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FACTORS AFFECTING THE LEBANESE  
CURRENCY BETWEEN 1974-1985

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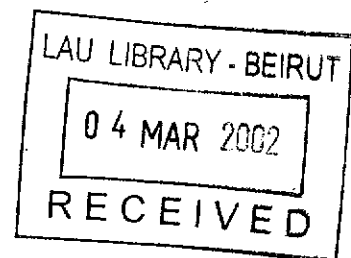
A Research Topic  
Presented to Business Division  
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of the Requirements for the Degree  
Master of Science in Business  
Management

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BY  
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APPROVAL OF RESEARCH TOPIC

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TITLE OF RESEARCH TOPIC FACTORS AFFECTING THE LEBANESE CURRENCY  
BETWEEN 1974-1985.

The following professor nominated to serve as the advisor of the  
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## Chapter I

### INTRODUCTION

#### A. Statement of the Problem: (The weakness of the Lebanese Currency.)

Until 1974, the Lebanese currency was considered as a strong currency. This judgement was confirmed by the fact of the continuous appreciation of the Lebanese currency in the exchange market with respect to other currencies, mainly the US dollar.<sup>1</sup>

Since 1974, the Lebanese pound began to lose its value vis à vis the US dollar. Its exchange rate against the US dollar moved from LL 2.30 at the end of 1974, to LL 5.49 at the end of 1983, to LL 8.89 at the end of 1984, and reached finally LL 18.10 at the end of 1985.<sup>2</sup>

It is true that the depreciation of the pound has witnessed in the last two years large fluctuations vis à vis the US dollar, which has been essentially conditioned by the uncertainty of the prevailing conditions and climate in the country.

In fact, the Lebanese pound lost 62% of its value in terms of the US dollar between 1983-1984 and 103.6% between 1984-1985.

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<sup>1</sup>.F.Baz, M.Sader, and N.Khairallah, Ecochiffres 1985 (Beirut:Tamam, S.A.L., 1985), p. 247.

<sup>2</sup>.Ibid, p.247; AS-Safir Newspaper, issue 5.1.1986(Beirut: Arabia, S.A.L, 1986), p.6.

Yet, the reasons of the free devaluation of the pound is not restricted any more to the evolution of the political crisis; however, this time the economic crisis have joined the game.

Since the beginning of 1984, the increase of the "monetary base"<sup>3</sup> of the country became more and more abnormal. The balance of payment witnessed for the second time a worrying deficit, the budget deficit to the gross national product reached unacceptable percentage, 35%, one of the percentages which is the highest in the world. Besides, the public debt reached at the end of 1985 around 53.1 billion Lebanese pounds.<sup>4</sup>

Within this double context of political and economic crisis, there is no doubt that the capacity of the Lebanese citizens to adapt to their problems has considerably declined. In addition, the obscurity of the political climate, the psychological factor over the exchange market, and the uncertainty of the future have led to a phenomenon of generalized escape from the Lebanese pound. As a result, the Lebanese pound has weakened risking its total collapse.

Facing this situation, the Central Bank of Lebanon (Banque du Liban) has intervened and has imposed a set of exchange regulations in order to fight the depreciation of the Lebanese pound, which are relatively severe enough within the context to limit the conversion of the Lebanese pound into other currencies.

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<sup>3</sup> Monetary Base= currency in circulation outside Banque du Liban plus demand deposits of commercial banks.

<sup>4</sup> As-Safir Newspaper, issue 23.1.86 (Beirut Arabia, S.A.L, 1986), p.6.

B. Statement of the purpose:

The purpose of the research is to analyze the factors affecting the value of the Lebanese currency from 1974 until 1985. The analysis will be based upon the following factors, which are considered as relevant variables for the Lebanese economy:

- 1) Gross National Product (GNP)
- 2) Balance of Payments
- 3) Budget deficit
- 4) Money Supply

Above variables will be analyzed in terms of their structure, composition, and evolution over the period under study, their determinants, and the elements impacting their trends.

Finally, the study will offer some strategic solutions as preventive measures in order to limit the wide fluctuations of the Lebanese currency, and to stabilize its exchange rate vis à vis the US dollar and other foreign currencies.

C. Performance Objective and Methodology:

The objective of the study is to estimate step by step a broad multivariable function for the value of the Lebanese pound.



## Methodology

The methodology of the research consists of seven steps:

- 1- Formulation of a broad multivariate regression equation<sup>5</sup>, where the value of the Lebanese currency is a function of the economic variables under analysis. The value of the Lebanese currency will be treated as the dependent variable, whereas the economic variables are treated as the independent variables.
- 2- Screen those independent variables by including in the equation only those that have published data and those that yield high correlation coefficient between the dependent variable and each independent variable separately.
- 3- Construct the multivariate equation by including those independent variables having high correlation.
- 4- Estimate the regression equation whether it is a linear form, or power form, or both.

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<sup>5</sup> Donald R. Plane, and Edward B. Oppermann, Statistics for Management Decisions (Dallas, Texas: Business Publications Inc, 1977), p. 281.

5- Apply the least square method<sup>6</sup> to compute the constants of the equation.

6- Compute the coefficient of determination  $R^2$ .<sup>7</sup> Such coefficient shows the predictive power of the equation.

7- Compute the " $T$ "<sup>8</sup> values in order to show whether the relationship between each independent variable and the dependent variable is significant or not. This step provides an explanatory power of the equation.

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<sup>6</sup> Ibid., p. 282.

<sup>7</sup> Ibid., p. 287.

<sup>8</sup> Ibid., p. 288.

## Chapter II

### Presentation and Analysis of Results.

#### A. Gross National Product

Despite the difficult situation, the Lebanese economy remained active until the beginning of the year 1980. This activity has slowed significantly since then. Actually, the indications concerning the economy can only be fragmentary.

"Lebanon has not recovered yet from its worse economic conditions. This general observation can be made even though adequate statistics on the level of economic activity are lacking and national accounts do not exist. The latest official figures for Gross Domestic product (GDP) date back to 1973. Since then, only estimates have been available for some years. Structural changes developing over the last few years have in any case made estimates based on old series of statistics increasingly haphazard and of doubtful utility. Various cross-checks suggest, however, that GDP in constant prices is much lower now than in 1975. This fall in GDP was partly offset in recent years by net inflows of funds which helped widen the gap between GDP and GNP and sustain per capita income."<sup>9</sup>

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<sup>9</sup> Banque du Liban, Annual Report 1983, p. 8.

Lebanon's GNP in constant prices continued to decline after 1981. It is difficult to prove such decline or quantify it due to the current state of statistics. The decline in the GNP stemmed in varying degrees from the fall in real GDP and the decrease in the revenues generated abroad.

This section will examine the GDP in real terms of the country in terms of the developments of different economic sectors within Lebanon. These sectors will be assumed as fair measurements for the Lebanese economy in general and particularly to the GDP of the country, because of the lack of official statistical estimates concerning the extent and magnitude of the decline in the aggregate output of Lebanon. The main economic sectors of Lebanon are:

- 1- Agriculture.
- 2- Industrial sector.
- 3- Services.

1- Agriculture:

The agricultural sector in Lebanon is considered to be the weakest in terms of contribution to the economy of the country. For several years, this sector has faced a large number of temporary and structural difficulties. During 1983 and 1984, and due to the different causes which led to a territorial occupations, it became impossible to quantify the aggregate output for this particular sector. In addition, emigration, the state of security, the difficulties of transports and marketing in particular, and finally the rise in labour costs, were all responsible for the decrease in the investments in this sector.

"In several cases, agricultural cultivation became less productive and consequently several products became less and less competitive on domestic and overseas markets. Moreover, bad harvests due to periods of political instability, plus competition from foreign products certainly contributed to lower profitability."<sup>10</sup>

Table -1-						
Fruit Exports						
( in Thousand of Tons)						
Fruit/Year	1974	1977	1979	1980	1981	1982
Apples	121	92	79	87	69	66
Citrus fruits	188	180	179	183	173	124
Grapes	10	12	24	24	25	19
Others	29	26	51	40	38	48
TOTAL	348	310	333	334	305	257
<u>Source:</u> Banque du Liban, <u>Annual Report 1982</u> , p. 13.						

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<sup>10</sup>. Banque du Liban, Annual Report 1982, p.8.

Table-2-

## Tobacco Production &amp; Exports.

(in Metric tons)

	1970	1971	1979	1980	1981
Production	7000	8500	4349	2700	3120
Exports	4490	3776	-	5500	1084

Source: F. Baz, M.Sadr, and N.Khairallah, Ecochiffres 1985  
(Beirut: Tamam, S.A.L, 1985), p. 16.

Mainly, fruit products and tobacco represent a major bulk of the agricultural products to Lebanon. Concerning the vegetable production and exports, figures are not available due to the previously stated reasons. But what we can say that Lebanon is self sufficient with respect to these products.

The decline in the agriculture output can be explained by the following:

- a. The concentrated way in which Lebanon's markets are structured.
- b. Unfavoured position of the Lebanese goods in foreign markets.
- c. Obstacles which have arisen with regard to Arab markets.

i- Restrictions on Lebanese agricultural products destined to some Arab countries.

ii- Foreign competition in the Arab markets.

d. Agricultural regions of the Western Bequaa and the South are the main victims of the Israeli occupation.

## 2. Industrial sector:

Developments on the internal scene in Lebanon have certainly had a substantial negative impact on the country's productive capacities.

Since 1975, the industrial sector has been facing serious problems. These problems have been aggravated to pertain the need to repair the serious material damage caused by the previous decade, which was plenty of troubles, in the various regions of Lebanon. The situation worsened when there was inadequate capital investment, which led to the obsolescence of equipment, consequently a fall in productivity and in the ability of Lebanese products to compete on the domestic and foreign markets. Besides, the migration of skilled manpower, deficiencies in the infrastructure, and the growing difficulties of access to traditional markets have added their burden on this sector.

There is no index available of the level of the industrial production. Therefore, the research has to rely on the analysis of certain indicators that Banque du Liban uses. Such indicators

are: the production and consumption of the electric power; the value of industrial exports; and the merchandise exports. At least these indicators would be considered as the representative indications for this sector.

Table -3-  
Production and Consumption of Electric Power  
On EDL Network  
(in Millions of KWH)

<u>Year</u>	<u>Production</u>	<u>Consumption</u>	<u>Purchases</u>
1974	979	1679	700
1975	877	1554	677
1976	265	858	593
1977	677	1525	848
1978	744	1644	900
1979	1303	1884	581
1980	1334	2325	991
1981	1498	2596	1098
1982	1792	2493	701
1983	1812	2825	1013
1984	1686	2714	1028

Source: Banque du Liban, Annual Report 1982 and 1984, pp. 13 and 8.

All through the twelve years, consumption has surpassed the production. The main reasons for this problem are due to the following:

- a- The security problems have prevented the supply of electricity to the regions and hampered the movement of the technical teams to the electric power stations located in some insecured areas.



b- The electricity thefts which has burdened the deficit of the Electricity Company of Lebanon (Electricité du Liban) (EDL). These thefts were estimated around the 800 million Lebanese pounds per year.<sup>11</sup>

c- The slow and inefficient maintenance of the plants and equipments.

Table -4-

## Industrial and Merchandise Exports

(in Millions of Lebanese Pounds)

Year	Industrial Exports.	Percentage Change	Merchandise Exports	Percentage Change
1974	836.5	-	1740	-
1975	623.9	-25	-	-
1976	-	-	-	-
1977	836.1	+25	2365	+36
1978	772.4	-8	2162	-8.5
1979	1263	+64	3024	+39.8
1980	1819.1	+44	4098	+35.5
1981	2265.5	+25	5444	+32.8
1982	1924	-15	5256	-3.4
1983	1296.4	-33	2694	-48.7
1984	9513	-27	2461	-8.6

Source: Banque du Liban, Annual Report 1979 & 1980, 1982, and 1984, pp 11, 14, and 8.

<sup>11</sup> F. Baz, M. Sader, and N. Khairallah, Ecochiffres 1985 (Beirut: Taman, S.A.L., 1985), p.173.

As shown in the previous table, it is noticed that the industrial sector has weakened due to the difficulties which has faced concerning productivity and marketing. The use of often outdated methods of production are leading to a decline in productivity and in the capacity of Lebanese products to compete on different markets. In addition, the difficulties of exporting to the countries which were once considered as traditional markets to Lebanon, are due to foreign competition and the efforts of these countries to industrialise themselves.

### 3. Service Sector

Finally, with this respect, the service sector which is considered the most important sector to Lebanon, has witnessed devastating results for the last few years. The service sector contributes for about 75% of the GNP.<sup>12</sup> In this regard, the study will evaluate the contribution of the service sector relative to other industries based on relevant indicators used by Banque du Liban. These indicators will be exhibited in the following tables.

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<sup>12</sup> F. Baz, M. Sader, and N. Khairallah, Ecochiffres 1985 (Beirut: Tamam, S.A.L, 1985), p. 289.

Table -5-

Banks & Insurance  
(in millions of Lebanese Pounds)

<u>Year</u>	<u>Banks' Credits to Private Sector</u>	<u>% Change</u>	<u>Documentary Credits for Imports</u>	<u>% Change</u>	<u>Net Premiums Subscribed (Life excluded)</u>	<u>% Change</u>
1974	5733	-	4200	-	74.67	-
1975	6855	+ 19.5	3850	- 8.3	-	-
1976	7247	+ 5.7	1800	-50.3	-	-
1977	8031	+ 10.8	4500	+150	44.46	-40.4
1978	10009	+ 24.6	5100	+13.3	57.73	+29.8
1979	13031	+ 30.2	7500	+47	95.72	+65.8
1980	16166	+ 24.05	10000	+33.3	107.81	+12.6
1981	21292	+ 31.7	-	-	141.33	+31.1
1982	25497	+ 19.7	-	-	168.36	+19.1
1983	33400	+ 31	8245	-17.5	215.73	+28.13
1984	43268	+ 29.5	10376	+25.8	243.21	+12.7

Source: F.Baz, M.Sader, and N. Khairallah,  
Ecochiffres 1985(Beirut: Tamam,  
 S.A.L, 1985), p.21; Banque du  
 Liban, Annual Report 1979 & 1980,  
1982, and 1984, pp. 10-20, 14-21,  
 and 8.

Table -6-

## Touristic Activity

	<u>1974</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
Number of hotels (Beirut)	100	55	62	62	62	61	37
Number of Rooms	6434	3973	4197	4298	4298	4275	2521
Lodging capacity (Guest-Rooms)	2331345	1408288	1528805	1568770	1573068	1560375	730039
Number of guest-room rented	1618264	314688	310877	257934	426655	348050	189140
Rate of occupancy per room	69.4	22.3	20.3	22.8	27.1	22.1	25.9
Number of beds	10512	6494	6758	6685	6685	6641	4007
Lodging capacity (Bed/day)	378784	2281282	2461338	2440025	2446710	2423965	1161949

Source: F.Baz, M. Sader, and N.Khairallah,

Ecochiffres 1985 (Beirut: Tamam,

S.A.L, 1985), p. 215.

Table -7-

## Port of Beirut &amp; Airport Activities

Port Activity (Merchandise in 000 of tons)				Airport Activity (Passengers in thousands)		
<u>Year</u>	<u>Loaded</u>	<u>Unloaded</u>	<u>In transit</u>	<u>Departures</u>	<u>Arrivals</u>	<u>Transit</u>
1974	668	3412	932	1095	1115	534
1975	395	2434	914	-	-	-
1976	-	-	-	-	-	-
1977	140	2047	267	670	682	66
1978	133	1447	175	604	685	117
1979	226	2374	153	709	742	120
1980	248	2732	210	746	785	107
1981	287	2194	189	685	643	66
1982	97	1789	85	409	432	42
1983	106	2546	88	523	504	60
1984	158	2158	79	297	290	7

Source: Banque du Liban, Annual Report 1982 and 1984,  
pp. 15 and 8.

It is noticed that the banking and Insurance sectors have always grown while the touristic activity and transports activities have not. The interpretation of the drastic results can be attributed to the following:

- a- The multiple destructions of hotels during 1975, 1976, and 1982.
- b- The unstable military and political conditions which discouraged visitors, foreigners, and Lebanese emigrants, to come and spend their vacation in Lebanon.

c- The exodus of many servicing agencies and firms such as:  
airlines, shipping, marketing, financial etc...

d- The closure of the airport and ports for long periods,  
which paralysed the communications between Lebanon  
and the rest of the world, consequently affected the  
operations of transport.

e- The classification of the Beirut Airport reputation  
due to the multiple high-jack operations.

f- The multiplication of the illegal ports along the  
coastal way, which encouraged the smuggling and hence  
have had their impact on the operations of the port  
of Beirut.

The first variable for the equation would be the real  
Gross Domestic Product at constant prices. The figures for  
the GNP in Lebanon are not available due to the inadequate  
statistics on economic activity, and national accounts are  
not well developed or sophisticated. Therefore, the study  
will rely on the GDP, which can be used as the best approxi-  
mation for the GNP.

Table -8-  
 Gross Domestic Product (GDP)  
 (in millions of Lebanese Pounds)

<u>Year</u>	<u>Nominal GDP</u>	<u>Consumer Price Index</u>	<u>Real GDP at Constant Prices</u>
	-PY-	-P-	-Y-
1974	8137	100	8137
1975	8211.05	109.91	7471
1976	6051.31	141.64	4272
1977	10181.57	168.93	6027
1978	11410.5	186.09	6132
1979	14581.97	230.33	6331
1980	18979.46	284.99	6660
1981	22577.52	340.16	6637
1982	24286.05	403.55	6018
1983	26500	464	5711
1984	31700	585	5419
1985	48300	1083	4460

Source: Banque du Liban, Quarterly Bulletin 1984,  
21-22, second & third quarters, p.6;  
AS-Safir newspaper, issue 9-4-86(Beirut:  
 Arabia, S.A.L, 1986), p.6.

Real GDP for the period under study is calculated by deflating the nominal GDP in column 2 by the consumer price index, column 3, giving the values reported in column 4. The resulting series captures well the qualitative features of the economic activity over the whole period. There are remarkable declines in the economic activity for the war years 1975-76, and the period of 1981 till 1985. In 1976, GDP declined by about 43%. There is a sharp upturn in 1977 with the semblance of a return to normality. However, this rapid recovery was not sustained. With the continuous fighting and uncertainty, the level of real GDP remained around the depressed level of 1977. Finally, the GDP started to decline again after 1980, particularly a decline of 5.11% and 18% was reported for 1984 and 1985 respectively.



## B- Balance of Payments:

### 1. A Critical Instrument for the Economic Analysis:

It is only in relation with the global structure of the Lebanese economy, mainly based on the service sector, and largely opened to the foreign markets, regional and international, that the study can interpret the remarkable commercial deficit resulting from the movement of merchandise between Lebanon and the rest of the world (20.65 billion Lebanese pounds in 1984);<sup>13</sup> and the real significance of the positif balance of services and unilateral transfers (8.62 billion Lebanese pounds in 1984),<sup>14</sup> large enough, which until 1982 permitted to compensate for the deficit incurred in the merchandise balance and increased the net foreign assets<sup>15</sup> of the country.

The deficit in the merchandise balance, and the surplus of the invisible operations (smuggling, etc...) have substituted the decrease of the internal activity in the country for an increase in the external activity. However, this extroversion on the foreign markets, and the weakness of the central authority of the country have led since 1983 a deficit in the external payment reaching billions of Lebanese pounds, threatening for the first time the strength of the local currency.

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<sup>13</sup>. F. Baz, M. Sader, and N. Khairallah, Ecochiffres 1985 (Beirut: Tamam, S.A.L, 1985), p. 47.

<sup>14</sup>. Ibid, p. 47.

<sup>15</sup>. Net Foreign Assets = (Foreign Assets Commercial Banks - Foreign Liabilities Commercial Banks) + (Foreign Assets Banque du Liban - Foreign Liabilities Banque du Liban).

## 2. Evolution and Structure of the Balance of Payments

The Lebanese balance of payments consists of two parts:

- a. The Commercial balance.
- b. The Capital Account balance.

Until 1982, the balance of payments had shown surplus balances. In 1983, this balance showed a deficit balance. This was due to the deterioration of the commercial balance (Exports less Imports) resulting from extensive imports for the public sector. Besides, the capital outflows had their impact on such deficit, as a result of decreased confidence of the Lebanese citizens towards the future conditions in Lebanon. Moreover, the unilateral transfers were reduced due to the inherent fear and worry of the Lebanese work force and investors in the Gulf region about the obscure future of the country. The deficit continued during 1984 with a decrease in capital inflows and an increase in capital outflows. The weakness of the balance of payments implied a decrease in the volume of the net foreign assets of the country. This decline occurred in the assets of Banque du Liban, which was entitled to secure the needs for the public sector in form of foreign currencies. These needs have represented 768 million of US dollars in 1984.<sup>16</sup>

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<sup>16</sup> F. Baz, M. Sader, and N. Khairallah, Ecochiffres 1985 (Beirut: Tamam, S.A.L, 1985), p. 323.

For a long period of time, the current account balance of the country was positive. During 1983, and for the first time, the current account balance turned to be negative. The deficit was equal to 5.121 billion of Lebanese pounds; consequently, there was a decrease in the net foreign assets of the country equal to 933 million of US dollars. This is explained by the shrinkage of the service and unilateral transfer accounts and as shown in the following table.

Table -9-				
Service/unilateral transfers and Net Foreign Assets				
(in millions of US Dollars)				
Year	Service & Unilateral Transfers.	%change	Net Foreign Assets.	%change
1981	3388.5	-	4631	-
1982	2860.7	-15.5	4884	5.46
1983	1958.4	-31.5	3951	-19.1
1984	969.2	-50	2598	-34.2

Source: F.Baz, M. Sader, and N.Khairallah, Ecochiffres 1985 (Beirut: Tamam, S.A.L, 1985), pp 50-51.

In other words during 1983, Lebanon attempted to draw on its reserves in foreign currencies from the International Monetary Fund (IMF) in order to finance the current deficit for that year, which was equal to 933 million of US dollars. During 1984, the current account balance deepened and reached 1.353 billion of US dollars, the equivalent of 12.028 billion of Lebanese Pounds. All these results explain in general the depreciation of the Lebanese currency.

Table -10-

Evolution and Structure of the Balance of Payments  
(in millions of Lebanese Pounds)

<u>Year</u>	<u>Exports</u>	<u>Imports</u>	<u>Commercial deficit</u>	<u>Services &amp; Unilateral transfers.</u>	<u>Current Account Balance</u>
1974	3462	5585	-2123	3616	1493
1975	2589	4817	-2228	2578	350
1976	1441	1811	-370	878	508
1977	2289	5020	-2732	4976	2244
1978	2518	6025	-3507	4048	541
1979	2961	9489	-6528	7798	1270
1980	3765	13882	-10117	11834	1717
1981	4560	17479	-12919	15621	2702
1982	3325	13260	-9935	10899	964
1983	4213	20086	-15873	10752	-5121
1984	6022	26666	-20644	8616	-12028
1985	-	-	-	-	4506

Source: F.Baz, M. Sader, and N. Khairallah,  
Ecochiffres 1985 (Beirut: Tamam, S.A.L, 1985),  
 p.50; Banque du Liban, Annual Report 1979 & 1980, p. 32; As-Safir newspaper, issue 12.5.86  
 (Beirut: Arabia, S.A.L, 1986), p.6.

3. An Approach to determine the impact of Balance of  
Payments on exchange rates:

"To use the balance of payments as a barometer of the forces of demand and supply of foreign exchange in the market, it is necessary to isolate those entries which respond to relative economic conditions from those transactions which are made solely to fill the gap between the initial supply and demand for foreign

exchange. The current account balance is often considered to be a measure of these forces."<sup>17</sup>

A surplus in the current account balance indicates that the supply of foreign currency exceeds the demand for foreign currency used to trade goods and services between Lebanon and the rest of the world.

In absence of any other transaction in the balance of payments, the surplus in the current account balance will tend to put downward pressure on the price of foreign currencies, particularly the US dollar, against the Lebanese pound. In other words, there will be pressure for a devaluation of the foreign currencies relative to the Lebanese currency.

After having seen the importance of the balance of payments relative to the rates of exchange and as a source of financing, the current account balance is assigned as a second variable for the analysis because it summarizes the results of all the accounts under the balance of payments.

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<sup>17</sup>. Heinz Reihl, and Rita M. Rodriguez, Foreign Exchange and Money Markets (New York: Mac Graw-Hill, Inc, 1983), p.131.

## C - Budget Deficit

### 1. An Overview

The decrease in the state revenues and the increase in the state expenditures since 1976 has led to a huge deficits in the budget. Until 1985, the state continued to run deficit, causing a substantial increase in the public debt. At a time when the economic activity of the private sector was shrinking and the state revenues were declining, the state kept spending at high levels. In the last few years, the financial and monetary authorities have worked together to minimize the harmful consequences of the accumulated deficits. The budget deficit affected in its turn the internal public debt, which reached 53.1 billion Lebanese pounds in 1985, against 30.7 and 21.1 billion Lebanese pounds for 1984 and 1983 respectively.<sup>18</sup> The state did not pay any attention to the accumulated internal public debt in the past, because it was an internal debt; in other words, a debt in Lebanese currency. Besides, this debt was thought to be renewed permanently through the commercial banks until the opportunity comes to the state enabling it to enhance control over its various resources and revenues generated from its investments.

The budgets of 1983 and 1984 were characterized by an enhanced state control over its revenues. The year 1983 witnessed the closing of the illegal ports and the activation of of the tax collection procedures. This process continued during

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<sup>18</sup>. AS-Safir Newspaper, translation, issue 23-1-86 (Beirut: Arabia, S.A.L, 1986), p.6.

1984 through several calls made by the state in order to induce the tax contributors to pay their taxes. The state went far beyond this process and made arrangements with some financial institutions so that these institutions would provide a tax collection service in order to ease the tax settlements on contributors. Despite these measures, the deficit increased to reach effectively 21 billion Lebanese pounds in 1985.<sup>19</sup>

## 2. Reasons for Budget Deficit

The main reasons for the budget deficit can be attributed to the following:

- a. The government efforts to increase the size of the Lebanese Army and enhance its capabilities and modernize its arms: The military equipments and arms purchases have burdened the budget and have absorbed a great portion of the state revenues.

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<sup>19</sup>. As-Safir Newspaper, translation, issue 23-1-86 (Beirut: Arabia, S.A.L, 1986), p.6.

Table -11-

Defence Allocations under the State Budget  
(in millions of Lebanese Pounds)

<u>Year</u>	(A) <u>Defence Allocation</u>	(B) <u>Total Allocations</u>	<u>A / B</u>
1981	1383.46	5076.93	27.24%
1982	1245	6300	20%
1983	1465	8610	17%
1984	2030	10897	18.6%
1985*	2350	10892	21.5%

Source: Banque du Liban, Annual Report 1983 and 1984, pp 22, 23; F. Baz, M. Sader, and N. Khairallah, Ecochiffres 1985(Beirut: Tamam, S.A.L, 1985), p. 149.

\* estimated

b- The interruption of the Arab aid: It should be stressed that since 1983, Lebanon have not received any sum of the Arab aid pledged at the 1979 Tunis summit. This meeting had decided to provide Lebanon with 2 billion US dollars over five years, a settlement of 400 million US dollars per year. In 1982, Lebanon received 46 million US dollars out of the 400 million. Sofar, Lebanon has only received



817 million US dollars out of the 2 billion US dollars it should have received for the five years period. The following table shows clearly the contribution per country of the Arab aid pledged to Lebanon.

Table -12-

Arab Aid per Country  
(in millions of US dollars)

Country	Contribution in %	Total Contribution	settlements		
			1980	1981	1982
UAE	11.43	228.6	45.72	91.44	NA
ALGERIA	7.14	142.8	28.56	-	-
IRAQ	14.86	297.2	59.44	59.44	NA
SAUDI ARABIA	28.58	571.6	114.32	114.32	NA
KOWEIT	15.71	314.2	62.84	92.84	NA
QUATAR	6.57	131.4	26.28	13.14	NA
LIBYA	15.71	314.2	62.84	-	-
TOTAL	100%	\$2000-	\$400	\$371.18	\$46

Source: Banque du Liban, Annual Report 1983, p.21;  
F. Baz, M. Sader, and N. Khairallah,  
Echociffres 1985 (Beirut: Tamam, S.A.L,  
1985), p. 25.

The main reasons for such interruption, were because of some Arab countries were either affected by the Gulf war, or faced difficult financial situations. For example, during 1981, Algeria allocated reserves due to its very bad financial situation. In its turn, Libya did not disburse its contribution to Lebanon due to political reasons. During 1982, Koweit witnessed the collapse of its financial market "Souk Al Manakh".

c- Another factor which contributed to the widening of the budget deficit is the huge deficit of the Petroleum Products Fund (PPF). The PPF was set up by the government in order to finance the imports of fuel for local consumption. Before 1976, Lebanon obtained the crude oil from Iraq at preferential prices. In 1976, when Iraq stopped to pump crude oil, Lebanon resorted to import crude oil from Saudi Arabia and refined products from other sources at official prices, with the difference made up by the PPF.

"According to 1986 budget submitted to the council of ministers, the fuel subsidies constituted the heaviest burden for the treasury after a cumulative deficit of 12 billion Lebanese pounds."<sup>20</sup>

Between 1955 and 1980, the PPF recorded profits for 19 years and losses for 7 years.<sup>21</sup>

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<sup>20</sup>. M. Itani, and J. Sabra, Desubsidising the Petroleum Products. (Beirut: Unpublished data, Feb, 14, 1986), p. 2.

<sup>21</sup>. Ministry of Industry and Petroleum, Petroleum Directorate General, Petroleum Statistics 1980, p. 97.

Since 1980, the prices of crude oil have steadily increased. Yet, it was not possible, in conformity with the social policy of the Lebanese government, to raise the prices of oil derivatives. This led to additional deficit. As a matter of fact, the cumulative deficit of the PPF for 1980 was estimated at 1.3 billion Lebanese pounds, and 2 billion Lebanese pounds for 1981. The situation worsened with the prevalence of smuggling of fuel to neighboring countries. The gap between domestic and international price of fuel products encouraged the smuggling. As a result, smuggling inflated the fuel bill and aggravated the deficit of the PPF, which reached 2 billion Lebanese pounds per year for the last few years.

d- Decrease in the customs receipts: Such receipts are vital to the Lebanese economy, and are considered as a source of revenue to the country. The evolution of the effective customs receipts from 1974 till 1985, strips the camouflage of the state budget deficit. There are several reasons for the decrease in the customs receipts:

- i- Increased activity of illegal ports.
- ii- Underbilling.
- iii- Prevalence of smuggling.
- iv- Inactivity of the legal ports and Beirut airport for long periods during 1975, 1980 and 1982 due to the severe clashes, and military operations.

Table -13-

Evolution of the Effective and Expected Custom Receipts  
(in millions of Lebanese Pounds)

<u>Year</u>	<u>Expected Receipts</u>	<u>Effective Receipts</u>	<u>Variance</u>
1974	141.7	476.9	+335.2
1975	335.1	294.1	- 41
1976	64.5	64.5	-
1977	482.2	482.2	-
1978	700	508.4	-191.6
1979	700	682.1	- 17.9
1980	700	682.8	- 17.2
1981	900	435.1	-464.9
1982	500	400.3	- 99.7
1983	2000	1272.8	-727.2
1984	3000	462.4	-2537.6
1985*	4000	400	-3600

Source: F. Baz, M. Sader, and N. Khairallah,  
Ecochiffres 1985 (Beirut: Taman,  
S.A.L, 1985), p.165.

\*estimated

e- Increase in the public expenditures. Public works had their priority under various budget allocations. Therefore, the ministry of public works benefited from the second share of allocations between 1982 and 1984.<sup>22</sup> These allocations were in line with the government intentions on completing the country's overall highway network plan.

"The overall highway network plan was expected to cost an estimated LL 5.376 billion in 1980. The plan includes the building of a coastal highway from Zahrani in the South to Tripoli in the North, as well as ring-road around the capital, and another highway linking Beirut with the Syrian capital, Damascus."<sup>23</sup> Besides, the article 24 of the budget law provides the disbursement of LL 235 million from 1982 to 1984 for additional work and to the side-road connections on some sections of the coastal highway.<sup>24</sup> However, the estimated costs are deflated and do not correspond with cost increments resulting from inflation and the depreciation of the currency.

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<sup>22</sup>. Banque du Liban, Annual Report 1984, p. 23.

<sup>23</sup>. Marwan Iskandar and Elias Baroudi, The Lebanese Economy 1981-82 (Beirut: Middle East Economic Consultants, S.A.R.L, 1982), p. 165.

<sup>24</sup>. Ibid, p. 165.

The increase in the state spending is related to credits extended by the treasury to public institutions to enable them to continue their operations. In addition, exceptional aid granted by the state to institutions and individuals during the Israeli invasion. Furthermore, the state had granted aid to regions that were subject to car bomb explosions, and military clashes. Furthermore, the state established the Council of the South, a governmental agency, whose main purpose is to pay indemnities to the Southerner martyrs' families, and to compensate for those who suffer from the Israeli occupation.

Finally, a major factor affecting the public expenditures in related to wages and salaries that the government pays to its employees. At the level of the general budget, these wages and salaries continue to have a big share out of the total expenditures.

Table -14-  
Wages and Salaries  
(in millions of Lebanese Pounds)

Year	Wages & Salaries (A)	Total Expenditures (B)	A/B
1974	521.3	1218.8	42.7%
1975	567.4	1021.4	55.55%
1976	516.3	642.2	80.39%
1977	682.2	2006.9	34%
1978	841.2	2660	37.22%
1979	1091.3	2805.9	39%
1980	1192.6	4700	25.37%
1981	1469.1	5076.8	28.94%
1982	1884.1	6300	29.91%
1983	2474.8	8610	28.74%
1984	3089	7293	42.35%

Source: Banque du Liban, Annual Report 1984, p.22;  
F.Baz, M. Sader, and N.Khairallah, Ecochiffres  
1985(Beirut: Tamam, S.A.L, 1985), p.147

### 3. Evolution of the Budget Deficit:

The net balance of the general budget is defined in terms of the difference between the revenues generated and expenditures incurred by the state. If revenues exceed expenditures, we have budget surplus; and if expenditures are greater than revenues, we then have budget deficit. For the analysis, the budget deficit is taken as a third variable affecting the value of the local currency.

Table -15-

Evolution of Budget Deficit  
(in millions of Lebanese pounds)

Year	Budget deficit (-) Budget surplus (+)	% change
1974	+ 51.5	-
1975	-222.7	-532
1976	-490.2	-120
1977	-567.8	-15.8
1978	-624.9	-10
1979	-1214	-94
1980	-2008	-65.4
1981	-2533	-26
1982	-6187	-144
1983	-6497	-5
1984	-9957	-53.4
1985	-18586	-86.6

Source: Banque du Liban, Annual Report 1979&1980  
p. 27; As-Safir Newspaper, issue 12.5.86  
(Beirut:Arabia, S.A.L,1986),p.6; F.Baz,  
M.Sader, and N.Khairallah, Ecochiffres 1985  
(Beirut:Tamam,S.A.L, 1985), p.149.

## D- Money Supply:

### 1- Definition:

"The exact definition of  $M$ , the money supply, is partly a matter of taste rather than scientific necessity.

(Along with  $M_1$  and  $M_2$ , economists have been able to define more than a dozen different money supply concepts:

$M_3$ ,  $M_{1\frac{1}{2}}$ ....!"<sup>25</sup>

For the most part of this section, the study will follow the most common practice and define the total money supply thus:

" $M$  is the sum of coin and currency in circulation outside the banks, plus checkable demand deposits (after various routine adjustments have been made in this magnitude).

Along with this narrow definition of total  $M$  ( which we may call  $M_1$ ), it is sometimes useful to work with a broader definition (called  $M_2$ ), which includes time and saving deposits in addition to coin, currency, and demand deposits."<sup>26</sup>

In Lebanon, the total money supply is defined in a broader terms, where  $M_1$  is the sum of currency in circulation plus demand deposits, and  $M_2$  is the sum of  $M_1$  and other deposits in Lebanese and foreign currencies.

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<sup>25</sup>. Paul A. Samuelson, Economics (New York:Mc Graw-Hill, Inc, 1980), p. 264.

<sup>26</sup>. Ibid, p. 265.



## 2- Evolution of the Money Supply

Table -16-

## Money Supply

(in millions of Lebanese pounds)

Year	M <sub>1</sub>	Index	%Change	Other Deposits in L.L.	%Change	Foreign Currency Deposits	%Change	M <sub>2</sub>	Index	%Chang
1974	2998	100	-	4688	-	1892	-	9578	100	-
1975	3836	128	28	4729	.87	2088	10.3	10653	111	11
1976	4905	164	28.1	4520	-4.4	1782	-14.6	11207	117	5.4
1977	5062	169	3	6716	48.6	2595	45.6	14373	150	28.2
1978	6148	205	21.3	8385	24.8	2696	3.9	17229	180	20
1979	6684	223	8.8	9578	14.2	5606	108	21868	228	26.6
1980	7666	256	14.8	12163	27	8997	60.4	28826	301	32
1981	9005	300	17.2	16605	36.5	14787	64.3	40397	422	40.2
1982	11070	369	23	26014	56.6	11473	-22.4	48577	507	20.1
1983	12845	428	16	34375	32.14	14400	25.5	61620	643	26.8
1984	13783	460	7.5	41193	19.8	21301	48	76277	796	23.8
1985	-	-	-	-	-	38293	79.8	119556	1248	56.7

Source: Banque du Liban, Annual Report 1984, p. 12;  
Quarterly Bulletin, 2nd and 3rd quarters 1984, p.11;  
As-Safir newspaper, issue 19-7-1986(Beirut:Arabia,  
 S.A.L, 1986), p. 11.

From above table, it is noticed that. during the events of 1975-1976 and 1978, M<sub>1</sub> increased due to the extensive withdrawals from demand deposits and other deposit accounts. However, M<sub>1</sub> decreased as soon as the situation became normal during 1977, 1979 and 1980. This evolution is explained by the fact that under uncertainty, the tendency of the public to maintain bank-

notes increases. It is evident that part of these banknotes is spent while the remaining part is hoarded. The relative importance of such hoarding has had its impact on inflation.

After having changed with the same rythm of 21.3% and 20% in 1978,  $M_1$  and  $M_2$  have differed progressively afterwards. In 1979,  $M_1$  increased by 8.8% whereas  $M_2$  increased by 26.6%. During 1980, the corresponding growth reached 14.8% and 32% respectively. The deviation between the growth rates of  $M_1$  and  $M_2$  came from the increase in foreign currency deposits. In fact, the deposits in foreign currency represented an average of 18% out of  $M_2$  during the periods of 1974, 1977, and 1978. At the end of 1979 and 1980, the foreign currency deposits accounted for 26% and 31% out of  $M_2$  respectively.

$M_1$  grew by 23% during 1982. This growth rate was the highest seen in the last four years. The growth of  $M_1$  was due primarily to the expansion of currency in circulation. This growth may be attributed to the public's preference to have cash in hand during troubled periods. As a reminder, the period of 1982 witnessed the Israeli invasion.

Unlike  $M_1$ ,  $M_2$  grew much more slowly in 1982 than in the previous years. Whereas in 1981  $M_1$  accelerated more rapidly than at any time in the previous years. The same aggregate,  $M_2$ , grew more slowly in 1982 by 20.14% than at any time since 1978. Thus, at the end of 1982,  $M_2$  had reached LL48,577 million, against LL 40397 million a year earlier. The trend towards

faster growth in  $M_2$  witnessed during the last few years was thus reversed in 1982.

The two components of quasi-money did not grow in the same way during 1982. The other deposits in local currency grew by 56.6% in 1982. The growth rate was 36.5% in 1981.

Resident's foreign currency deposits dropped by 22.4%. It may be recalled that these deposits grew by 64.3% in 1981 and by 60.4% in 1980. The fall in the volume of foreign currency deposits may be attributed partly to massive conversions effected to local currency. The year 1982 witnessed a remarkable shift in the structure of deposits, with a marked decrease in foreign currency deposits as a proportion of total deposits, with a return to levels comparable with those of the period before the events of 1975. Besides, "the fall in interest rates for the dollar and other foreign currencies encouraged the conversion of foreign currency deposits into local currency deposits when the difference between the nominal rates for the dollar and the local currency shrank during the second half of 1982."<sup>27</sup>

During 1983 and 1984,  $M_1$  was subject to a slow growth as compared to the previous year. The quasi-money structure was changed completely during the same period. As a matter of fact, the other deposits in local currency reached the lowest growth rate since 1979. This is explained by the massive conversions effected to foreign currency. The causes of such conversions

<sup>27</sup> Banque du Liban, Annual Report 1982, p. 18.

can be attributed to psychological factors of the depositors based on future expectations against the local currency. This clearly shown in the table 16, where foreign currency deposits grew more rapidly than other deposits and demand deposits in local currency.

### 3. Factors affecting the money supply:

There are three main factors that affect the money supply.

- a. Net foreign assets (NFA)
- b. Credits to the private sector.
- c. Net claims on the public sector.

Table -17-  
Counterparts of Money Supply  
(in millions of Lebanese Pounds)

Year	NFA US\$	NFA L.L	% Change	Credits to private Sector	% Change	Net claims on the public Sector	% Change
1974	2464	5751	-	5771	-	-638	-
1975	2490	6101	6	6900	19.5	-748	-17.2
1976	2283	6609	8.3	7292	5.6	-694	7.2
1977	3004	9012	36.3	8064	10.5	-565	18.5
1978	3184	9567	6.1	10085	25	-139	75.4
1979	3574	11641	21.6	13141	30.3	279	300.7
1980	4045	14753	26.7	16295	24	1294	363.8
1981	4631	21347	44.7	21441	31.6	2389	84.6
1982	4884	18608	-12.8	25996	21.4	10844	353.9
1983	3951	21693	16.5	33927	30.5	14215	31
1984	2598	23094	6.4	43784	29	19020	33.8

Source: Banque du Liban, Annual Report 1979 and 1980, 1984,  
pp. 23 & 34.

a. Net Foreign Assets:

Until 1981, the net foreign assets of the banking system (commercial banks and Banque du Liban) of Lebanon continued to grow. In 1982, the net foreign assets dropped to LL 18608 million, a growth of -12.8%, and then stood at LL 21693 million at the end of 1983, to return roughly to the 1981 level. In 1984, the net foreign assets grew at 6.4%. In fact, this apparent increase for the last two years clearly disguises the true growth of the net foreign assets, because the Lebanese pound had depreciated sharply against the major currencies throughout 1983 and 1984.

The decline of the Net Foreign Assets of the banking system in Lebanon can be attributed to the following:

- i- The intervention of Banque du Liban in the foreign exchange market in order to limit the wide fluctuations of the exchange rates of the Lebanese currency.
- ii- The deterioration in the balance of payments, whereby Banque du Liban was entitled to cover the settlements due in foreign currencies. Before 1975, Lebanon was able to cover the trade deficit and budget deficit from the revenues generated by the service sector. From 1975 and until 1982 the trade deficit and budget deficit of the country were covered from the capital inflows generated by the

Lebanese workers abroad. Nowadays, Lebanon has lost these priveleges which are of great importance to back-up the net foreign assets of the country.

b. Credits to the private sector:

Total credit to the economy, grew at a rate of about 22.74% per annum over the last decade. This relatively high growth rate does not contradict the view that after 1982, banks were very contious about extending new credits to the private sector. The substantial proportion of the growth represented the accumulation of interests on rolled-over credits, considering that most of the banks in Lebanon compute the interests on over draft accounts each month.

This stagnation in credit extensions can be explained by the slow down of the economic activity in the country. Another explanation can be related to the preventive measures followed by the banks in Lebanon during the last few years aiming at: limiting expansions and reducing risks, enhancing their assets in a way not to distribute profits, and backing-up their previsions and reserves.

c. Net claims on the public sector:

From 1976 and on, the net claims on the public sector began to increase reaching the level of 11 billion of Lebanese pounds at the end of 1982. The deterioration in the position

of the public sector since 1982 has increased its borrowing, which reached 19 billion Lebanese pounds at the end of 1984.

Until 1982, the commercial banks used to finance most of the state needs due to the good position of the balance of payments, which had shown surplus balances until 1982. During 1983, the balance of payments weakened and witnessed a deficit for the first time. The situation worsened during 1984 when the deficit in the balance of payments deepened. The year 1985 witnessed massive outgoing transfers from the country due to the political and economic conditions. As a result, the commercial banks became less and less able to finance the demanding needs of the state. Therefore, the commercial banks limited their subscriptions to Treasury bills. For example, the subscriptions increased by 477 million Lebanese pounds during 1984 against 3158 million Lebanese pounds in 1983 and 6962 million Lebanese pounds in 1982, despite the increase in interest rates on Treasury bills from 9.75% end of 1983, to 15.5% end of 1984, and 20% end of 1985.

# E- Interpretation of Results:

After having determined the causes of the weakness of the local currency, the results are analyzed in terms of the multivariate regression analysis..

The value of the local currency will be matched against the U.S dollar exchange rate for the period under study. The value of the Lebanese pound is then a function of four independent variables and has the following form:

$$V = f(y, b, d, m_2)$$

V= Rate of exchange of the US dollar against the local currency at the end of each year.

The unity of exchange will be equal to US dollar 1000-

y= Real GDP..

b= Current account of the balance of payment.

d= Budget deficit.

$m_2$ = Broadly defined as:  $M_1$  plus other deposits in local and foreign currencies.

As it is shown in the computer print-out, the analysis is based on twelve observations; where observation one represents the year 1974, and observation twelve represents the year 1985.

The multivariate regression equation is solved by the computer and has the following form:



$$v = 2947.38 - .115y + .127b - .88d - .0175m_2$$

$$t \text{ values } ( -.252 ) ( 1.276 ) ( -1.829 ) ( .223 )$$

$$R^2 = .9419$$

$$\text{Adjusted } R^2 = .9087.$$

$$F \text{ statistic} = 28.37$$

$$\text{Degree of freedom} = 7$$

Although the  $R^2$  and the adjusted  $R^2$  are very high, which give the equation a very good predictive power, that is: a 90% change in the exchange rate is explained by the change in the respective four independent variable. However, the  $t$  values of the equation would lead to accept the nil hypothesis. Therefore, the analysis should reject these independent variables as statistically insignificant variables.

The  $F$  statistic is compared to a critical value obtained from the  $F$  distribution, presented in the  $F$  distribution tables in any statistical book. A critical value of 2.92 at the 90% confidence level is obtained. Since the  $F$  statistic of 28.37 exceeds the critical value, the correlation is highly significant between the dependent variable and the independent ones.

TABLE -18-

. list

 $v = f(y, b, d, m_2)$ 

	v	y	b	d	m2
1.	2333.8	8137.	1493.	51.5	9578.
2.	2450.	7471.	350.	-222.7	10653.
3.	2894.7	4272.	508.	-490.2	11207.
4.	3046.5	6027.	2244.	-547.8	14373.
5.	3030.9	6132.	541.	-624.9	17229.
6.	3377.3	6331.	1270.	-1214.	21868.
7.	3693.8	6660.	1717.	-2000.	28826.
8.	4615.2	6637.	2702.	-2533.	40397.
9.	3810.	6018.	964.	-6187.	48577.
10.	5490.	5711.	-5121.	-6491.	61620.
11.	8890.	5419.	-12028.	-9957.	76277.
12.	18100.	4460.	4506.	-18586.	119556.

R; T=11.52 15:40:18

. summarize

varname	Obs	Mean	Std. Dev.	Min	Max
v	12	5144.35002	4455.56413	2333.80005	18100.
y	12	6106.25	1101.37163	4272.	8137.
b	12	-71.1666667	4388.72112	-12028.	4506.
d	12	-4069.175	5553.2338	-18586.	51.5
m2	12	38346.75	33572.4408	9578.	119556.

R; T=5.89 15:41:09

. tabulate v

v	Freq.	Percent	Cum.
2333.80005	1	8.33	8.33
2450.	1	8.33	16.67
2894.69995	1	8.33	25.00
3030.8999	1	8.33	33.33
3046.5	1	8.33	41.67
3377.30005	1	8.33	50.00
3693.80005	1	8.33	58.33
3810.	1	8.33	66.67
4615.2002	1	8.33	75.00
5490.	1	8.33	83.33
8890.	1	8.33	91.67
18100.	1	8.33	100.00
Total	12	100.00	

R; T=12.27 15:41:47

. correlate  
(obs=12)

	v	y	b	d	m2
v	1.0000				
y	-.5659	1.0000			
b	-.0373	0.1480	1.0000		
d	-.9612	0.5730	0.1720	1.0000	
m2	0.9371	-.5478	-.2240	-.9263	1.0000

R; T=3.87 15:44:11

. regress v y b d m2  
(obs=12)

Source	SS	df	MS	Number of obs =	12
Model	205685631.	4	51421407.7	F( 4, 7) =	28.37
Residual	12686938.4	7	1812419.77	Prob > F =	0.0002
Total	218372569.	11	19852051.7	R-square =	0.9419
				Adj R-square =	0.9097
				Root MSE =	1346.3
Variable	Coefficient	Std. Error	t	Prob >  t	Mean
v					5144.35
y	-.1150338	.4562624	-.252	0.808	6106.25
b	.127902	.1002308	1.276	0.243	-71.16667
d	-.9901849	.4811335	-1.829	0.110	-4069.175
m2	-.0175538	.0786937	-.223	0.830	38346.75
_const	2947.384	3067.461	0.961	0.369	1.

R; T=19.86 15:44:56

. generate deltab = 0

R; T=3.16 15:46:17

. spool close

However, under the first finding, the analysis is facing a statistical problem with multiple regression. It is the multicollinearity problem. "This term applies to the situation where there is a high degree of correlation between two (or more) independent variables. The result is that the regression model is unable to separate their individual effects, because the two independent variables behave in such similar fashion. This causes the individual regression coefficients (and inferences from them) to be relatively meaningless. A useful solution is to delete one (or all but one) of the related variable."<sup>28</sup>

Under the first analysis, it is noticed that there is a high degree of correlation between  $m_2$ , the money supply, and  $d$ , the budget deficit, these two independent variables behave in a similar fashion. Whenever the budget deficit increases, money supply increases. In order to eliminate the statistical problem, the new multivariate equation is run with three variables by deleting  $d$ , the budget deficit. Thus,  $v$  becomes:

$$v = f(y, b, m_2).$$

This new multivariate regression equation is solved by the computer and has the following form:

$$v = 2426.82 - .330y + .186b + .123m_2$$

t values	(-.66)	(1.72)	(7.424)
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<sup>28</sup> Donald R. Plane, and Edward B. Opperman, Statistics for Management Decisions (Dallas: Business Publications, Inc. 1977); p. 295.

$$R^2 = .9141$$

$$\text{Adjusted } R^2 = .8819$$

$$F \text{ statistic} = 28.39$$

$$\text{Degree of Freedom} = 8$$

The  $R^2$  and the adjusted  $R^2$  provide the new equation with a very good predictive power, the 88% percent change in the exchange rate or value of the local currency is explained by the change in the respective three independent variables,  $y$ ,  $b$ , and  $m_2$ . The respective  $t$  values for each regression coefficient would lead to reject the null hypothesis, since the calculated  $t$  values are greater than the tabulated  $t$  values found in any statistical book. Therefore, the analysis should accept the regression coefficients as being statistically significant.

The  $F$  statistic of 28.39 exceeds the critical value of 3.01 at the 90% confidence interval. Thus, the correlation is highly significant between the dependent variable and the independent ones.

After deleting the  $d$ , the budget deficit, the problem of multicollinearity disappeared and the degree of correlation between the independent variables became acceptable.

TABLE -19-

$$v = f(y, b, m_2)$$

R; T=2.38 16:20:20

. list

	v	y	b	m2
1.	2333.8	8137.	1493.	9578.
2.	2450.	7471.	350.	10653.
3.	2894.7	4272.	508.	11207.
4.	3046.5	6027.	2244.	14373.
5.	3030.9	6132.	541.	17229.
6.	3377.3	6331.	1270.	21869.
7.	3693.8	6660.	1717.	28826.
8.	4615.2	6637.	2702.	40397.
9.	3810.	6018.	964.	48577.
10.	5490.	5711.	-5121.	61620.
11.	8890.	5419.	-12028.	76277.
12.	18100.	4460.	4506.	119556.

R; T=8.52 16:20:30

. summarize

varname1	Obs	Mean	Std. Dev.	Min	Max
v1	12	5144.35002	4455.56413	2333.80005	18100.
y1	12	6106.25	1101.37163	4272.	8137.
b1	12	-71.1666667	4389.72112	-12028.	4506.
m21	12	30346.75	33572.4408	9578.	119556.

R; T=3.93 16:20:40

. correlate

(obs=12)

	v	y	b	m2
v1	1.0000			
y1	-.5659	1.0000		
b1	-.0373	0.1480	1.0000	
m21	0.9371	-.5478	-.2240	1.0000

R; T=2.39 16:20:48

```
. regress v y b m2
(obs=12)
```

Source	SS	df	MS	Number of obs = 12	
Model	199620000.	3	66540002.5	F( 3, 8) =	28.39
Residual	18752561.6	8	2344070.20	Prob > F =	0.0001
				R-square =	0.9141
				Adj R-square =	0.8819
				Root MSE =	1531.0
Total	218372569.	11	19852051.7		

Variable	Coefficient	Std. Error	t	Prob >  t	Mean
v					5144.35
y	-.3307634	.5012543	-0.660	0.523	6186.25
b	.1866500	.1079783	1.729	0.122	-71.16667
m	.1238837	.0166868	7.424	0.000	38346.75
_const	2426.821	3473.428	0.699	0.505	1.

```
R; T=18.82 16:21:30
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```
. spool close
```

Since the 88% change in the exchange rate or value of the Lebanese pound can be explained by the change in the respective three independent variables,  $y$ ,  $b$  and  $m_2$ , the remaining 12% change in the exchange rate or value of the local currency can be explained by outside factors representing the dummy variable. These factors can be related to rumors prevailing in the market, psychological factors, very tense political and military situations, financial and political declarations, the conflict between the Lebanese Banks association and Banque du Liban, and the conflict between the Ministry of Finance and Banque du Liban etc...



### Chapter III

#### CONCLUSIONS, RECOMMENDATIONS AND SUMMARY.

##### A- Conclusions

The serious economic dislocation has recured in terms of impairment into the productive capacity of the Lebanese economy; the abrupt and substantial decline in productivity have been caused to the Gross Domestic Product (GDP), in real terms, followed by deterioration in the balance of payments, huge budget deficit , and inadequate growth in the money supply.

The decline in the Gross Domestic Product is explained by the damages which hurt the various sectors in Lebanon. These sectors have faced serious problems related to the emigration of the skilled manpower, weak marketing techniques, competition, rise in the labor costs, state of security, political instability, shrinkage in capital investements, difficulties of access to traditional markets, ample destructions, exodus of servicing firms and agencies, disrupted means of transport etc...

The deterioration in the balance of payments which has been affected mainly by increase in the capital outflows, shrinkage in capital inflows, and the increased commercial deficit.

The huge budget deficit were incurred by the increase in public expenditures, the decrease in the revenues generated by the state, governments' subsidies, mainly the petroleum products, the interruption of the Arab aid, and the huge allocations of resources on armament.

The inadequate growth in the money supply were caused by accumulation of interests on rolled-over credits, slowdown of the economic activity in the country, and the increased borrowing of the public sector.

B- Recommendations:

The actions that are recommended to be taken in order to rectify the situation and impose a relative stable exchange rate for the local currency, are the following:

- 1- To impose high taxes on non-commercial transfer funds to foreign countries. Why? Because such duty will discourage and make speculative transfers unattractive.
- 2- To impose fees and charges on the foreign exchange transactions: the government can implement such recommendation on those who hold a long position in foreign currencies. But, here one should differentiate between the individuals who demand foreign currencies to import goods, and those who demand foreign

currencies for speculation purposes.

For the former case, the government will exempt the importers from such fees and charges. For the latter case, the government would relatively limit the speculation by applying the fees and charges to relative transactions.

- 3- The Central Bank (Banque du Liban) should intervene more often in exchange market to support the local currency. This intervention should be exercised in favour of local currency instead of US dollar or other foreign currencies. In fact, the Central Bank interferences more often to buy US dollar at low prices to meet government needs rather than to support local currency. Besides, the Central Bank is understood to intervene to protect speculators from expected losses rather than to prevent disturbances in the exchange market. Therefore, it is suggested that the intervention of the Central Bank should be restricted only to enhance the value of the local currency and not otherwise. Such strategy would harm the speculators and would leave them reluctant for any speculation.

- 4- Temporary closure of the foreign exchange market should be resorted to during severe perturbations, and harmful political events. It is recommended that the Central bank should prohibit dealing during those short crises when speculators invent events to benefit from such opportunities.
- 5- Decrease in public expenditures: this can be reached through the suspension of all unnecessary public works and services, unless the project is absolutely necessary. Another recommendation is to suspend any further recruitment in all public and governmental agencies. Instead, under employed bureaucrats should be deployed in vacant places to be productive. Besides, the government should cut down wages and salaries on those who do not attend during abnormal conditions. In addition, the government should eliminate the compensation plan under these circumstances. Moreover, the government should reduce the armament allocations, since they have been responsible for big demand for foreign currencies.
- 6- Increase the revenues generated by the government: this can be achieved by adjusting the prices of the petroleum products to match their effective costs. The Electricité du Liban (EDL) and Electricité de Kadisha may be required to settle their obligations amounting to more than 2 billion Lebanese pounds

by the beginning of 1987. To improve the tax receipts, increase taxes on luxurious items may be sought. Collection of past due taxes (income, real estate, transport ...), which are equivalent to 2 billion Lebanese pounds should be accelerated. To provide incentives for collection of taxes, the penalties on late settlements should be reduced. The government should seek ways to improve the custom receipts and if possible increase them.

- 7- The Arab countries should be approached to settle their aid obligations to Lebanon which they promised at the Tunis Summit in 1979.
- 8- The Central Bank should control the money supply and stabilize its growth relative to the aggregate output of the economy. It is the duty of the Central Bank to monitor the volume of the money supply. For example, the Central Bank can resort to apply new monetary tools such as: increase the reserve requirements; increase the level of interest rates, and limit the volume of loanable funds for the purposes of controlling money supply. As a result, this would reduce the absorption of excess liquidity restricting therefore the ability of speculation to use the resources for speculative purposes. The effect of increasing the level of interest rates would increase the demand of the

Lebanese pound. Thus, both operations would have a positive impact on the exchange rate from the point of view of supply and demand of the local currency. A restrictive monetary policy which is supported by the Central Bank does not harm the productive sectors and the banking sector, because any fight to contain inflation is for the benefit of the both sectors.

- 9- Finally, it is due to the prevailing state of insecurity which has reduced the influx of capitals and investments to Lebanon, particularly from the Lebanese work force abroad. Upon normalization of the countrys' conditions, such matter would be reversed.

C- Summary:

It should be stressed that both the government and the Central Bank should impose reforms on their existing systems and policies to match with the present situation of the country in order to prevent any further depreciation of the local currency.

The government should improve its taxation system and procedures so that it would be able to generate more revenues. Taxes such as:

- 1- Taxes on saving deposits in foreign currencies.
- 2- Fees and charges on speculative foreign exchange transactions.
- 3- Taxes from importers once a letter of credit is settled.

Besides, the government should look forward for better allocation of expenditures by implementing the following:

- 1- Cutting down spending on non necessary public works and services.
- 2- Reducing the armament bill and transferring its allocations into more productive sectors.
- 3- Desubsidising the petroleum products.

The Central Bank should develop an effective monetary policy that favours the local currency. Thus, it should interfere to back-up the value of the Lebanese pound. It should increase the legal reserves on the deposits held by the commercial banks, increase the level of interest rates, and decrease the ceiling of loanable funds to the private sector.

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