{rcc} \log \text{SPI} = .0347 & +1.1789 \text{SPI}(-1) & -.161 \text{SPI}(-2) \\ & [.0938] & [12.369] \\ & (12.569) & (-2.084) \end{array} \quad (14)$$

$$R^2 = .9701 \quad , \quad MR = .9849 \quad , \quad DW = 1.98$$

As can be seen from the above result the coefficients for all variables are significant. The DW indicates no autocorrelation. The sign of SPI(-2) is negative and

this indicates that the two-month lag time of stock market prices has a negative effect on future prices.

$$\begin{aligned}
 \text{SPI} = & 1.7433 + 1.2156 \text{SPI}(-1) - .2596 \text{SPI}(-2) + 0.281 \text{SPI}(-3) \\
 & \quad \quad \quad [.961] \quad \quad \quad [.1494] \quad \quad \quad [.0962] \\
 & \quad \quad \quad (12.657) \quad \quad \quad (-1.738) \quad \quad \quad (.292)
 \end{aligned} \tag{15}$$

$$R^2 = .9722 \quad , \quad MR = .9860 \quad , \quad DW = 1.99$$

The above result shows that only the SPI(-1) has a good effect on the SPI. The coefficient of the three-month lag of the stock price index is statistically insignificant (t=.29). The DW of the equation indicates no autocorrelation.

$$\begin{aligned}
 \text{SPI} = & 1.9705 + 1.212 \text{SPI}(-1) - .2293 \text{SPI}(-2) \\
 & \quad \quad \quad [.0921] \quad \quad \quad [.0924] \\
 & \quad \quad \quad (13.158) \quad \quad \quad (-2.481)
 \end{aligned} \tag{16}$$

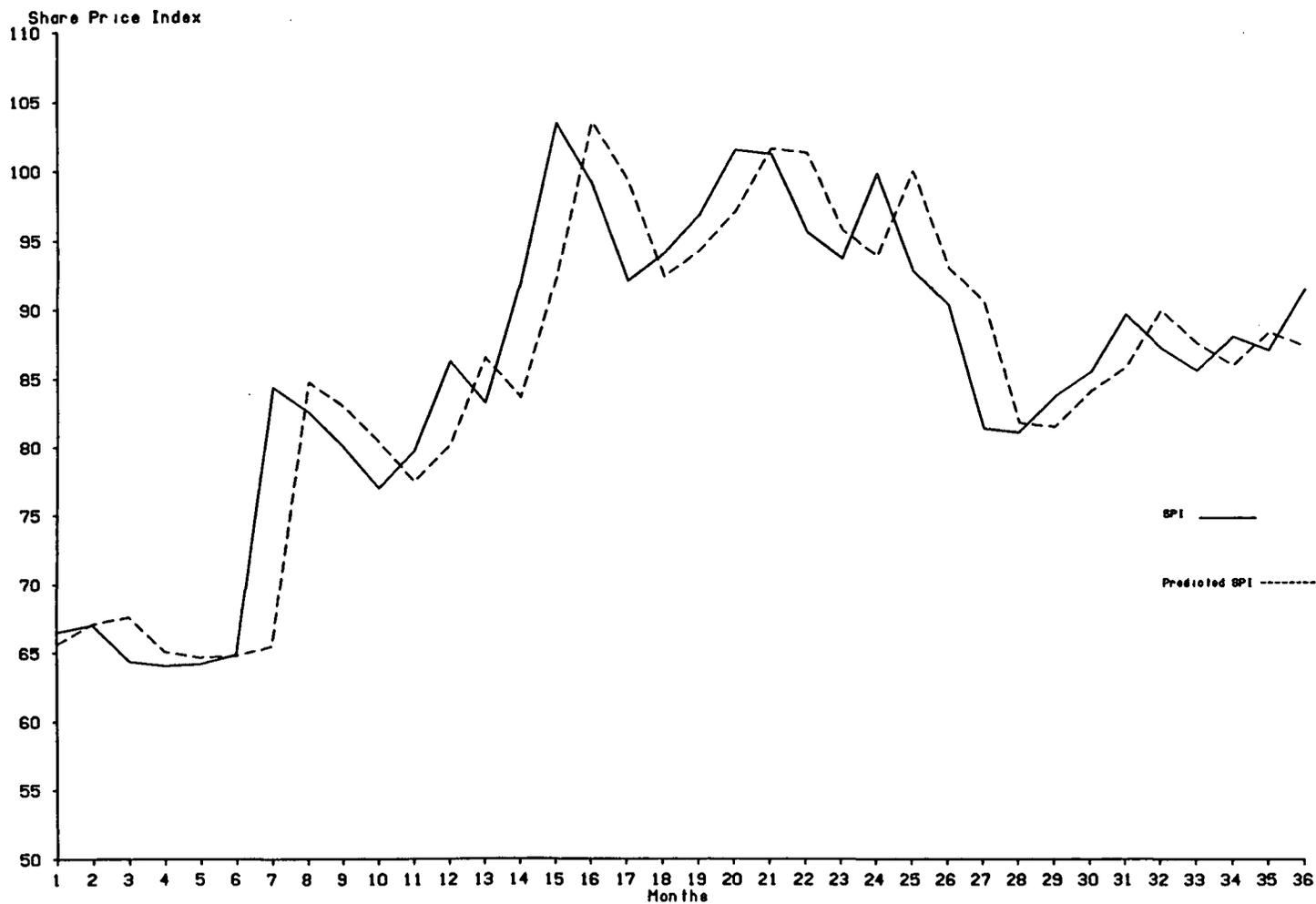
$$R^2 = .97 \quad , \quad MR = .9859 \quad , \quad DW = 1.9831$$

This equation shows that there is a negative relationship between the SPI and the SPI (-2). The above results can be explained by the fact that random walk hypothesis states that price changes in stock prices cannot be predicted from earlier price changes in the stock price. Hence, it will be more useful for the purpose of this study to predict the stock prices in the Kuwait stock market by using the simplest random walk hypothesis as follows:

$$\begin{aligned}
 \text{SPI} = & 1.5312 + .9867 \text{SPI}(-1) \\
 & \quad \quad \quad [.0160] \\
 & \quad \quad \quad (61.51)
 \end{aligned} \tag{17}$$

$$R^2 = .9851$$

FIGURE 6.A . SPI and PREDICTED SPI (1986-88)



Source: Central Bank of Kuwait

TABLE 6-2: Regression Models Between SPI and Some Macro Economic Variables

VARIABLES	t STATISTIC	R2	D.W.
f(SIGHT,QM,EURO,SPI-1)	(4.2,-2.88,.646(*),8.79)	0.94	1.77
f(M1,PL,SPI-1,D1)	(3.84,-3.70(*),7.52,2.54)	0.94	1.66
f(QM,SIGHT, GOLD-2)	(-3.02,3.45,9.69,2.73,-1.35(*))	0.95	2.136
f(M1,QM,LP,D1,D2,SPI-1)	(2.1,-2.7,1.6(*),1.7,-1.1(*),10.4)	0.95	1.88
f(M1,OILR-1,SPI-1)	(2.41,2.36,9.91)	0.91	1.33(*)
f(QM,SIGHT,SPI-1,OILR-2)	(-2.25,3.67,8.81,-.17(*))	0.94	1.66
f(SIGHT,QM,SPI-1,GOLD)	(4.36,-3.96,9.21,1.08(*))	0.94	1.84
f(SIGHT,QM,GOLD,SPI-1,D1)	(3.2,-3.0,.11(*),9.5,1.7)	0.94	1.87
f(M1,QM,SPI-1,D1,LP-1)	(3.2,-3.2,9.5,2.01,.517(*))	0.94	1.77

The best result was obtained from equation (17). It had the highest R2 (= .98) and the relationship between SPI and SPI(-1) was very strong. Therefore by the use of this equation the future prices of stock in the Kuwaiti stock exchange can be forecast. Figure 6.A shows the relationship between SPI and predicted SPI. As can be seen from the figure the slope of predicted SPI is similar to that of SPI.

6.6 INSIGNIFICANT EQUATIONS:

Table 6-2 shows the 9 regression models which have been made to examine the relationship between the SPI and some macroeconomic variables. These equations have some problems, most of them due to the sign, t statistics, and the DW. In the table, the problems appear with a (*).

6.7 CONCLUSION:

In this chapter two important subjects have been discussed. Firstly, the previous empirical studies about the Kuwaiti stock market have been reviewed. The general conclusion of these studies was that there was a significant relationship between stock prices and some micro and macro economic variables. Secondly, the relationship between stock prices and macro economic variables and the random walk model in Kuwait has been examined.

In fact the empirical results of the relationship between stock prices and some macro economic variables show that all the equations have high explanatory power, that is R^2 varied between .92-.97. Also, the coefficients are well determined statistically in the sense of having high explanatory significance in the sense that all of them have t-statistic more than 2, and all parameters of the explanatory variables have the a priori expected signs. The DW statistic indicates no autocorrelation. However, the results can be summarised by the following:

1. In the land purchases and sight deposits equation (1) the result indicates that a 1 per cent increase in land purchase leads to a .26 per cent rise in SPI. This result confirms the argument of many researchers who stress that the money spent by the government in land purchases shifted to the stock market. This argument is also supported by the fact mentioned in Chapter IV that the Kuwaiti economy has a limited absorptive capacity. Therefore, the surplus funds are always invested locally in the stock market or real estate, and abroad in some international financial markets. A 1 per cent increase in sight deposits leads to an increase in stock prices by .005 per cent.

The quasi-money equation (3) shows that QM has a negative relationship with the stock price index. The findings here confirms the applicability of the quantity theory with respect to the demand for currency, that is currency is held for transaction purposes only. A 1 per cent increase in QM leads to a decrease in SPI by .009 per cent.

The relationship between US\$ /KD exchange rate and SPI is negative. The results of this relationship [equation (4)] shows that a 1 per cent increase in \$ /KD leads to a decrease in SPI of .15 per cent. In fact this result shows the strong

impact of \$ /KD on the stock market prices. The result indicates that Kuwaiti investors do hold most of their investment in US dollars.

In equation (8) the impact of the oil revenues was exhibited. As discussed in Chapter II oil is the main source of income for Kuwait. With an increase in oil revenues government expenditure increases and consequently there is more activity in the local economy. The findings of equation (8) show that a 1 per cent increase in lagged oil revenues leads to an increase in SPI of .0027 per cent. The low value of elasticity here suggests that the influence of oil revenues on the stock market is indirect, mainly through land purchases and government expenditure.

2. The relationship between the changes in the money supply under both definitions (M1, M2) has significant results. For M1 the equation shows that a 1 per cent change in M1 results in a .0656 per cent change in SPI. For quasi-money (QM) the results are insignificant. The relationship between SPI and M2 is examined in equation (12). The results show that a 1 per cent increase in M2 leads to a .047 per cent increase in SPI. This result confirms the applicability of the quantity theory which stresses that money supply affects the asset prices (see Chapter V). In fact the results of the equations for the relationship between money and SPI in Kuwait lead to the conclusion that M1 has more effects on stock prices than M2. Finally, comparing these results with similar work done in USA and UK, the conclusion can be drawn that the effect of domestic liquidity on the stock prices in the Kuwait Stock Market is similar in nature to that in USA and UK where prices increase as a result of an increase in domestic liquidity.
3. The best forecasting model for the Kuwait Stock Market prices is the random walk model. The results of this model, in case of Kuwait stock prices, shows that the predicted stock price is closer to the actual price. Comparing these results with results obtained from other models, for example dividend per share and earning model, it can be concluded that these results are more powerful and accurate.

Besides the problems in regard with the data, which have been discussed earlier in this chapter, this work has focused on the following problems:

1. The first can be described as human behaviour. The investors in the Kuwait stock market are quite different from investors in other stock markets in the world. For example, the investors in the Kuwait stock market want a high return or profit and in a very short time. Another example is that prices in the Kuwaiti stock market do not reflect the financial position of the companies. Also, the government has supported price levels many times (see Chapter V). In fact, when the government stopped buying stock from the market the price level declined. These factors affected this work by making fluctuations in the SPI.
2. The second factor which affected these results may be the SPI itself. As mentioned earlier in this chapter the SPI is calculated by the geometric mean for the close share prices. In fact, this formula does not take into account the transactions and the volume of shares traded in the market. Therefore, each company has the same weight in this index. However, there are many companies whose shares do not have continuous activity in the secondary market. It is useful for the accuracy of this index to give more weight to the more active shares in the stock market.

The next chapter will contain the conclusion and some recommendations.

Chapter VII

SUMMARY AND CONCLUSIONS

7.1 RESEARCH FINDING:

1. In reviewing the different characteristics of the economy of Kuwait (Chapter II), it is apparent that it is based on a raw-material (oil). It was also noticed that the revenue from the export of oil has declined significantly and the state budget has been in deficit for the sixth year running.
2. As far as the population is concerned, Kuwaiti's find themselves outnumbered in their own country. This situation will continue in the foreseeable future. Much of this imbalance relates to the high rate of immigration.
3. As was stated in Chapter III the government has issued public instruments (treasury bonds and bills) to finance its budget. It is worth mentioning that Kuwait has no system of tax and consequently no income from tax.
4. In reviewing the historical development of the Kuwait Stock Market in Chapter IV it was found that:
 - (a) The main features of the Stock Market during the first stage (1952-69) were:
 - the main institutions and structure of the stock market were established.
 - the secondary market was very simple and the financial information about the listed shareholding companies was very poor.
 - (b) During the second stage (1970-77), in 1971, the first law in Kuwait concerning organized trading in shares was issued and the secondary market was very active. In 1977, the first crisis in the Kuwait Stock Market had arisen. The main factor which contributed in escalating the crisis was forward-dealing.

- (c) During the third stage (1978-80), most of the developments were concerned with controlling the 1977 crisis. The government played a significant role in the developments in the Kuwait Stock Market.
 - (d) During the fourth stage (1981-88), the great crisis had arisen (Al-Manakh). However, the new organization of the stock market in Kuwait was established during 1983-88.
 - (e) The legal developments in Kuwait Stock Market had not followed or moved at the same speed as the developments in stock market activity.
 - (f) It was clear that the economic policy of the government of Kuwait was to support the private sector, even if the participants in this sector suffer.
 - (g) The CBK failed to play its role in controlling the monetary policy during the Al-Manakh period. As a consequence, the commercial banks were adversely affected during this period. However, the CBK has not managed the growth rate of money supply. In fact money supply (M2) in Kuwait expanded in 1981 by 35 per cent compared with 1980. Also, it may be concluded that the CBK has started to be more active in performing its job since 1986.
 - (h) It was clear that as an institution, the structure of Kuwait Stock Market was very weak.
5. In reviewing previous empirical studies of the relation between stock prices and macro economic variables (Chapter V) it was found that most studies in this area were made in order to examine the relationship between stock prices and monetary policy. Very little attention was given to examining the relationship between stock prices and other macro economic variables. Some of the researchers who were involved in these studies concluded that there was a relationship between stock prices and some macro economic variables such as monetary and fiscal factors, GNP, inflation etc.
6. In Chapter VI it was found that:
- (a) There is a significant positive relationship between stock prices and some macroeconomic variables in Kuwait, such as government expenditure on

land purchases, sight deposits, lagged oil revenue, M1 and M2.

- (b) There is a significant negative relationship between stock prices and some macro economic variables: quasi-money and exchange rate of \$ /KD.
- (c) The government's influence on the stock prices came from its expenditure, mainly towards land purchases. This suggests that a 1 per cent increase in this variable leads an increase in SPI of .26 per cent.
- (d) The relationship between money supply (for both of its definitions) and stock prices is similar to that for any other country where stock prices increase as a result of an increase in money supply. However, this study concludes that the M1 has more effect on stock prices than M2.
- (e) The best forecasting model for the stock prices in Kuwait is the random walk model. The result of this model shows that the predicted stock prices are close to the actual stock prices.
- (f) Some additional conclusions can be drawn from the econometric models presented in Chapter VI. The results show that the effect of the exchange rate of \$ /KD is very significant.

7.2 RECOMMENDATIONS:

The following suggestions may be of use in helping the stock market in Kuwait to play its due role in the economy of Kuwait:

1. Establishing Market Makers Companies. These companies can play a major role in the creation of a secondary market for all sectors and recycling the capital funds. Another important job for these companies is to balance the secondary market mechanism and creating an equilibrium between supply and demand in the market. Also, these companies will accelerate the market activity over the whole year and eliminate the seasonal activity.
2. As mentioned in Chapter IV, one of the most important causes of the Al-Manakh market crisis was the limitation of the stock market base. Therefore, it is useful to expand the market base through:

- Expanding trade in the stock market by creating new investment instruments or by including foreign-investment instruments in the market.
 - Expanding the tradeable stock base either by selling the government holdings of stocks or by the privatisation of some government institutions.
3. It is necessary to establish an information centre in the Kuwait Stock Market. The main purpose of this centre should be wide publication of as much information as is possible about the listed companies. This information should be accurate and reflect the real status of these companies.
 4. Establishing a financing system in the stock exchange. This system should allow banks and investment companies to finance the transactions in the secondary market.
 5. By establishing more institutions in the stock market, the structure of the market will be strengthened. These institutions could be financial and investment funds or estate funds.
 6. The stock exchange administration should start to evaluate the listed companies. In fact some of these companies have not shown any sign of profit in their balance sheets since the Al-Manakh crisis.
 7. The stock exchange administration should embark on a programme aiming at improving its administrative structure.
 8. The CBK should give more attention to stabilizing the stock prices in the secondary market. The CBK can accomplish this either directly by entering the stock market or indirectly through the monetary policy.
 9. The listed companies in the Kuwait Stock Market should issue quarterly financial statements.
 10. The government should establish a new system for its expenditure on land purchases to remove any inflationary effects of this policy on the stock prices.
 11. Finally, it is imperative that the Kuwaiti government establish a taxation system at the earliest. The main reason for this recommendation is that the

government cannot sustain national development by relying solely on oil revenues which fluctuate in value.

7.3 SUGGESTIONS FOR FURTHER RESEARCH:

The work reported above was confined to examining the impact of macro economic factors on the stock prices in Kuwait. Nevertheless, it has demonstrated the need for further discussion and research into the nature of the relationship between stock prices and macro economic variables.

As was mentioned during the course of the study, there are problems related to availability of data. It may be more useful to re-examine the models used in this study with more data, such as monthly data. One may also apply the test of causality between these variables with stock prices. Also, it may be of interest to examine the efficiency of the stock market in Kuwait.

In order to better understand the relationships between macro economic variables and stock prices it may be appropriate to analyse, in a manner similar to what has been done here, other stock markets in the world. Such studies, if carried out, would lead to an interesting comparison between different stock markets.

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Appendix

TABLE A-1: MONEY SUPPLY

(KD million)

Period	CI	CM	CC	SD	M1	QM	M2
1976	137.0	7.9	129.0	264.7	393.7	826.5	1220.2
1977	161.3	10.4	151.0	339.7	490.7	1092.7	1583.4
1978	188.4	11.3	177.1	422.0	599.1	1351.4	1950.5
1979	229.5	13.6	215.9	410.6	626.5	1663.2	2289.7
1980	268.7	17.4	251.3	418.4	669.7	2187.8	2857.5
1981	303.5	18.8	284.7	956.9	1241.6	2652.9	3894.6
1982	365.5	22.7	342.7	857.0	1199.7	2998.3	4198.1
1983	364.9	24.3	340.6	787.6	1128.2	3254.2	4382.4
1984	344.8	19.7	325.1	588.8	913.9	3583.0	4496.9
1985	351.9	24.0	327.9	565.7	893.6	3554.6	4448.2
1986	362.1	25.1	337.1	584.8	921.9	3639.8	4561.8
1987	366.5	28.2	338.3	636.9	975.2	3798.7	4774.0
1988	367.9	25.5	342.5	549.7	892.1	4199.6	5091.0

Source: CBK, *Quarterly Bulletin*, various issues.

CI = currency issued, CM = cash with commercial banks, CC = currency in circulation, SD = sight deposits, M1 = CC + SD, QM = quasi money, and M2 = money supply.

TABLE A-2: COMMERCIAL-BANK DOMESTIC CREDIT

By Sector
(KD million)

Period	Trade	Industry	Construction	Agriculture and fisheries	Financial institutions	Personal facilities	Real-estate	Others	Total
1979	523.5	91.4	332.2	30.6	120.9	520.1	254.3	44.6	1917.5
1980	671.8	159.2	408.0	39.9	142.8	620.7	306.6	69.6	2418.6
1981	843.2	174.3	523.2	40.2	236.0	890.3	371.2	94.5	3172.8
1982	955.3	193.6	673.4	43.0	269.9	1002.8	612.1	147.0	3897.3
1983	948.8	148.2	664.2	25.7	314.1	934.5	683.4	125.4	3844.3
1984	987.7	144.9	683.2	23.8	360.6	1040.4	742.8	125.4	4108.9
1985	932.8	122.2	680.0	21.8	360.9	1188.3	768.6	123.9	4198.5
1986	920.2	106.4	701.1	15.4	371.4	1271.5	816.5	127.6	4330.0
1987	962.1	140.3	784.7	11.8	465.5	1295.3	838.1	127.7	4625.6
1988	967.2	136.1	813.7	12.3	362.0	1346.7	912.4	146.5	4696.9

Source: Central Bank of Kuwait.

**TABLE A-3: VOLUME AND VALUE OF TRADED SHARES AND
THE NUMBER OF TRANSACTIONS IN KUWAIT STOCK
MARKET**

Period	Number of transactions	Value of traded shares (KD 000)	Volume of traded shares (000)
1978	33081	142641	1395510
1979	32556	1864781	1688434
1980	21039	1325488	1437093
1981	28262	1956442	2473436
1982	23839	1903505	1983054
1983	15881	512584	732405
1984	5951	116526	700195
1985	11215	116405	1787301
1986	25239	375355	4299700
1987	74526	828884	2066293
1988	63983	710715	2798696

Source: Central Bank of Kuwait.

TABLE A-4: DATA USED TO ESTIMATE MODELS OF CHAPTER VI

Period	\$ /KD	OILR	LP	GEXP	EURO	GOLD	D1
79 Q1	274.27	825.40	19.20	498.20	10.87	237.94	0
Q2	277.84	984.50	41.20	439.60	10.62	258.59	0
Q3	275.74	1567.60	15.30	454.90	11.66	316.84	0
Q4	277.10	1387.40	32.40	624.30	14.70	412.91	0
80 Q1	273.32	1766.10	55.20	469.70	17.11	631.40	0
Q2	270.64	1288.40	161.30	684.00	11.15	543.98	1.0
Q3	267.32	1138.60	62.80	695.70	12.08	648.02	1.0
Q4	270.20	1125.70	32.50	567.80	17.10	608.06	1.0
81 Q1	272.97	1354.90	69.50	626.30	16.33	518.75	1.0
Q2	277.61	978.40	227.20	863.80	17.47	478.86	1.0
Q3	283.17	790.40	122.00	746.70	18.44	420.99	1.0
Q4	281.41	538.60	142.90	760.20	13.80	420.41	1.0
82 Q1	284.16	866.40	112.90	710.60	14.87	362.84	1.0
Q2	286.58	528.70	69.60	688.10	15.09	333.00	1.0
Q3	289.16	673.10	6.60	587.60	12.59	380.17	0
Q4	291.75	660.30	21.20	714.00	9.91	427.18	0
83 Q1	290.81	540.60	59.00	779.70	9.16	464.03	0
Q2	291.8	497.30	92.60	803.10	9.32	427.91	0
Q3	292.05	661.80	52.60	686.20	10.08	410.20	0
Q4	291.40	823.30	49.00	724.10	9.86	387.74	0

TABLE A-4. CONTINUED

84 Q1	293.01	740.00	83.20	762.30	10.08	383.70	0
Q2	293.13	699.50	699.50	37.10	749.80	11.40	0
Q3	296.26	617.20	3.10	642.10	11.88	345.10	0
Q4	301.51	614.70	5.40	710.40	9.78	333.82	0
85 Q1	306.29	646.60	5.00	736.10	8.98	301.78	0
Q2	302.40	616.70	98.70	851.70	8.19	319.38	0
Q3	302.20	551.50	15.10	671.30	8.08	323.29	0
Q4	292.49	640.50	16.40	751.40	8.09	324.27	0
86 Q1	286.35	506.90	22.40	667.70	7.85	343.43	0
Q2	291.40	403.80	72.40	781.10	6.93	341.85	0
Q3	291.10	258.80	19.80	520.00	6.22	381.45	0
Q4	293.29	275.30	6.70	695.40	6.08	404.00	0
87 Q1	280.30	478.50	.80	599.30	6.31	406.10	1.0
Q2	274.89	473.00	14.00	621.90	7.07	441.51	1.0
Q3	282.67	708.20	44.10	472.00	7.06	457.34	1.0
Q4	277.60	612.90	22.80	665.40	7.90	473.06	0
88 Q1	274.93	368.30	0	595.10	6.90	454.27	0
Q2	274.87	358.10	4.0	668.10	7.41	451.33	0
Q3	284.27	406.70	13.30	615.40	8.34	427.43	0
Q4	281.70	424.70	4.90	618.10	8.97	415.56	0

TABLE A-4. CONTINUED

Period	Sightdep	SPI	M1	QM	M2	FL	PL	D2
79 Q1	410.8	107.20	598.50	1387.70	1986.20	108.20	380.50	0
Q2	442.10	116.30	631.80	1406.70	2038.50	129.20	420.60	0
Q3	474.40	127.40	686.70	1560.90	2247.60	135.10	480.00	1
Q4	410.00	117.20	626.70	1663.20	2289.80	120.90	520.10	1
80 Q1	431.60	109.00	654.00	1828.20	2482.30	134.30	514.90	1
Q2	499.70	128.70	723.40	1909.00	2632.40	2632.40	524.30	1
Q3	500.5	125.30	737.50	2021.70	2758.70	144.90	611.80	1
Q4	418.40	116.60	669.70	2187.80	2857.80	142.80	620.70	1
81 Q1	502.70	123.00	751.20	2223.80	2975.00	185.70	636.00	1
Q2	682.70	155.00	944.30	2441.30	3385.50	199.70	703.00	0
Q3	662.90	161.00	927.30	2598.30	3525.60	205.10	737.00	0
Q4	930.10	176.00	1214.90	2652.90	3867.80	236.00	890.30	0
82 Q1	1215.70	201.20	1526.40	2678.70	4205.10	243.30	1042.30	0
Q2	1281.80	197.50	1606.30	2656.20	4262.70	300.70	1066.60	0
Q3	851.30	180.50	1186.10	2927.00	4113.10	303.90	1068.40	0
Q4	837.0	181.50	1179.10	3003.10	4182.80	269.90	1002.80	0
83 Q1	891.80	171.40	1245.20	2972.60	4217.80	271.90	949.90	0
Q2	914.30	168.90	1282.70	2985.70	4268.40	249.60	942.80	0
Q3	814.00	167.10	1154.60	3065.90	4220.50	255.60	892.50	0
Q4	772.90	167.10	1113.60	3254.30	4367.80	314.10	934.50	0

TABLE A-4. CONTINUED

84 Q1	722.30	166.40	1070.50	3273.60	4344.00	322.20	935.50	0
Q2	644.90	138.60	1027.80	3236.10	4264.00	332.70	983.20	0
Q3	637.10	129.70	953.70	3368.10	4321.80	349.00	1044.60	0
Q4	588.80	110.50	913.90	3583.0	4496.90	360.60	1040.40	0
85 Q1	579.0	91.10	906.20	3616.20	4522.40	352.80	1088.30	0
Q2	596.90	71.70	941.61	3665.40	4607.00	354.90	1144.00	0
Q3	386.30	73.30	905.20	3683.90	4589.10	364.40	1158.90	0
Q4	560.40	65.00	888.30	3556.10	4444.30	360.70	1188.30	0
86 Q1	582.30	64.40	929.50	3502.90	4432.40	365.50	1182.10	0
Q2	579.80	64.90	932.20	3515.80	4448.00	358.50	1214.80	0
Q3	588.80	80.00	924.10	3667.00	4591.10	357.90	1253.00	0
Q4	585.00	86.30	921.90	3639.80	4561.80	371.40	1271.50	0
87 Q1	632.40	103.50	965.30	3519.70	4485.00	368.30	1237.30	0
Q2	602.40	94.20	957.00	3697.40	4654.40	380.20	1252.60	0
Q3	568.20	101.30	902.80	3800.90	4703.70	418.70	1275.50	0
Q4	636.90	99.90	975.20	3798.70	4774.00	465.50	1295.03	0
88 Q1	589.50	81.50	932.80	3976.50	4909.30	417.20	1299.20	0
Q2	620.70	85.60	969.70	3850.30	4820.00	409.10	1360.00	0
Q3	608.20	85.70	943.00	3855.40	4798.40	381.00	1333.10	0
Q4	549.70	91.60	892.10	4199.60	5091.80	362.00	1346.70	0

TABLE A-5: STOCK PRICE INDEX: 1979-1988

(Jan. 1979 = 100)

Period	79	80	81	82	83	84	85	86	87	88
Jan.	102.7	115.4	118.8	179.1	172.7	166.5	98.6	66.5	83.3	92.9
Feb.	106.2	114.4	124.2	177.1	173.1	166.7	96.8	67.0	92.1	90.5
Mar.	107.2	109.0	123.0	201.2	171.4	166.4	91.1	64.4	103.5	81.5
Apr.	106.5	106.7	120.7	217.3	171.5	153.6	82.2	64.1	99.2	81.2
May	109.9	119.5	132.7	205.1	169.3	142.6	67.4	64.2	92.2	83.8
Jun.	116.3	128.7	155.0	197.5	168.9	138.6	71.7	64.9	94.2	85.6
Jul.	122.9	133.4	154.8	183.9	166.1	129.8	70.4	84.4	97.0	89.8
Aug.	124.0	129.9	156.8	184.3	168.3	126.2	73.5	82.6	101.6	87.4
Sep.	127.4	125.3	161.8	180.5	167.1	129.7	73.3	80.0	101.3	85.7
Oct.	125.2	125.0	162.2	173.4	165.7	117	70.6	77.0	95.7	88.2
Nov.	118.6	115.9	177.5	169.9	165.4	120.0	67.1	79.8	93.8	87.2
Dec.	117.2	116.6	176.4	181.5	167.1	110.5	65	86.3	99.9	91.6

Source: Central Bank of Kuwait.

