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PROFIT-LOSS SHARING BANKING SYSTEM -

CASE STUDY OF JORDAN

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Abstract

PROFIT-LOSS SHARING BANKING SYSTEM:

CASE STUDY OF JORDAN

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Advisor: Alex Mourmouras

Today we are witnessing the third decade of the establishment of the Islamic Banking System. The central feature of the Islamic banking system is the elimination of interest in conducting financial transactions. The main objective of this paper is to show how to design an optimal Mudarabah contract, taking into account two kinds of Zakah (Tax): 1) Zakah on holding cash (uninvested capital), and 2) Zakah on net return of the investment. In our analysis emphasis is also given on the technical skills (efficiency) the borrower has. Since the model represents partial equilibrium, we emphasize the relationship between the lender (bank) and the borrower, while the depositor is excluded. The elimination of the interest from financial transactions will increase the degree of risk facing the banks. Also, the bank is conservative in lending the money to borrowers for two reasons: first, because the bank is not sure what level of effort will the borrower invest in the project (moral hazard problem), and second, even though the technical skills and qualification of the borrower are known to the bank, his ethics are unknown (the adverse selection problem).

The problem of the social planner is to formulate profit-loss sharing contract that maximizes the social welfare of the society subject to participation and incentive compatibility constraints.

The outcomes of this study indicate that the social welfare is higher under the Mudarabah than Riba contract. The results also show no indication that investment under Mudarabah contract is lower than Riba contract.

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

In modern economies significance of banks and other financial institutions result from the special role that they play in an economy. Some of the functions that they perform are: writing contractual agreements between a large number of borrowers and lenders in a more efficient way than if they wrote these agreements themselves; banks economize and minimize the cost of monitoring borrowers in an environment where specific information about borrowers is not available to the lenders; these institutions "borrow from and lend to large number of economic agents, they process information about investment outcomes, they issue liabilities with characteristics different from their assets and they write debt contracts."[1] These institutions also play role in providing credit, creating money, increasing and decreasing money supply. This manipulation of money supply leads to changes in prices of goods and services and the level of employment and income.

Because of the economics of uncertainty where hidden information and actions are involved, these financial

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[1]Williamson, Stephen D. "Recent Developments in Modeling Financial Intermediation." Quarterly Review. Federal Reserve Bank of Minneapolis, Summer 1987, p.19.

institutions act as monitory agents to eliminate the problems of moral hazard and adverse selection. Sometimes they may ration credit and provide insurance against uncertain demand for liquidity.

The assets of these banks are loans while their liabilities are deposits. They pay predetermined rates of interest on the deposits and also receive predetermined rates of interest on loans. These fixed rates of interests are independent of the project outcomes.

The banks and other financial institutions that we are going to deal with in our present study are part of the Profit-loss Sharing System within the Islamic Economic System. In this system the banks are not allowed to accept deposits or lend money at predetermined interest rates. Banks will receive or distribute variable returns which will depend on investment outcomes. Primarily, the borrowing or lending from these banks take place in three ways:

First is the Trust or *Mudarabah* Contract. In this kind of contract the bank provides the total financing of the project while the labor and management is provided by the borrower. If the project succeeds, the bank receives its capital plus a predetermined profit sharing percentage and the borrower receives the residual of the profit. If the project fails, the bank has to bear the total loss and the borrower loses his/her effort and time spent. However, if the borrower is found to be guilty of negligence in managing the project

and thus causing the loss then he will be responsible.

Second kind of contract that can take place in a profit-loss sharing set-up is the equity financing or *Musharakah*. In this situation both partners of the project share capital (in any ratio). Either of the partner can manage the project for a salary, or they may hire a third person as a manager for a salary, or write a Mudarabah contract between them and the manager. Profit or loss for the partners is according to their share of initial invested capital.

The third type of contract that is usually employed in profit-loss sharing system is Cost Plus Trade Financing or *Murabahah*. This contract is written when a potential borrower need money for some personal use. The bank buys what the borrower needs and then resell it to the borrower with a mark-up on the cost of that merchandise.

1.2 Organization of the Study

The scope of this study is limited. It does not, and cannot, go into all aspects of interest-free economic system. It tries to answer mainly those questions and analyzes those issues which are related to profit-loss sharing banking system. The Jordanian interest-free banking system has been used as an analytical example.

Chapter Two shows some of the important feature of the Jordanian economy. Jordan is a small developing country in the Middle East whose economy depends heavily on foreign aid

and the Jordanian workers abroad. The main exports are phosphates, potash and fertilizers.

Chapter Three presents the financial structure of Jordan. It stars with the Central Bank, its main objective and functions, and its relation with the commercial banks as well as to the other financial institutions. Commercial banks, both foreign and national, must be licensed by the Central Bank before they can operate.

The other financial institutions are specialized credit institutions (public and joint ownership) and non-banking financial institutions, which contains financial intermediaries and contractual credit and saving companies.

Chapter Four emphasizes on the development and the objectives of the profit-loss sharing banking system. One main objective is to promote economic integration amongst Middle East countries. The chapter also explains different kinds of financial contracts with particular attention and concentration on trust contract, equity contract and cost plus trade financing contract. Also, we show that interest is eliminated from the economic system mainly to obtain social justice and moral obligation.

Chapter Five is the most important part of this study. The objective here is to design a profit sharing contract adopted in interest-free financial markets and to investigate the efficiency of the trust contract in the principal-agent model. The chapter also deals with the types of informational

imperfections of Moral Hazard and Adverse Selection. Moral hazard arises because the total return depends on effort and random shock, while adverse selection arises because the investor does not know the ethics of the borrower. The last part of this chapter compares the optimal profit-loss sharing contract with optimal debt contract with investment and welfare implications.

Chapter Six evaluates the overall performance of Jordanian interest-free banks in its second decade and discusses problems relating to their viability and, where possible, offers suggestions in form of policy measures that could contribute to the viability of interest-free banks. Also, we emphasize on the role of the Jordanian profit-loss banking system with the economic development of the country.

CHAPTER TWO

Overview of the Jordanian Economy

2.1 Introduction

Jordan is a small developing Arab country occupying a central position in the Middle East. It has common borders with Syria, Iraq, Saudi Arabia, West Bank, the Dead Sea, and the Red Sea.

The population of Jordan is 3,882,000 and it is classified as middle income economy with per capita income of $1,540 in 1987 and $1,130 in 1990 where the Jordanian dinar equals 2.98 US dollar in 1987 while in 1990 it was equal to 1.51 US dollar[1].

Jordan is not an oil producing country and is dependent on oil imported from the Gulf Arab countries, particularly from Saudi Arabia.

In the Middle East, Jordan is the only Arab country which has common border with the West Bank (under Israeli occupation. Before 1948, Jordan and Palestine were treated as one country. In 1948, northern part of Palestine was occupied by the Jews. The unoccupied part is now called the West Bank, since it is to the west of River whereas Jordan is to the east of the river. West Bank was also occupied by Israel in 1967. From 1949-67, West Bank was governed and controlled by the

authority in Jordan.

Jordan and Palestine has had a unique relationship through the history and they depend on each other very much. Even though West Bank was has been under Israeli occupation since 1967, the relationship between the East and the West Banks is still very strong. All the rules and the laws at the national level in West Bank follow Jordan. This can be seen in the education system, commerce, industries, and social services. Everybody in West Bank holds Jordanian citizenship. All the foreign aid to West Bank comes through Jordan. Any export from West Bank takes place through Jordan. The people of West Bank cannot visit other Arab countries without passing through Jordan. Because of the 1948 and 1967 wars, most of the people moved from West Bank to Jordan and now between 70-75% of the population in Jordan are either Palestinian or from the West Bank.

From the above it can be seen that the Jordan holds a very critical position in the Middle East. It is even more enhanced with respect to the Arab-Israel conflict. This has created too much instability in the country. In the following paragraphs we will analyze some of the economic impacts of this situation.

The people of West Bank hold the Jordanian currency (Dinar). This is the main currency used for trade, purchase, etc. From 1967 to 1985, no banking system existed in the West Bank. However, since 1986 some of the Jordanian banks have

opened their branches in the area. Naturally these banks Jordanian rules and regulations.

Jordan depends heavily on the external world. This dependency is in two forms. First, foreign aid and loans, and second, remittances from Jordanian working outside the country, such as Saudi Arabia, United Arab Emirates, Kuwait, etc.

The period of 1975-82 was the best period for the Jordanian economy. The number of workers working abroad increased a great deal, foreign aid and grants rose and Jordan's exports also went up. The economy grew over 12 percent over the period. It was operating at full employment, inflation was low, balance of payments was favorable. The government was able to finance many investment projects and establish good services for the people. All in all, the standard of living in the country improved.

The period after 1982 saw some decline. The main cause was the price of oil which fell after 1982. Since most of the Middle East countries depend only on oil, decrease in oil price affected their economy which in turn affected Jordan. Jordan was mainly affected in three ways.[2] The number of Jordanian workers in these countries was reduced as these countries cut back on many of the projects. Not only that the remittances were affected, this also caused unemployment to rise as these workers started coming back to Jordan. The Arab aid and grants to Jordan also went down by about 40%. As the

oil producing countries cut back, their imports of goods and services from Jordan also fell down.

The above mentioned three factor tied the hands of the government in Jordan in terms of financing its activities and have strong balance of payment. After 1985, balance of payments showed extremely high current account deficit. Unemployment in Jordan rose up to 10%. Investment decreased by about 14% and the output growth declined to less than 1%.[3] The government was aware of the situation. From 1985 to date, the government established new incentive plans to encourage the workers abroad and other nationalities to invest in Jordan and create more jobs and reduce unemployment. It plays an important role when we consider the fact that most wealthy businessmen and workers deposited their wealth in the Western banks. Even the wealthy people inside Jordan invested their wealth in Western banks. This outflow of capital was playing its role in slowing down the economic development and growth for the country. People who deposited and invested in the Western banks were thinking that they wealth would be more secured in Western countries because of the economic and political instability.

The outflow of capital forced the Jordanian government to tighten its policies regarding imports and foreign exchange rate. Before these tight policies, people were allowed to send any amount outside the country. After 1988, however, for example, a Jordanian student in the United States could

receive a maximum of US $10,000 in a year. The aim was to reduce the number of students going abroad. The government also devalued the currency which made it very expensive to import foreign goods.

Because of the prevailing conditions, the policy makers were forced to adopt five year plans to achieve two important goals: to maintain a high balance of payments and decrease the unemployment. The aim was to increase investment to achieve the two goals in the middle of 1990s.[4] This was the main objective of the 1990-95 plan which was started after the Iran-Iraq war stopped. The negative effects of the war still existed in Jordan even after the war ended. The 1990-95 plan was adopted to absorb these negative effects. However, a major set back was suffered by the Jordanian economy when the Gulf war began. It became impossible to achieve goals set in the 1990-95 plan. As we mentioned before, because of the decline in oil prices the Arab aid and grants to Jordan were reduced 40%. During the Gulf war, because of Jordan's stand in favor of Iraq, left Jordan with no aid and grants from the rich Arab countries. These countries also reduced the number of Jordanian workers. The unemployment problem became even bigger when these workers returned. Unemployment became the main problem faced by the policy makers.

Before the Gulf war, there were more than 400,000 Jordanians employed abroad. These workers were making significant contribution to the Gross National Product (GNP).

From 1975-85, the country saw its highest rate of economic growth. The Gross Domestic Product (GDP) was increasing at an average of more than 10% in real terms.

TABLE 2.1

Year	Gross National Product (GNP) (Millions JD)	Per Capita GNP (JD)	Gross Domestic Product (GDP) (Millions JD)	Per Capita GDP (JD)
1984	1881.2	-	1824.0	-
1985	1893.3	-	1898.1	-
1986	2022.2	723.2	2072.3	741.0
1987	2038.3	703.5	2143.9	740.0
1988	2112.8	704.0	2169.7	723.0
1989	2348.4	754.8	2046.7	657.9
1990	2257.3	653.72	1931.1	559.3

Source: Central Bank of Jordan Annual Report, 1990, Amman, Jordan

From Table 2.1 we can see that GNP increased up to 1989, and then in 1990 it decreased. The per capita GNP, however, had been decreasing since 1986. From 1986 to 1990, the per capita GNP decreased by 9.6%. GDP followed the same pattern, decreasing since 1989. Per capita GDP decreasing since 1984 and was down by 24.56% in 1990. The decline in 1991 and 1992 was higher as a large number of workers came back to Jordan.

The inflation rate fell from 12% in 1981 to 7.4% in 1982, 5.5% in 1985 and zero percent in 1986 and 1987. It increased

to 6.6% in 1988, 25.7% in 1988 and 16.2% in 1990.[5] The absence of inflation in 1986 and 1987 is mainly because of sharp fall in import inputs and commodities prices which was estimated to be about 5.8% per annum.[6]

The rise in General Price Index showed a reduction in 1990 compared to 1989. It rose from 133.8 in 1989 to 155.4 1990 representing an increase of 16.1% against an increase of 25.8% from 1988 to 1989. This was the result of the monetary policies adopted by the Central Bank of Jordan which compressed the growth of liquidity maintain stability of the Jordanian Dinar against foreign currencies (exchange rate). The government also adopted specific fiscal policies which led to decline in government's budget deficit during 1990.

TABLE 2.2

Cost of Living Index (1986=100)

	Relative Weight	Index				
Year		1986	1987	1988	1989	1990
Food	38.5	100	98.5	103.9	125.5	151.2
Housing	28.1	100	96.7	103.6	117.6	130.9
Clothing	7.4	100	103.8	108.1	177.4	231.8
Soft Drink & Tobacco	2.7	100	108.7	110.3	140.2	155.9
Other goods & Services	23.3	100	104.5	113.9	153.8	167.9
Gen. Index	100	100	99.8	106.4	133.8	155.4

Source: Central Bank of Jordan Annual Report, 1990.

From Table 2.2 we can see that price of food increased 51% from 1986 to 1990, housing increased by 30%, soft drink and tobacco increased by 55.9% and clothing increased by 131% in the same period. The Table also shows an increase in inflation. The continuing decrease in the aid and grants from the Arab countries, decrease in remittances from Jordanians working abroad mixed with a fall in the prices of potash and phosphorus (main exports of Jordan) contributed to a deficit of JD 42.4 million balance of payments in 1987. This deficit rose to 72.7 in 1988.

2.2 Public Finance

A) Public Revenues Public revenues have increased from 1986 to 1990. Their growth rate, however, fell in 1990. Their increase was highest in 1989 (18.6%), while the growth rate fell to 9.7% in 1990.

TABLE 2.3

Year	Public Revenues (Millions JD)	Growth Rate %	Proportion to GDP %
1986	670.9	3.7	32.9
1987	676.8	0.9	32.4
1988	721.3	6.6	32.8
1989	855.5	18.6	33.7
1990	938.7	9.7	36.6

Source: Central Bank of Jordan Annual Report, 1990.

B) Domestic Revenues The total domestic revenues in 1990 were JD 746.1 million while they were JD 565.4 million in 1989. The growth rate was 32% in 1990 and only 3.9% in 1989.

TABLE 2.4

Year	Domestic Revenues (Million JD)	Growth Rate %	Proportion to Current Expenditure %	Proportion to GDP %
1986	514.4	16.7	90.2	25.2
1987	531.5	3.3	88.2	25.4
1988	544.4	2.4	81.3	24.7
1989	565.4	3.9	75.4	22.3
1990	746.1	32.0	88.3	29.1

Source: Central Bank of Jordan Annual Report, 1990.

From the above table we can see that the growth rate in domestic revenues from 1987-89 was very slow while it rose to 32% in 1990 compared to 3.9% in 1989. The proportion of domestic revenues to current expenditures rose from 75.4% in 1989 to 88.3% in 1990 and to GDP it increased from 22.3% to 29.1% for the same period. The increase in domestic revenues has been because of the increase in both tax and non-tax revenues which are shown in the table below.

TABLE 2.5

Year	Tax Revenues (Millions JD)	Growth Rate %	Non-Tax Revenues (Millions JD)	Growth Rate %
1986	237.9	-3.5	276.5	42.4
1987	242.3	1.8	289.2	4.6
1988	255.9	5.6	288.5	-0.2
1989	273.9	7.0	291.5	1.0
1990	388.5	41.8	357.6	22.7

Source: Central Bank of Jordan Annual Report, 1990.

The increase in domestic revenues was because of the increase in tax and non-tax revenues from 1989 to 1990. From the above table we can see that growth rate of tax revenues was 41.8% in 1990 while the growth rate for the non-tax revenues was 22.7 in the same year. It is important to note that the tax revenues composed of 52% of the net domestic revenues in 1990, 48.3% in 1989, 46.8% in 1988, 45.5% in 1987, and 46.2% in 1986. Within tax revenues, income and profit taxes realized a considerable increase of 120.4%. This reflects a rise in the profits of shareholding companies, particularly the exporters. This was prompted by the devaluation of the Jordanian Dinar in 1989.

If we examine the relative contribution of tax revenues, it will be noted that tariffs and income and profit taxes contributed the major part of these revenues, which is 31% and 30%, respectively. Consumption tax ranked third with a

contribution of 25% in the tax revenues.

Tariffs play a very important role in Jordanian economy because it is highly import intensive. The government tries to protect the domestic industries by tariffs on import commodities and by putting quota restrictions. The main objective of the government is to expand the Jordanian manufacturing industry and to protect it from foreign competition. This is done by regulation of the market entry through investment licensing, by increasing the fees for these licenses. Tariffs are high on output (final goods) while they are low inputs (intermediate goods). The growth of tariff revenues and their proportion to commodity imports receded to 6.9% in 1990 against 8.5% in 1989. This is mainly attributed to the growth of imports which surpassed the growth of total tariff levies coupled with the increase in imports which was concentrated in food stuffs and other commodities subject to low tariff rates. Table 2.6 below shows tariff rates by sectors.

TABLE 2.6

Average Tariff Rates By Sectors

Agriculture	10.3	Fertilizer mineral mining	6.0
Other mining, crude oil	28.6	Grain mill products	27.0
Bakery products	59.5	Confectionery	59.1
Other food products	10.5	Prepared animal feed	7.2
Beverages	87.5	Tobacco	78.1
Textile manufacture	41.3	Wearing apparel	49.5
Leather and footwear	30.7	Wood, cork and furniture	38.9
Paper and paper products	24.8	Printing and publishing	11.6
Industry and other chemicals	16.3	Petroleum refinery	59.3
Rubber and plastic	33.8	Ceramic and glass	37.7
Cement, lime and plaster	10.2	Other non-metallic mineral products	33.5
Basic metal industries	17.5	Fabricated metal products	34.0
Machinery (non-electrical)	14.5	Electric and transport equipment	30.8
Miscellaneous manufacturing	40.7		

Source: World Bank Report No. 7399-JO, September 1988.

C) **Internal and External Public Debt** As we have indicated earlier, Jordan economy depends heavily on Arab aid and the income from the Jordanians working abroad. The decline in oil prices and the recent Gulf war affected both of

these sources of funds for the government. The government was forced to obtain funds from its citizens (internal debt) and from foreign countries (external debt).

TABLE 2.7

Year	Internal Debt		External Debt	
	Outstanding Balance (Mill. JD)	Proportion to GDP %	Outstanding Balance (Mill. JD)	Proportion to GDP %
1988	921.8	47.6	3836.9	175.2
1989	995.0	7.9	5409.4	212.9
1990	1037.4	4.3	6052.5	235.7

Source: Central Bank of Jordan Annual Report, 1990.

Following is description of some of the external loans in 1990:

1) German government loans:

- Structural adjustment loans from German Reconstruction Bank to finance imports, US $36.5 million.

- A loan for developing Water Authority project, US $6.2 million.

- Loan for Industrial Development Bank's resources, US $11.9 million

- A US $4.3 million for financing imports of German origin within the technical and capital assistance program for Jordan.

2) Japanese government loans:

- Emergency loan from Japanese International Agency for US $111.7 million for mitigation of the Gulf crisis on Jordan.

- Adjustment loan to finance import, US $81.2 million.

- A loan for development of education sector, US $68.7 million.

3) People Republic of China loan amounted to US $10.7 million for budget support.

4) Loan of the Arab Fund for social and economic development, US $27.4 million.

5) World Bank loans:

- A loan for sectoral adjustment of trade and commerce, US $150 million.

- Loan for financing the Sheydrah phosphates mines project, US $25 million.

6) Kuwaiti Development Fund loan for financing projects of Jordan Industrial Development Bank, US $17.1 million.

&) A loan of the European investment Bank for supporting projects of Industrial Development Bank, US $17.4 million.

2.3 Labor Market

Before the Gulf crisis, the unemployment rate was 10%. In 1990 and 1991, however, the unemployment rate became a very serious problem for the country. The labor market in jordan follows an open immigration policy.[7] In Jordan labor market is different from that of other Arab countries. This is because of a high demand for education. There are eight

universities, twenty two year colleges and four to six technical colleges. All these educational institutions play an important role to educate and to provide the skills to most of the citizens of Jordan. They provide education and training for all kinds and types. Jordan has a highest number of students continuing their education in United States among all the Arab countries.

Since Jordan follows an open immigration policy, the policy makers in Jordan found that it is very important and more rational to have many Jordanian workers in the Gulf countries and Saudi Arabia where they can get much higher salaries. These higher salaries result in higher remittances to Jordan. These workers have been replaced within the country by workers from other countries, such as Egypt, Pakistan, India, China, Bangladesh, Korea, and Philippines.

TABLE 2.8

Millions of JD

Year	1986	1987	1988	1989	1990
Remittances from Jordanians working abroad	414.5	317.7	335.7	358.3	406.3
Income from directly productive sector	518.8	560.0	613.5	796.9	881.7
Income from Services sector	1182.5	1201.3	1264.7	1441.1	1368.7

Source: Central Bank of Jordan Annual Report, 1990, Amman, Jordan

An important contribution by Jordanian workers abroad was that they financed 70 percent of trade deficit in 1986, 53.2 percent in 1987, 61.2 percent in 1989, and 40.3 percent in 1990. However, this financing of the trade deficit has declined because of a decline in number of Jordanians working outside the country.

TABLE 2.9

Remittances of Jordanians Working Abroad (%)

	1986	1987	1988	1989	1990
Growth Rate	2.9	-23.4	5.7	6.7	13.4
Proportion to trade deficit	70.0	53.2	52.6	61.2	40.3

Source: Central Bank of Jordan Annual Report, 1990, Amman, Jordan

The mix of skilled and unskilled workers differ from one sector to another, and it depends on the nature of jobs, its level of difficulty and challenge. The following table represents a mix of skilled and unskilled labor by sector.

TABLE 2.10

Skill Mix By Sectors

Sector	Skilled	Unskilled
Agriculture	46.6	53.4
Industry	54.9	45.1
Water & Electricity	71.8	28.2
Construction	13.4	86.6
Trade	62.9	37.1
Transport & Communication	1.4	98.6
Financial Service & Insurance	94.0	6.0
Social Services	62.4	37.6

Source: World Bank, Report No. 7399-JO, 1988.

It can be seen from Table 2.10 that financial service and insurance sector has 94% skilled workers as the nature of the job is such that it requires education as well as training. In transportation and communication, on the other hand, only 1.4% workers are skilled and a staggering 98.6% workers are unskilled.

2.4 External Trade

Jordan is a small country with limited natural resources and its economy depends heavily on imported goods and inputs.

TABLE 2.11

Export-Import Schedule (Million JD)

Year	1986	1987	1988	1989	1990
Commodity Export	225.6	248.8	324.8	534.1	612.3
Import	850.2	915.5	1002.5	1230.0	1725.8
Net Import	624.6	666.7	697.7	695.9	1113.5

Source: Central Bank of Jordan Annual Report, 1990, Amman, Jordan

From Table 2.11 we can see that foreign trade activity in 1990 was JD 2338.1 million in comparison with JD 1764.1 million in 1989. This indicates a growth rate of 32.5%. The Table also shows that exports are less than half of imports. The rise in the value of imports was because of the Gulf crisis, increase in the number of returnees from Gulf because of the crisis and an increase in the demand for import of foods and other goods and services.

In 1990, 50% of the Jordanian exports came from the natural resources of three elements: potash (14.5%), fertilizers (13%) and phosphates (22.7%). Jordan is the fifth largest producer of phosphate in the world and third largest exporter after Morocco and United States.

TABLE 2.12

Domestic Export by Commodity by 1990		Import by Commodity 1990	
Chemical	17.9%	Crude oil	13.7%
Phosphates	22.7%	Chemical	11.0%
Food	9.8%	Machinery	19.0%
Fertilizers	13.0%	Food	23.4%
Potash	14.5%	Misc. Manufacturing	23.5%
Others	22.1%	Others	9.4%
Total	100.0%	Total	100.0%

Source: Central Bank of Jordan Annual Report, 1990

Table 2.12 shows that imported is 23.4% while exported food is only 9.8%. The exported food is mainly consisted of fruits and vegetables while the imported food includes meat, rice and wheat.

TABLE 2.13

Geographic Distribution of Export (1990)		Geographic Distribution of Import (1990)	
Arab Common Market	24.0	Arab Common Market	17.7
Other Arab Countries	18.3	Other Arab Countries	7.6
European Economic Community	3.6	European Economic Community	28.4
Socialist Countries	6.9	Socialist Countries	6.6
India	21.1	Japan	3.1
		United States	17.4
Other Countries	26.1	Other Countries	19.2
TOTAL	100	TOTAL	100

Source: Central Bank of Jordan Annual Report, 1990.

The geographic distribution of Jordan's External Trade in 1990 showed that 42% of the Jordanian exports went to Arab countries. India had biggest share of exports, that is 21.1%, followed by Iraq with a share of 19.4% in the same year. Table 2.13 also shows that European Common Market countries ranked first in 1990 with 28.4% of imports, while United States ranked third with a share of 17.4%.

Finally, Table 2.14 shows the relative shares of different sectors to the Gross Domestic Product.

TABLE 2.14

Sectorial Relative Shares to GDP (%)

Year	1988	1989	1990
Financing service	17.0	18.2	19.8
Government service	21.1	20.7	22.2
Agriculture	7.7	6.8	7.7
Trade	12.8	13.0	11.5
Transportation	13.5	12.6	8.3
Industry & mining	15.0	16.3	16.9
Construction	7.5	7.4	8.1
Other	5.4	5.0	5.5
Total	100.0	100.0	100.0

Source: Central Bank of Jordan Annual Report, 1990.

It is clear from the above table all the sectorial shares are

very significant and all the sectors play their respective roles toward GDP. We also note that the relative shares of different sectors are relatively constant. Government plays a major role in the economic development of the country. Its share toward GDP is 22.2% in 1990.

Endnotes

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CHAPTER THREE

The Financial Structure of Jordan

3.1 Introduction

During the last three decades Jordan has developed rapidly in various economic and social fields. The development of the financial sector, however, has been perhaps the fastest, most conspicuous and most interesting aspect of the general economic development of Jordan. Before 1964, the Jordan Currency Board was the monetary authority in the country, but its role was confined to maintaining sterling deposits against the issue of Jordan Dinars. Thus it had no control over the money supply nor did it exercise any bank supervision functions. During that time, the banking system consisted of only seven commercial banks, three of which were foreign, and there was one specialized credit institution. In contrast, Jordan now has a strong and seasoned central bank which directs the monetary policy of the country and undertakes all the responsibilities that central banks in developed countries ordinarily charged with. By the end of 1990 the Jordanian banking system consisted of twenty-one commercial banks, six specialized credit institutions, five non-bank financial institutions, a postal savings fund, and seventy-two money chargers with four representative offices. The Jordanian private sector owns fourteen of the commercial

banks and four are Arab-owned while the other three are foreign owned.

TABLE 3.1

Jordan Banking System

(1964) Central Bank of Jordan

(A) Commercial Banks

National Banks		Foreign Banks	
1930	Arab Bank Limited	1949	The British Bank of the Middle East
1989	Arab Banking Corporation	1951	Arab Land Bank
1956	Jordan National Bank	1957	Rafidain Bank
1960	Bank of Jordan	1969	Grindlays Bank
1960	Cairo-Amman Bank	1972	Bank Al-Mashrek
1977	Jordan-Kuwait Bank	1974	Citi Bank
1978	Jordan and Gulf Bank	1975	Bank of Credit and Commerce International
1990	Business Bank		
1989	Jordan Investment and Finance Bank		
1978	Arab Jordan Investment Bank		
1990	National Islamic Bank		
1979	Jordan Islamic Bank		
1980	Syrian-Jordan Bank		
1990	Amman Bank for Investment		

(B) Specialized Credit Institution

Public Ownership		Joint Ownership	
1959	Agricultural Credit Corporation	1965	Industrial Develop Bank
1965	Housing Corporation	1968	Jordan Cooperative Organization
1966	Cities and Villages Development Bank	1974	Housing Bank

(C) Non-Banking Financial Institutions

Financial Intermediaries		Contractual Credit and Saving Company	
1979	Arab Finance Corporation	1960	Refco
1981	Jordan Finance House	1982	Darco
		1984	Beit Al-Mal Saving and Investment for Housing Company

(D) Others

1974	Postal Savings Fund		Money changers in Amman
	Representative Offices		Money changers outside Amman

Source: Central Bank of Jordan (1990). Annual Reports.

The commercial banks rendered their services throughout Jordan through a network of 211 branches at the end of 1990. As for the specialized credit institutions, both the private

and public sectors hold a joint ownership of the Housing Bank and the Industrial Development Bank, whereas the public sector alone owns the other four institutions. They rendered their services throughout Jordan through a network of over 128 branches at the end of 1990.

The specialized credit institutions were established to meet the country's financial requirements in the fields of housing, industry, agriculture, and local governments. In addition, five financial companies have been established since 1978, two of which are financial intermediaries, with the remainder being real estate and saving companies. Actually these non-bank financial institutions were established after the establishment of the Amman Financial Market in 1978. These new financial institutions were needed to increase medium and long-term loans and to develop the capital market in Jordan.

There are also 27 insurance companies operating in Jordan, eight of which are foreign-owned. In 1977, a pension fund serving military and civil pensioners was established, aims at investing surplus savings in wide range of economic projects are as well as examining and promoting productive ventures.

At the end of 1990, there were seventy-two money changers and four representative offices working in Jordan. Thirty-four of money changers operated in the Amman region while the remaining thirty-eight served the rest of the country. In

1986, Jordan was hit by the collapse and bankruptcy of seven exchange dealers in the Amman region. In 1986, the second largest exchange dealer went bankrupt with total liabilities of JD 14.6 millions to residents, exchange dealers, foreign banks and remittance in transit. The Central Bank did not intervene in the market and refused to come to the assistance of money dealers. Instead, the Central Bank instructed all licensed exchangers to submit detailed financial statements and to increase their capital. In addition, limits were set on the amount of credit they could obtain from banks. The Postal Savings Fund started its operations in 1974. The Fund accepts savings deposits from residents and invests these deposits in stocks and syndicated loans. The Fund rendered its service throughout Jordan through a network of 290 branches as of 1990.

3.3 Central Bank of Jordan

The Central Bank of Jordan started operations in October 1964 and its represents the monetary authority in the Kingdom and enjoys the status of an autonomous corporate body. The objectives of the Central Bank shall be to maintain monetary stability in Jordan and to ensure the convertibility of the Jordan Dinar and to promote the sustained growth of the economy of the Kingdom in accordance with the general economic policy of the Government.

The functions of the Central Bank have grown since its

establishment and the growth of Central Bank activities is reflected in an increase of its assets between 1964 and 1990. Whereas total assets in 1964 did not exceed JD 25.9 millions (of which JD 25.8 millions were foreign assets), they reached JD 2048.3 millions in 1990 (of which 750.9 were foreign assets). Thus the Central Bank's total assets increased approximately by 78.8 fold between 1964 and 1990.

TABLE 3.2

Total Assets of the Central Bank (JD Million)

Year	1964	1970	1980	1985	1988	1989	1990
Total Assets	25.9	107.0	578.5	763.9	1,201.3	1,625.0	2,048.3
Foreign Assets	25.8	91.3	429.5	408.1	377.2	558.4	750.9

Source: Central Bank Of Jordan. Annual Report 1990.

The Main Functions of the Central Bank

Issuing and Regulating Currency: The Central Bank of Jordan is the sole issuer of Jordanian currency (notes and coins). Naturally, currency in circulation is backed by gold and foreign exchange in convertible currencies, as well as the Treasury Bills and Jordan Government Bonds of 10 years maturity (see Annual Report, 1990).

TABLE 3.3

Currency Issued

Year	1964	1970	1980	1985	1988	1989	1990
Currency Issued	24.4	84.4	358.6	545.0	825.9	887.5	1,022.2

Source: Central Bank of Jordan. Annual Report 1990.

Acting as a Banker to the Government: The Central Bank of Jordan is the fiscal agent for the Government and as such it keeps the accounts of revenues and expenditures for ministries and government departments. It also disburses, transfers and collects funds, domestically and abroad, as well as opens letters of credits. These banking services are also offered to public institutions. The Central Bank is also charged with the management of public debt consisting of Treasury Bills and Government Bonds. The Bank sells and buys these Bills and Bonds to and from licensed banks and public. It also pays out interest due on public debt (see Annual Report, 1990).

Control the Foreign Exchange and Manage the Reserves: The Central Bank is responsible for selecting suitable investments and the amount to be invested in each currency. It also allows licensed banks to keep foreign assets in accordance with regulations it issues from time to time in conformity with general economic interests of the country (see Annual Report, 1990).

The Central Bank's Role in Economic Development: The developmental role of the Central Bank is manifested directly in creating monetary and financial institutions. Capable of mobilizing and channelling saving for development projects. Also, the effective role of the Bank played in the establishment of the Housing Bank, Pension Fund and Jordan Securities Corporation. The Bank also contributes to strengthening the Government's financial position through managing the public debt as well as its holdings of gold and foreign exchange (see Annual Report, 1990).

3.3 Commercial Banks

Commercial banks have to be licensed by the Jordanian Central Bank before they can operate in Jordan. They also must comply with the Central Bank of Jordan regulations with respect to their activities and practices as well as the ratios fixed by the Bank for credit, liquidity, cash reserves, and capital. Banks may not open new branches or merge with other established banks except with the approval of the Central Bank. The local commercial banks are usually established by a group of people who get together to form a sponsoring committee for the bank to be established and who subscribe to a percentage (not over 75%) of the capital. The unsubscribed capital is then offered for public subscription.

Foreign banks can open branches in Jordan. The banking laws include a number of provisions regarding the

establishment of the commercial banks, most important of which are:

1) No license shall be granted for the establishment of a bank except for public shareholding company. Branches of foreign banks, however, are exempted from this provision.

2) Some of these commercial bank apply the principle of profit-loss sharing system. This means that these banks, focusing in particular on the issue of elimination of the rate of interest from the system, were established in order to achieve social justice and specific patterns of income and wealth distribution.

3) Working capital in Jordan of any commercial bank shall not be less than JD 5.0 Million at any time.

4) They accept demand, time (fixed term or subject to notice) and saving deposits from both residents and non-residents in local currency and as well as in foreign currencies.

TABLE 3.4

Year	1986	1987	1988	1989	1990
Capital, Reserves and Provisions	214.2	229.1	251.0	280.0	312.3
Total Assets	2,634.8	2,898.5	3,250.5	3,780.3	4,090.0

Source: Central Bank of Jordan. Annual Report 1990

Deposits at the commercial banks have increased in size and witnessed a change in structure. The size expanded from JD 48.7 millions in 1964 to JD 2642.6 millions by the end of 1990. On the other hand, the structure of deposits changed in favor of time and saving deposits which incased from JD 25.7 millions in 1964 to 2103.9 by the end of 1990.

TABLE 3.5

Total Deposits and Credit Facilities of Commercial Banks (JD Million)

Year	1986	1987	1988	1989	1990
Total Deposits	1,946.3	2,142.4	2,346.1	2,625.3	2,642.6
Demand Deposits	370.7	379.9	434.9	509.2	538.7
Time and Saving Deposits	1,575.6	1,762.5	1,911.2	2,116.1	2,103.9
Credit Facilities	1,395.4	1,513.0	1,634.0	-	-

Source: Central Bank Annual Report 1990.

Also, the commercial banks deal in foreign exchange by buying and selling, in addition to keep accounts in foreign currencies in accordance with the Central Bank directions.

3.4 Specialized Credit Institutions (SCI) (Public and Joint Ownership)

Commercial banks owing to the fact that their liabilities are short-term, they can not extend long-term loans suitable

for the financing of development projects in different economic sectors. especially agriculture, housing, tourism, and industry. Therefore it was necessary to establish this kind of financial institution to engage with medium and long-term credit facilities for such sectors at concessional terms in order to accelerate the economic development process. These institutions depend mainly on their capital and internal and external borrowing, with the exception of the Housing Bank which mainly depends on deposits as source of funds.

TABLE 3.6

Specialized Credit Institutions (JD MIllion)

Year	1986	1987	1988	1989	1990
Total Assets	738.1	831.8	880.8	957.2	1,029.1
Capital	62.8	63.2	65.1	68.3	69.2
Liquid Assets	92.0	124.1	149.3	211.1	243.7
Outstanding Loans	441.3	502.1	535.3	544.2	554.8

Source: Central Bank of Jordan. Annual Report 1990.

The assets of SCI totalled JD 1029.1 millions at the end of 1990 which is an increase of 7.5% against 8.7% in 1989. The SCI loans outstanding in 1990 grew by 1.9% to reach 554.8 millions against 1.7% in 1989. The rise in 1990 and mainly a result of the increase of loans extended by the House Bank by 11.3 millions.

3.5 Financial Intermediaries and Contractual Saving Institutions

The number of financial intermediaries and contractual saving institutions fell from eleven institutions at the end of 1988 to nine institutions at the end of 1989 and to five institutions at the end of 1990, as a consequence of the conversion and merger process. Before 1989, some of these financial institutions applied the profit-loss system. A law was enacted in 1989 to classify these financial institutions as commercial banks but they still work on the profit-loss sharing principle.

TABLE 3.7

Financial Intermediaries and Contractual Saving Institutions (JD Millions)

Year	1986	1987	1988	1989	1990
Cash	0.4	1.0	2.3	3.2	3.4
Foreign Assets	17.2	27.4	34.2	14.8	7.9
Fixed Assets	4.4	5.1	5.6	7.2	2.1
Corporate Bonds	9.3	6.8	7.7	6.3	1.3
Deposits with Licensed Banks	58.2	54.4	60.1	51.8	17.5
Capital	30.8	34.5	36.0	33.3	17.4
Reserves	8.1	9.3	10.6	1.4	1.8

Source: Central Bank of Jordan. Annual Report 1990.

3.6 Monetary Policy

The Central Bank of Jordan continued to adopt restrictive monetary policy for the second consecutive year in order to combat inflationary pressures and to preserve the gain achieved under the economic adjustment program. The bank also continued to work for reinforcing foreign reserves position as a main tool for preserving a stable exchange rate for the Jordan Dinar.

In order to promote domestic exports the Central Bank canceled the requirement of submitting a bank guarantee in its favor by exporters of goods of Jordanian origin as was stipulated in foreign exchange control regulations. Instead, exporters may submit written undertakings to repatriate the foreign exchange proceeds of their exports. The bank guarantee requirement continued to apply with regard to re-export of foreign origin. These amendments became effective as of the beginning of July 1990.

To encourage the local investment and support development efforts in the country the bank instructed licensed banks and financial companies to increase their minimum investment in public shares from 15% to 20% of the total paid up capital and reserves.

With regard to foreign exchange control regulations the bank increased the ceiling of foreign currency deposits held by Jordanian residents with commercial banks and financial companies in the country.

In October 1990, other modifications were imposed on foreign exchange control regulations limiting deposits by exporters with local banks and financial companies to only 10% of their foreign exchange export proceeds instead of 30%. This measure followed the significant improvement in foreign exchange position of the banking system which became able to finance raw material imports.

We can see the effects of all these policy measures from the following table which shows the major economic indicators from the year 1975 through 1990.

TABLE 3.8

Major Economic Indicators (In Millions)

Year	Currency in Circulation	M1	M2	Imports	Exports	Over-draft Rate[1,*]
1975	139.0	224.6	228.4	234.0	40.1	7.00
1976	161.4	276.9	378.3	339.5	49.6	8.00
1977	188.0	331.0	467.6	454.4	60.3	8.50
1978	219.5	375.4	606.7	458.8	64.1	8.50
1979	275.4	472.7	773.1	589.5	82.6	8.75
1980	351.6	594.8	984.8	716.0	120.1	9.00
1981	412.3	701.7	1179.9	1047.5	169.0	9.00
1982	470.0	787.5	1403.3	1142.5	185.6	9.00
1983	516.0	869.4	1650.2	1103.3	160.1	8.81
1984	530.4	878.4	1757.7	1071.3	261.1	-
1985	531.8	848.2	1874.8	1074.5	255.3	-
1986	583.9	897.1	2072.4	850.2	225.6	-
1987	655.8	979.8	2372.2	915.5	248.8	-
1988	811.2	1166.8	2626.4	1022.5	324.8	-
1989	871.1	1326.5	2990.2	1230.0	534.1	-
1990	1006.1	1432.8	3132.0	1725.0	612.3	-

* Central Bank of Jordan, Yearly Statistical Series (1975-1990)
* Not available after 1983
[1] Percent

TABLE 3.8 (continued)

Major Economic Indicators (In Millions)

Year	Foreign Aid	Remittances	CPI (1986=100)[1]	Discount Rate (end of period)[1]
1975	140.4	53.3	44.4	5.00
1976	127.9	129.6	49.5	5.50
1977	168.8	154.8	56.7	5.50
1978	107.2	159.4	60.7	5.50
1979	320.7	180.4	69.2	5.50
1980	401.0	236.7	76.9	6.00
1981	432.5	340.9	82.8	6.50
1982	375.4	381.9	89.0	6.50
1983	296.8	402.9	93.5	6.25
1984	282.6	475.0	79.1	6.25
1985	317.5	402.9	100.0	6.25
1986	240.5	414.5	100.0	5.75
1987	206.3	317.7	99.8	5.75
1988	241.9	353.7	106.4	7.00
1989	-	358.3	133.8	8.00
1990	-	406.3	155.4	8.50

[1] Percent

TABLE 3.8 (continued)

Major Economic Indicators (In Millions)

Year	Exchange Rate $/JD	Foreign Loans (end of period)	Foreign Reserve	SDRs	Gold	Outstanding Commercial Banks Credit
1975	3.13	16.16	174.9	2.86	10.81	126.7
1976	3.01	19.89	205.08	2.86	26.21	207.1
1977	3.04	58.51	272.0	2.86	26.53	244.1
1978	3.27	90.7	360.89	2.21	26.67	332.8
1979	3.33	37.62	450.9	4.02	26.82	465.1
1980	3.36	71.57	624.77	7.15	64.31	563.9
1981	3.03	76.39	671.66	6.50	67.20	721.3
1982	2.84	65.27	632.39	6.49	68.76	887.2
1983	2.75	76.8	729.56	2.80	74.11	1030.9
1984	2.60	122.2	740.87	0.0	69.72	1184.8
1985	2.53	162.41	781.35	0.0	69.79	1274.4
1986	2.86	159.77	821.86	0.0	70.02	1395.4
1987	2.95	63.22	870.50	0.0	65.82	1513.0
1988	2.66	97.52	935.69	0.0	65.95	1634.0
1989	1.75	-	-	0.0	69.60	-
1990	1.51	-	-	0.0	67.10	-

Source: Central Bank of Jordan, Monthly Statistical Bulletin, 1990.
CentraL Bank of Jordan, Yearly Statistical Series (1975-1990).

The most notable monetary policy measure taken by the Central Bank in 1990 was the liberalization of interest rate charged by banks and financial companies on different types of bank credit facilities. The structure of commercial bank interest rate in Jordan has become fully liberalized as interest rate on deposits has been floating since September 1989. Loans granted by specialized credit institutions for export promotion, industry, agriculture, rural development, and housing remained at lower favorable interest rate. In continuation of the efforts toward the re-organization of the banking system, the bank had started since 1989. The year 1990 witnessed structural changes of some banking institutions. One of these changes is reflected in Islamic National Bank which started its operation in the beginning of 1990.

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CHAPTER FOUR

DEVELOPMENT OF THE PROFIT-LOSS BANKING SYSTEM

4.1 Introduction

The concept of profit-loss sharing economic system or the Interest-Free economic system has been in existent for fourteen hundred years. This kind of economic system is adapted from the Islamic rules and principles. In Islam interest (Riba) is completely prohibited from any kind of financial transaction or a business activity. Islam defines riba as the premium that must be paid by the borrower to the lender along with the principal amount as a condition for the loan or for an extension in its maturity (see Chapra, 1985). There are three main reasons why Islam forbids the practice of riba: social justice, economic reform, and moral obligation. Islam is the religion of justice and it gives a chance to every individual in the society to have an adequate social life. This can be achieved by a just distribution of wealth. If riba is prohibited then this justice can be easily achieved.

It is important to understand that Islam is not against someone in getting rich. It, however, imposes certain restrictions and rules on wealthy people in terms of how to operate and to invest their wealth. The purpose is to achieve a stable economic system with strong moral ethics between

individuals. In reality, in each society there are rich, average and poor people. The issue is how the average and the poor can carry out their businesses. One way is using interest as a tool, by getting the capital from the rich and using it. The lender will get back his initial capital plus an interest income facing no risk at all. The interest income is Riba and is determined before the outcome of the project is known. The borrower faces two outcomes: first, he will make gross return above the initial capital plus interest, and second, gross return below the initial capital and the interest income. In both cases the borrower is facing all the risks. Also, under both situations, the lender will accumulate more wealth at the expense of the borrower who will in turn go deeper into debt. Within the Islamic economic system all individuals (borrowers and lenders) have to share the risk. The risk cannot be taken by one individual only. This will lead to cheating, unfairness and dishonesty between individuals. In case of interest dealing, wealth ends up in the hands of a few who can then exercise monopoly over it. Resources cannot be allocated in a just manner to benefit all members of the society. Since interest is prohibited in Islam, then the alternative is the profit-loss sharing economic system where risk is shared between individuals.

As we mentioned in the beginning of the chapter, the profit-loss sharing system has been in existent since fourteen centuries ago. However, it has been operation only at

individual level until about a hundred years ago when it started operating at some institutional level. In late 1950s, few small rural banks were established by few wealthy people in Pakistan. These were profit-loss sharing banks. In 1963, Nasser Social Bank was established in Egypt as a profit-loss sharing bank with financing provided through small depositors. After 1974, profit-loss sharing banking grew very rapidly due to four major reasons (Hammad, 1989):

1. There was Islamic movement in all Muslim countries being carried out by individuals or groups to educate people the Islamic principles in every walk of life.

2. Increase in oil prices created huge amount of liquid capital to be invested and the investors were willing to invest their capital on Islamic principles.

3. Increase in government revenues from oil encouraged the governments to expand their services and to develop industrial, educational, commercial, agricultural, and financial sectors.

4. Another important factor was that Muslims respect their religion and have a strong commitment to it. Somehow the prefer to hold their balances in cash rather than invest or deposit them in riba banks. Governments to solve this problem and encourage them to invest their capital and establishment of profit-loss sharing banks would meet both their economic and religious needs. The issue of holding cash in hand is very important. Government cannot print new money

(inflation) all the time to finance its expenses and investment. These institutions were necessary to carry out investment projects which would also improve the unemployment situation.

4.2 Levels of Conducting Profit-Loss Sharing Banking System

The adaptation of the profit-loss sharing banking system has been different from one country to another but, in general, the system was applied at three levels:

1. Most of the Muslim countries adopted the system through individual profit-loss sharing banks and financial institutions which were privately owned. Examples of these countries are: Jordan, Saudi Arabia, Egypt, Sudan, United Arab Emirates, etc.

2. Government of Pakistan followed gradual program or partial application of profit-loss sharing banking system. The first part of these financial institutions opened and started its operations with the interest-free economic system in 1981. As from July 1985, all banks and other financial institutions eliminated interest from all activities and operations and followed the Islamic way of financing. This does not apply to foreign and international business, but does applies to domestic business of foreign banks operating in Pakistan. Investment partnerships between banks and customers replaced straight loans at interest. From the above we can see that it took Pakistan less than five years to have all

banks and other financial institutions to adopt the new system. One main reason that this was possible was because of a stronger Islamic government.

3. Comprehensive profit-loss sharing banking system in Iran is another example. The Central Bank of Iran was established in 1960 as the government's bank and the note-issuing authority. All other banks, financial institutions and insurance companies were naturalized in June 1979 and were re-organized into eight new state financial institutions. The law for profit-loss sharing banking was given final approval in Summer 1983. From March 1985, interest on accounts was abolished.

The profit-loss sharing banks can be classified in two ways:

A) Profit-loss sharing commercial banks These banks operate at the national level. Some of these banks are Jordan Islamic Bank and Investment, Faisal Islamic Bank of Sudan and Qatar Islamic Bank.

B) Interest-Free Investment and Holding Companies These institutions operate at national as well as international levels. Some of these institutions are Al-Baraka Group (Bahrain), Islamic Investment House (Jordan) and Dar-Al-Maal Al-Islamic Trust (Geneva).

4.3 Jordanian Profit-Loss Sharing Banking System

The Jordanian Profit-loss sharing banking was established

on November 1978 in Amman, Hashemite Kingdom of Jordan, and registered in the commercial register as public shareholding financial institutions with the requirement of the financial institution law in Jordan. The capital of the bank consisted of four million JD and was divided into four million shares, each share for on JD (Law, Section 9). Section 5 of these financial institutions' law indicates that the obligation of the banks to avoid usury (riba), whether in taking or giving, shall be absolute in all cases and operations. Hence any rules, regulations, or instructions which these profit-loss sharing financial institutions may issue in violation of this obligation will have no legal effect whether for or against the banks.

The Jordanian profit-loss sharing banking system was classified the seventh largest interest-free banking system in 1991, while in 1987 it ranked third. This was according to its size of and capital and assets (Financial Times, 1992).

4.4 Objectives of the Jordanian Interest-Free Banks

Section six of Banks' Laws and Regulations indicates that the interest-free banks of Jordan's objective is to meet the economic and social needs in the field of financial services by providing funds for financing and investment on basis of profit-loss sharing. In particular these objective shall include: (the following three have been taken from Jordan's interest-free banks' laws and regulations, section six)

1 - The banks should develop means to attract funds and saving to invest and lend it on the basis of profit-loss sharing (the elimination of interest from all forms of banking and investment transactions).

2 - Since the majority of the population is Muslim the banks' responsibility is to provide its services and operation to all kinds of sectors and to give attention to those people who do not like to deal and benefit from the conventional banking services.

3 - At the national level these banks can play an important role by providing interest-free loans for the poor people. They can also provide services on basis of mutual benefit.

4 - At the international level these financial institutions can re-allocate resources between Muslim countries. Some of these Muslim countries are rich in monetary capital and the others have a surplus of human capital (labor). The banks can promote economic integration among these two groups of Muslim countries.

4.5 Methods of Financing Under Interest-Free Economic System

Under the interest-free economic system a number of different methods of financing investment and businesses are available. These methods can be classified in two categories:

1. Major Methods: These include three kinds of financial contracts:

a) Mudarabah contract which can also be called profit-

loss sharing contract and trust financing contract.

b) Musharakah contract which also called capital participation or equity financing contract.

c) Murabahah contract or cost plus trade financing.

2. Minor Methods: These include at least four kinds of financial contracts:

a) Ijara contract or lease contract or rental contract.

b) Ijara wa-Iqtina or lease-purchase contract.

c) Qard Al-Hasan contract or interest-free loan.

d) Mozara'ah contract or agricultural contract.

Before we start explaining the above mentioned contracts in detail, it is important to understand that the kind of projects and investments that are to be undertaken in any contract must be acceptable in Islam. Islam classifies economic transactions in two ways, one is acceptable or permissible (halal), and the second is non-acceptable or non-permissible (haram). An example of the haram activity is wine industry.

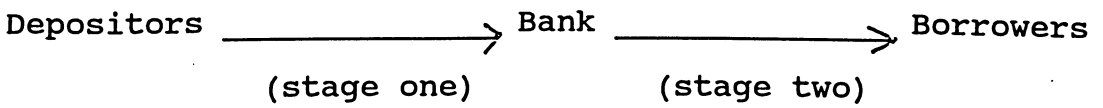
4.5.1 Mudarabah Contract (Trust Financing)

Trust contract is one kind of business and financial contract between a bank (lender of money) and a firm (borrower of money). In some large projects more than one bank may advance the loan managed by one or more firms. In most cases, however, the contract is written between one lender and one borrower. Under this contract the lender provides all the financial capital and the borrower provides his labor, effort,

and manages the project. This kind of contract usually applies to commercial activities for short period of time.

When the contract is written and signed by both parties two elements are to be determined: first, the amount of capital the bank is going to lend the borrower, and second, the profit share ratio that goes to the bank. Two outcomes are possible. If the investment turns out to be good, the bank will receive its initial capital and its share of the profit. Amount of this profit is totally random and is unknown to the bank at the time of signing the contract. Borrower, on the other hand, receives the residual amount of the profit. However, if the investment turns out to be bad, the bank's share would be the initial capital minus total losses. The firm's loss is in terms of its labor and effort for which they receive nothing. In this manner the lender shares in the risk of the project and has to bear all the losses. Under both cases lender and borrower share as well as the profit and there is no guaranteed (fixed) amount of profit or return to any of the parties.

So far we have explained the relationship between the bank and the firm. Another aspect that needs to be looked at is what happens to the depositors to the banks whose money is used to finance the project undertaken by the firm. Hence we have two following relationships:



Under stage two the bank gives loans to many borrowers under Mudarabah contract. Each borrower's project is independent from other projects and loan cannot be transferred between borrowers. Some projects may succeed while some may fail, or two borrowers who get the same amount of loan may have different amount of returns in their respective projects. The difference in returns may be because of the nature of projects, the amount of labor and effort put in by each borrower, etc. The bank will collect its gross return from each borrower (stage two) which is the initial capital and bank's share of the profit if the project is successful or initial capital minus the losses in a situation when the project has failed.

Under stage one, since the bank received all its revenues from deposits, it will return to each depositor his initial amount of deposit. Now what about the net profits received by the bank from all its borrowers. These net profits are to be shared between the bank and the depositors according to the agreement between them. Bank pools together its earnings from all its operations involving these deposits and distribute them to all depositors. Hence we see that two separate Mudarabah contracts are drawn up by the bank, one between the bank and the depositors, one depositor at a time, and the second agreement is between the bank and the borrowers. It is a two tiered agreement or arrangement. Under Mudarabah contract the banks is acting as the agent-manager for the

depositors. Also, the outcome of the first Mudarabah contract depends completely on the second Mudarabah contract and the lender (bank) must do its best to encourage and the borrowers to take care of their projects or bank may not be trusted by the depositors.

We can see from the above that Mudarabah contract results in a mutual benefit for the two parties involved. Some wealthy people who have the capital may not have the desire or the necessary skills to run and manage a project. And there may be some who have the skills but not the capital to run a project. By writing a this kind of contract both parties involved share both the risk and the returns. It is in the absolute advantage of either party that project be successful. To void any conflict and problem between all the agents in Mudarabah contract, Islam emphasized conditions for Mudarabah contract which are enumerated below: (see Fiqh us-Sunnah)

1. The loan given to the borrower must be financial capital (cash) otherwise the contract is invalid and this financial capital should be known (determined quantity) to know the net profit which will be divided between them.
2. The net profit which is random should be divided between them according to a known and determined share rate or percentage, such as the owner of the capital will get one-fourth, or one-half, or one-third of the profit.
3. The agent have the right and full freedom to manage and

operate the business. The lender cannot impose on the agent to deal with specific people (e.g. to buy and sell to certain individuals).

4. From Islamic point of view the time period for Mudarabah contract cannot be predetermined, however, the contract can be terminated at any time. The contract can also be drawn between a Muslim and a non-Muslim.
5. If the borrower is proven to be the cause of the loss due to his negligence or will full action, then he must be responsible for the financial loss completely.
6. The borrower should be careful about the expenses, that is he should be honest. For example, if he travels for the sake of business then all the expenses should be added to the business expenses. But if he travels for his personal purpose the expenses should not be added.
7. If the agent violates one of the contract conditions during the contract period then he becomes like a manager and will receive salary only.
8. Under Mudarabah we assume that financial capital is provided by the lender while the borrower provides his labor and time, but if during the investment period the borrower provides any capital, then the contract becomes equity contract (see below).

4.5.2 Musharakah Contract (Equity Financing or Capital Participation

This kind of contract is applicable to medium and

long term industrial and commercial projects. This contract is between two or more parties to engage in a specific business or investment project. Each agent provides part of the capital and shares the profits or losses, according to their capital participation. Each one has the right to participate in the management of the business. There are two kinds of participations:

1. One is called Al-Enan. In this kind each agent can have different capital participation ratio, one can provide 50% of the total capital needed, second one can provide 30% and the third one can provide 20%. It is also that one of the participant will manage the project for a salary. Profits and losses are shared according their respective capital contribution.

2. The second type of equity financing is called Al-Mufawadah. Under this contract each party provides equal amount of the capital. Hence if there are four partners, each one will provide 25% of the capital needed. Each party should participate in the management equally. Since participation in both capital and management is equal, all profits and losses are shared equal among all the partners. Bank, if involved, provides the financing ranging between 35-50% of the total capital. Bank plays the role of silent partner, but has the right to inspect and to monitor the operations. Each party may have a constant or decreasing participation. In the first case, the bank keeps the same capital participation, while in

the second case the bank holds the profit of other partners in order to pay back the bank's capital, and a result the bank will leave the business after a certain period of time.

4.5.3 Al-Murabahah Contract (Cost Plus Financing)

This kind of contract is applicable to short term projects and is used to finance current assets (short term) or fixed assets (long term). Murabahah financing is the leading tool of profit-loss sharing banks. Under this contract a customer may request the bank to purchase a particular or specific machine, for example, on his behalf. The sale price of this machine to the customer will be its cost (to the bank) plus an agreed amount of the profit (for the bank). This amount of profit is similar to fees or charge for the services of the bank. An important issue is how this profit is determined?

Murabahah contract may also represent deferred sale which means that the payment (cost plus profit) can be paid in full or in installments. The important issue here would be: is the amount of profit is the same under both kinds of payment. According to present day interest-free financial institutions, this contract is a resale contract where the bank purchases the machine in its name that a particular customer has requested. The bank would then be reselling the machine to that customer at a higher price which is the cost plus an agreed upon profit. The exact specification of the machine in question should be written on the contract before the bank

buys it. After the bank has purchased the said machine the customer must buy it from the bank. However, the customer can deny to buy the machine and the bank will be responsible for the disposition of the machine.

The Murabahah has been criticized by many economists and scholars on the grounds that it opens up the doors for fixed profit rates which is same as interest. One convenient way for the bank to determines its profit margin would be the prevailing interest rate. Another problems that occurs with this kind of contract is that the bank and the customer sign the contract while the machine is still owned by the machine dealer. It is important that bank has the ownership of the machine at the time of signing the contract. The bank cannot sell something that it does not own. Despite these shortcomings and weaknesses, cost plus financing has become very popular in profit-loss sharing banking, particularly in international trade and import goods and commodities. The following table lists the total investment by Jordanian interest-free banks in Mudarabah, Musharakah and Murabahah.

TABLE 4.1

INVESTMENT BY MUDARABAH, MUSHARAKAH

AND MURABAHAH

Year	Amount (JD)
1979	731,623
1980	6,746,021
1981	14,198,685
1982	26,471,772
1983	37,591,249
1984	63,013,403
1985	71,013,906
1986	95,461,877
1987	108,997,214
1988	124,149,759
1989	144,078,171
1990	148,878,109
1991	193,091,736

Source: Central Bank of Jordan, Annual Report (1990).
Jordan Interest-Free Bank, Annual Report (1979-1991).

4.5.4. Other Types of Contracts

1. Ijara Contract (Lease) It is a lease contract under which the bank leases fixed assets to a customer for fixed charge and for a specific period of time (for example, equipment, building).

2. **Ijara Wa-Iqtina (Hire-Purchase Financing or Lease-Purchase Contract)** "Under this kind of contract the lessee has the option of eventually acquiring the asset leased. The bank leases an asset (building, machinery, vehicle, etc.) to customer who pays installments over a period of time into a saving account. These installment are then invested in Mudarabah for his account. Eventually the principal and profit will offset the cost of leasing and purchase of the asset." (see Hammad, 1989)

3. **Qard Hasan (Interest-Free Loan)** "This is an interest-free loan which is the only type of loans permitted by the Islamic law. Why would a loan be made by a bank if its does not receive renumeration? The interest-free banks are advised to make use of this loan (in certain cases of Musharakah) for working capital, or for a project participant customer who has cash-flow difficulty, or for a depositor with saving account (no interest) who has an urgent for a short term loan. Also these loans could be financed through special funds usually deposited for this purpose." (see Hammad, 1989)

4. **Mozara'ah Contract** "Contract wherein the bank turns over a specified plot of land for a specified period of time to another party (agent) for the purpose of forming the land and dividing the harvest between the two parties in specified ratio. The loss is borne only by the financier in proportion to their share in total capital." (see Hammad, 1989)

From the above we can see that interest-free banks can

advance funds in seven types of non-interest financing contracts, all with risk-sharing acentral focus. These contracts are Mudarabah, Musharakah, Murabahah, Ijara, Ijara wa-Iqtina, Muzara'ah, and Qard Hasan. However, the first three contracts are the most widely used to combine human and financial resources for the purpose of trade and industry.

TABLE 4.2

BANKING INVESTMENT ACCORDING TO VARIOUS INTEREST-FREE CONTRACTS (IRAN)

Type of Contract	Value (billion)	Percent
Lease-Purchase	27.9	3.7
Installment Sale (Morabaha)	247.5	32.8
Civil Partnership	109.10	14.5
Legal Partnership	37.0	4.9
Salaf Transaction	26.8	3.5
Direct Investment	4.4	0.6
Mudarabah	134.6	17.8
Others	4.0	0.5
Total Transaction (After the profit of investment deposits	591.3	78.3*
Debt Purchase	85.0	11.3
Qard-Hasan	78.4	10.4

Total Transactions (Does not profit of investment deposits	163.4	21.7*
Total	754.7	100

Source: Central Bank of Iran, Annual Report (1984).
IMF, Occassional Paper #49, March 1987.

TABLE 4.3

PAKISTAN INVESTMENT OF PROFIT AND LOSS SHARING FUNDS BY COMMERCIAL BANKS

Financing Technique	June 1984 Value (million	Share	Dec. 1984 Value (million)	Share
Morabahah	17318	86.7	16263	83.0
Musharakah	617	3.1	777	4.0
Hire Purchase	132	0.7	130	0.7
Rent Sharing (House loans)	130	0.6	198	1.0
Equity Participation	1593	8.0	1970	10.1
Others	176	0.9	249	1.3
TOTAL	19966	100.0	19587	100.0

Source: Central Bank of Pakistan, Annual Report (1984).
IMF, Occasional Paper #49, March 1987.

It is important to indicate that profit-loss sharing economic system encourages the usefulness of capital or wealth through investment and hence keeping the money in circulation. Islam imposes a Zakah tax of 2.5% on uninvested capital. Hence if the capital is not invested, it would diminish over time until it dissipates. A rational person must invest part of his wealth to seek a return at least equivalent to the amount of Zakah tax. Zakah tax also serves as an instrument for proper allocation of wealth and it is levied on productive asset when they are not employed.

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CHAPTER FIVE

PROFIT SHARING (TRUST) CONTRACT UNDER INTEREST-FREE ECONOMIC SYSTEM

5.1 Introduction

In the previous chapter we showed that there are primarily three kinds of financial contracts applied within the interest-free economic system. These are the Trust contract, Equity contract, and Cost Plus Trade financing. In this chapter we are going to concentrate only on the Trust contract. The reason for this is that under this kind of contract the investor will face a higher degree of risk than the other kinds. Also, as we explained in Chapter Four, under a Trust contract two agents engage in the project. These two agents are: the investor (bank) who provides the capital, and the entrepreneur (borrower) who provides his efforts in running and managing the project.

Agency cost, Moral Hazard and Adverse Selection are some of the problems that may arise in this kind of financial contracts. Agency cost is likely to increase as the borrower depends completely on external financing and the economy may suffer from under-investment. Moral hazard (hidden action) arises because of two reasons: first, the elimination of fixed or ex ante rate of interest; second, the total outcome depends on the effort of the entrepreneur which is not observed by the

investor. Adverse selection (hidden information) is caused by the fact that the investor does not know the ethics of the borrower and that the latter may know more about the project than the former. This creates a situation of asymmetric information where one economic agent (firm or borrower) knows something that the other economic agent (investor) does not. In this kind of situation it can be expected that the investor (bank) will act in a very conservative manner in providing the borrower with the capital.

The best way to study this kind of problem is through the principal-agent model where the principal (investor) wants to introduce the agent (firm) to take some action which is costly to the agent. Although the principal may be unable to directly observe the action of the agent, he can observe the output. Equilibrium in a financial market involving hidden action (moral hazard) will cause some form of credit rationing. The investor would like to provide more capital to be invested but they are unwilling to do so because it will change the incentives of the borrowers.

With credit rationing borrowers cannot borrow as much as they would like or need even when the financial and other markets are operating well. There are two types of credit rationing: one, when borrowers cannot borrow as much as they want at the going interest rate, and two, when among identical borrowers some who wish to borrow are able to do so while others cannot. Mankiw (1986) shows that the allocation of

credit is non-optimal in the absence of credit rationing. The non-optimality arises from the use of debt contract which implies that in equilibrium some safe borrowers who should invest do not do so and some borrowers who should not invest are doing so. Chan and Thakor (1987) show that in financial equilibrium with asymmetric information (both moral hazard and adverse selection), full collateralization helps avoid rationing.

The solution to the problem of adverse selection is market signaling, where the entrepreneur shows that quality of the project (location, services, demand, etc.). Also, the borrower can emphasize his own skills, education and experience toward the kind of project. In case of moral hazard, incentives can be used by the principal to motivate the agent to take mutually beneficial actions.

The chapter is organized as follows: section two presents the optimal profit-sharing contract. Section three solves for optimal debt contract. In section four we do welfare analysis while investment analysis will be dealt with in section five.

5.2 Model

The main objective of this section is to design a profit-sharing contract adopted in an interest-free financial market. The basic feature of the profit-loss sharing economic system is complete elimination of interest (riba) in conducting financial transactions. A contract is written specifying the

rules for engaging with a business and for dividing the possible outcomes of a risky investment between an investor and a borrower. If the project succeeds, the investor gets his initial capital plus a predetermined share of the random net profit. The borrower, on the other hand, will receive the residuals. However, if the project fails, the lender will bear all the financial losses and the borrower will loose his effort and time. From the above, we can see that neither the borrower nor the lender receive fixed payment. In terms of the risk we have four possible situations:

1) If the investor is risk neutral and the borrower is risk averse then the investor bears all the risk and the borrower receives certain income independent of the state of nature. This, however, violates the basic assumption of the profit-loss sharing contract because the borrower must receive variable income instead of any fixed payment. In general theory this assumption is used because investors own more physical capital and can diversify risk.

2) The situation where the investor is risk averse and the borrower is risk neutral will also violate the assumptions and rules applied by the interest-free economic system. In this scenario the investor will receive a fixed income and the borrower will have to bear all the risk.

3) If both the investor and the borrower are risk averse, then both will share the risk and their main objective is to maximize the end of period expected profit. There will be no

violation of any assumption of the profit-loss sharing economic system.

4) Finally, if both the investor and the borrower are risk neutral this would mean that both will maximize the end of period expected profit and both will receive variable income. Again no basic assumptions of the profit-loss sharing system are violated.

For the purpose of this study we assume that both are risk neutral. Although autarky is always possible, we assume that both would be better off if the investor lends "k" amount of his wealth to the borrower to activate his project. Our model represents partial equilibrium because we emphasized only on the relation between the bank and the borrower, we have excluded the relation between the depositors and the bank. It is important to note that in a general equiliburim model there will be two trust contracts, first between the depositors and the bank and the second between the bank and the borrower. As a result, when the bank receives all its profit share from the borrower (second contract) it will divide this profit among itself and its depositors according to the first contract. Also, when the bank lends capital to one borrower, it cannot be transferred from this borrower to another so that each project is independent from the others.

If the financial market obtains complete and full information, then there would be no problem in achieving the first-best level of investment. Also, since the investor does

not need to design optimal incentives, he will choose the highly skilled and more honest entrepreneur and enforce an optimal decision. In our model, however, we assume that financial market has imperfect information (asymmetric information). In the model, no collateral is required because if collateral is imposed then there is no risk to the lender and no credit rationing can exist.

The model developed in the following pages follows after the model developed by Bashir (1990). However, certain changes have been made in the model. First, Zakah tax is also imposed on net profit. Second, in our model we have introduced the specific skills (technical, academic, etc.) possessed by the borrower as a separate variable. Third, we have imposed Zakah tax on uninvested capital throughout the model, while in Bashir's model this tax was imposed on the invested capital in the social welfare analysis (even though in his discussion he mentions that "Zakah tax on any amount of capital held idle will encourage investing and discourage loan rationing").

At the beginning of the period, the investor, endowed with "W" units of capital ($0<W<\infty$), is willing to invest "k" amount of his welath in specific investment project. Although the amount of effort put in by the borrower in the project is not observed by the investor, he "has a subjective belief about the borrower's ethics" (Bashir, 1990). However, the information about the technical skills and qualifications of

the borrower is known to the investor. We assume that this prior information is represented by a probability distribution p(a), where 0<a<1.

The borrower, on the other hand, has a risky project at hand without any initial capital available. He must obtain the capital from an investor for one period. The borrower knows his ethics and skills before the signing of the contract. After the contract is signed, he will decide on a level of effort (e). He may choose a high level of effort (e_H) or a low level of effort (e_L). Similarly, he can choose between the two level of ethics, a_1 and a_2. Hence both effort and ethics have discrete probability distributions.

The production function that we choose is a function of four variables: capital, specific skills, state of nature, and effort. The level of effort provided by the borrower has a direct relation with his ethics:

$$e = f_1(a)$$

$$R = f_2(e)$$

hence $$R = f_2(f_1(a))$$

From the above we can see that ethics have an indirect effect on the production function. Total return (R) is endogenous from lender's point of view, since "R" depends on the effort supplied by the borrower (moral hazard) and his ethics (adverse selection).

The total return (output) of the risky investment is described by a production function R(.) which can be written

as:

$$R = F(k, e, \theta, X) \qquad (1)$$

where R = random total return

k = amount of initial investment by the bank

e = effort supplied by the borrower

θ = a parameter describing certain skills related to specific project (technical skills and qualification)

X = state of nature

In our model θ plays an important role for two reasons: first, in less developed countries it is almost impossible to obtain information about borrower's credit record. Personal contacts play an important role because the borrower must provide the lender with information that he has technical skills and qualification toward the project; second, it is important for the lender to know if the borrower himself will control the project or if he is going to hire somebody else to manage it. In the latter case two separate relationships are involved: first, between the lender and the borrower, and second, between the borrower and the manager. This situation is both difficult and costly to the lender. As a result the investor prefers to advance the capital to the borrower who has the skills himself to run the project so that he has a direct relationship with the borrower.

We assume both the investor and the borrower have posterior observation of the state of nature and that the

capital and effort are chosen before the state of nature is realized.

Assumption 1: (i) $R(.)$ is real-valued, continuously differentiable, and for every realized value $X \epsilon R_+$, strictly increasing in k and e (see Bashir, 1990).

(ii) $R(0, e, \theta, X) = R(k, 0, \theta, X) \geq 0 \quad \forall\ X \epsilon R_+$

(iii) $R_k > 0$, for $e > 0$, $R_e(.,.,.,.,.) > 0$, and $R_{ke}(.,.,.,.,.) > 0$.

For present purposes we assume that the probability of success of the risky project, $Pr(R_g) \epsilon [0,1]$, and the profit share ratio that goes to the bank is $s \epsilon [0,1]$.

In our model the profit share ratio is an exogenous variable because in most of the Middle Eastern countries the interest-free banking system is part of the overall banking system. This will result in a competition, on the one hand, between the conventional banks and the interest-free banks, and on the other, between the interest-free banks themselves. If the profit share ratio is not set at a reasonable rate, it will turn the borrowers away from the interest-free banks.

A rational holder of capital, in presence of Zakah tax, would seek the opportunity to invest that capital, or at least some part of it. At the same time, to keep the risks involved in investing capital to minimum he would like to find an ethical borrower to invest his capital with. It can be safely assumed that ethical borrowers would have strong moral commitment to repay their loans and remain faithful to the terms of their contracts.

5.3 Trust Contracts (Mudarabah)

We can see from the previous section that the autarky solution is not an optimal solution for the lender because his wealth will keep on declining due to Zakah payments. He would invest at least part of his wealth to compensate for these payments. In the presence of borrowers with workable investment projects, the lender sees an opportunity to invest the capital. When both a lender and a borrower reach an agreement on a praticular project, they have to decide two variables: the amount of capital (k) needed for the project, and the profit share ratio (s) for the lender.

At the beginning of the project, the borrower knows his ethics (high or low) and the amount of effort he will provide for the project (high or low). The lender, on the other hand, is not able to observe any of this. At the end of the investment period, everything will become known. The state of nature is observed, hence the investment outcomes will be as follows:

A) Good Investment (the state of nature is good)

Then $R = R_g$

where $R_g > k$

the lender's net wealth at the end of the investment period will be:

$$[k + s(R_g-k)(1-z_2) - z_1(w-k)] \qquad (2)$$

where k = his initial capital

s = profit share ratio goes to the lender or

bank (given), $0<s<1$

z_1 = tax rate on holding cash (2.5%)

z_2 = tax rate on net return, $z_2>z_1$

$z_2 \in [2.5\% - 20\%]$

Note, however, that with respect to z_2, initial capital invested is not taxable and that z_2 depends on the kind of investment which means that different projects may have different z_2.

The borrower's net wealth at the end of the investment period will be:

$$(1-s)(R_g-k)(1-z_2) \qquad (3)$$

where $(1-s)$ = profit share ratio goes to the borrower

By adding equation (2) and (3) we get the total net wealth (of both borrower and lender) at the end of investment period:

$$R_g - z_2(R_g-k) - z_1(w-k) \qquad (4)$$

This means that the total net wealth equals gross return minus the amount of tax on the revenue or return above the initial capital invested (net profit) minus the amount of tax on univested capital.

The net profit of the lender is given as follows:

$$s(R_g - k)(1 - z_2)$$

while the net profit of the borrower is given in equation (3). Since "s" is a constant, the two net profit equations show that the trust contract is a linear profit sharing contract. The Borrower will be encouraged to provide high effort to increase his net profit.

B) Bad Investment (state of nature is bad)

Then $R = R_b$

where $0<R_b \leq k$

$R_b<k$ means that the expected return is less than the initial capital invested by the lender. The lender's net wealth at the end of investment period will be:

$$R_b - z_1(w-k) \qquad (5)$$

Here the borrower will get nothing and will loose his effort and time. Hence equation (5) represents the net wealth of both the borrower and the lender.

Since we assume both risk neutrality for both the investor and the borrower, the investor has an expected utility (measured in some von Neumann-Morgenstern utility) equal to the expected value of his end of period wealth:

$$EU_L = \{k + s(R_g-k)(1-z_2) - z_1(W-k)\}Pr(R_g) + \{R_b - z_1(W-k)\}Pr(R_b) \qquad (6)$$

The borrower's expected utility is (additively separable) equal to his expected residual net gains:

$$EU_B = \{(1-s)(R_g-k)(1-z_2)\}Pr(R_g) - V(e,a) \qquad (7)$$

where $V(e,a)$ is the borrower's monetary disutility of high effort.

In most of the contract model, the effort variable plays a very important role since output depends directly on the effort. The incentive mechanism (payment) should be a function of the effort. In general, contract models we have the following:

1) If the effort is observable and does not affect the total outcome, then the social planner does not need to design an incentive payment schedule and the borrower will receive his reservation (fixed) level of income.

2) If the effort is observable, low and affects the total outcome, the result is the same as in (1) above.

3) If the effort is observable, high, and affects the total outcome the result is same as above and no incentive payment schedule is needed. However, the borrower must be paid above his reservation level of income.

4) If the effort is unobservable, low, and affects the total outcome then no incentive payment schedule is needed and the borrower will receive his reservation level of income.

5) If the effort is unobservable, high and affects the total outcome then the social planner's problem is to design an optimal incentive payment schedule to let the borrower accept the offer. The payment to the borrower is highest in this case.

We can see that since effort is observable, there will be no moral hazard problem and there is no need to pay the borrower a percentage of the net profit (situations one and two above). However, in situation three, since the borrower provides high effort, he is rewarded for that without sharing in the profit. In situations four and five, we have the moral hazard problem since the level of effort is unobservable. If the investor expects that the project needs low effort, there

is no need for incentives (situation four). On the other hand, if the investor expects that the project is hard to accomplish without providing a high level of effort then he has to design an optimal incentive payment schedule to encourage the borrower to provide this high level of effort (situation five). One of the incentives is to give him a share in the profit. In our model we will be dealing with situation five.

For mathematical simplicity, we assume specific functional forms for the total revenue and the monetary disutility functions. Let the production function (equation (1)) be specified as (see Ross (1973-74) for a similar linear function):

$$R = e(k-\theta) + X \qquad (8)$$

where the variable X is a forecast error, assumed to have a zero mean and independent of a. Let the borrower's monetary disutility function be (see Bashir, 1990):

$$V(e,a) = e^2(1-a) \qquad (9)$$

where $\frac{\partial V}{\partial e} = 2e(1 - a) > 0$ $\qquad$ $\frac{\partial V}{\partial a} = -e^2 < 0$

$\frac{\partial^2 V}{\partial e^2} = 2 > 0$ $\qquad$ $\frac{\partial^2 V}{\partial e \partial a} -2e < 0$

$\forall\ a<1$

This means that higher the ethics the lower the monetary disutility of effort.

Given equations (8) and (9), the borrower's expected

utility, which is equal to his expected net gain, can be written as:

$$EU_B = \{(1-s)(e(k-\theta)+X - k)(1-z_2)\}Pr(R_g) - e^2(1-a) \quad (10)$$

If $(k,s,;z_1,z_2)$ are such that the first order condition for incentive compatibility is satisfied, then the effort function $e(a,.,.)$ is differentiable almost everywhere. Then the trust contract $(k,s,;z_1,z_2)$ is then formulated to implement the effort function $e(a,.,.,.)$, or it induces the borrower to tell the truth about his ethics and the level of effort he is going to provide. Equation (10) is the truth-telling constraint which indicates that, given the state of nature X and borrower's ethics a, the optimal level of effort is undertaken. The optimal effort e^* is chosen to maximize the expected net gain of the borrower.

$$\frac{\partial EU_B}{\partial e} = [(1-s)(k-\theta)(1-z_2)Pr(R_g) - 2e(1-a) = 0$$

Solving for optimal e^* (equilibrium strategy) yields:

$$e^* = \frac{(1-s)(k-\theta)(1-z_2)Pr(R_g)}{2(1-a)} \qquad 0<a<1,\ Pr(R_g)\epsilon[0,1],\ e\epsilon\{e_L,e_H\} \quad (11)$$

The optimal effort provided by the borrower is function of Zakah tax on net profit, capital, technical skills, his ethics, and his share of profit. In particular, we have the following:

$$\frac{\partial e^*}{\partial(1-s)} = \frac{(k-\theta)(1-z_2)Pr(R_g)}{2\ (1-a)} \geq 0 \quad (12)$$

This means that the higher the profit share ratio of the borrower the higher will be his effort, or

$$\frac{\partial e}{\partial s} = \frac{-(k-\theta)(1-z_2)Pr(R_g)}{2(1-a)} \leq 0$$

This means that higher the share ratio of the profit goes to the investor the lower the effort supplied by the borrower.

$$\frac{\partial e^*}{\partial z_2} = \frac{-(1-s)(k-\theta)Pr(R_g)}{2(1-a)} \leq 0 \qquad (13)$$

That is, higher the Zakah tax rate on net return the lower the effort supplied by the borrower.

$$\frac{\partial e^*}{\partial k} = \frac{(1-s)(1-z_2)Pr(R_g)}{2\ (1-a)} \geq 0 \qquad (14)$$

This means that higher loan induces higher effort.

$$\frac{\partial e^*}{\partial \theta} = \frac{-(1-z_2)(1-s)Pr(R_g)}{2(1-a)} \leq 0 \qquad (15)$$

This means that the higher the specific skills the borrower has for a particular project the lower the effort he needs to accomplish the task.

$$\frac{\partial e^*}{\partial a} = \frac{(1-s)(1-z_2)(k-\theta)Pr(R_g)}{(1-a)^2} \geq 0 \qquad (16)$$

Also, the higher the ethics of the borrower the higher will be his effort. Increase in ethics implies an increase in return to effort.

In short, we have the following:

$$e^* = F(\underset{(-)}{s},\ \underset{(+)}{k},\ \underset{(-)}{\theta},\ \underset{(+)}{a},\ \underset{(-)}{z_2})$$

Note that specific skills (θ) is independent of the borrower's ethics (a).

The intuition is that given his ethics "a" and the trust contract (k, s, z_1, z_2), the borrower selects the optimal level

of effort such that his marginal expected gain is equal to the marginal cost of effort. Note that from the borrower's point of view, z_1 on uninvested capital is not that important since his initial capital is zero.

It is important to note here that in less developed countries it is not very easy to get a loan. When a borrower does get a loan, it is a big achievement for him and he has to take advantage of the opportunity. Hence it is very likely that he will put extra effort in the project to make it successful.

Now if we substitute equation (11) in equation (10), we get the borrower's optimal utility:

$$EU^*_B = \frac{(1-s)^2(1-z_2)^2(k-\theta)^2Pr^2(R_g)}{4(1-a)} - (1-s)(1-z_2)(k)Pr(R_g) \quad (17)$$

To get the optimal total return R, we substitute the optimal effort e^*, equation (11), into equation (8):

$$R^* = \frac{(1-s)(1-z_2)(k-\theta)^2Pr(R_g)}{2(1-a)} + X \ , \quad a, \ 0<a<1 \quad (18)$$

We differentiate equation (18) with respect to profit share of the borrower (1-s), z_2, k, and a. The results are given as follows:

$$\frac{\partial R}{\partial(1-s)} = \frac{(1 - z_2)(k - \theta)^2Pr(R_g)}{2(1 - a)} \geq 0 \quad (18A)$$

$$\frac{\partial R}{\partial z_2} = \frac{-(1 - s)(1 - z_2)(k - \theta)^2Pr(R_g)}{2(1 - a)} \leq 0 \quad (18B)$$

$$\frac{\partial R}{\partial k} = \frac{(1 - s)(1 - z_2)(k - \theta)Pr(R_g)}{(1 - a)} \geq 0 \quad (18C)$$

$$\frac{\partial R}{\partial a} = \frac{(1 - s)(1 - z_2)(k - \theta)^2Pr(R_g)}{(1 - a)_2} \geq 0 \quad (18D)$$

Hence the higher the profit share for the borrower, the more he will exert effort and produce a higher return (equation (18A)). The higher the Zakah tax on net profit, the lower the effort (equation (13)), hence lower return (equation (18B)). More capital invested by the lender will result in higher return (equation (18C)). Finally, the higher the ethics of borrower, the higher the effort (equation (16)), hence higher the return (equation (18D)).

Given k, s, z_1, z_2, and θ, if the probability of success and private information (ethics, effort) are known, the total return can be determined. To compute his expected utility, the lender uses his prior probability assessment of the borrower's ethics. Given his belief $P(a_j)$, j=1,2, the lender's expected utility is (Bashir, 1990):

$$EU_L = \sum_{j=1}^{2} P(a_j) EU_L(k,s|a_j) \qquad (19)$$

where $EU_L(k,s|a_j) = [k + s(R_g-k)(1-z_2) - z_1(W-k)]Pr(R_g)$

$$+ [R_b - z_1(W-k)]Pr(R_b)$$

$$= [k + s(R_g-k)(1-z_2)]Pr(R_g) + R_b(1-Pr(R_g))$$

$$- z_1(W-k)$$

$$= k(1-z_2)(1-s)Pr(R_g) - z_1(W-k)$$

$$+ \frac{(1-s)(1-z_2)(k-\theta)^2 Pr(R_g)}{2(1-a)} [s(1-z_2)Pr(R_g) + (1-Pr(R_g))]$$

Since the expected utilities of both lender and borrower are known and well-defined, we need to characterize the optimal trust contracts that maximize the social welfare function.

Also the Zakah tax paid by the lender on the uninvested capital and zakah tax paid on gross return above the initial capital will feed back in the social welfare function. Given the zakah tax rates z_1 and z_2, if the social planner were able to observe the ethics of the borrower as well as his level of effort, he would choose an optimal inventive contract (k,s,z_1,z_2) to maximize the expected social welfare:

$$\text{Max } SW = EU_L + EU_B + z_1(W-k) + z_2(R_g-k) \qquad (20)$$

where $z_1 = 2.5\%$

$$z_1 \leq z_2,$$

subject to voluntary participation constraints or to individual rationality constraints:

$$EU_L \geq W(1-z_1) \qquad (21)$$

$$EU_B \geq \text{Max}_e E\{R(0,e,\theta,X)\} \quad \text{if } k=0 \qquad (22)$$

Note that the term $[z_1(W-k) + z_2(R_g-k)]$ represents the government revenue.

The voluntary participation constraints (21) and (22) indicate that to obtain the participation of both the lender and the borrower, their expected utilities must be greater or at least equal to autarky level (Reservation level of income). This means that the social planner must ensure that the investor gets greater than $W(1-z_1)$ or at least equal to it in order to be willing to participate. We assume that the borrower's initial wealth equals zero but this does not mean that he has no reservation level of income. He may have other opportunities and alternatives available to him that gives him

some reservation level of income. This can be from getting loan from other investors or working at other jobs. If the social planner has full information about both the borrower and the lender the solution to equation (20), if it exists, will be the first best and as a result there is no need for the incentive issue. But since the borrower's ethics are not observable, the social planner uses his prior beliefs to compute the borrower's expected net gain.

From the social planner's point of view, this expected net gain is written as (Bashir, 1990):

$$E_a EU_B = \sum_{j=1}^{2} P(a_j)\ EU_B(a_j) \qquad (23)$$

where the operator "E_a" indicates that expectations are taken with respect to a.

Now substitute equation (23) into social welfare function, equation (20), we get:

$$\text{Max } SW_p = EU_L + E_a EU_B + z_1(W-k) + z_2(R_g-k) \qquad (24)$$

$$\text{s.t.} \quad (1)\ EU_L \geq W(1-z_1) \qquad (21)$$

$$(2)\ EU_B \geq \text{Max}_e E\{R(0,e,\theta,X)\} \qquad (22)$$

In less developed countries there is a high competition among borrowers to get loans. This will lead to the design of trust contracts such that the lender's participation constraint, equation (21), are non-binding in each period, i.e. $EU_l > W(1-z_1)$. Moreover, if the profit-sharing ratio is chosen to yield a socially optimal level of investment, equation (22), the borrower's participation constraint, also holds with equality.

So the objective now is to maximize the social welfare function subject to binding and non-binding participation constraints.

The Lagrangian function will now be:

$$L = \text{Max} \sum_{j=1}^{2} P_j EU_L(a_j) + \sum_{j=1}^{2} P_j EU_B(a_j) + z_1(W-k) + z_2(R_{gj}-k)$$

$$+ N(EU_B(a_j) - \text{Max}_e E\{R(0,e,\theta,X)\}) + u[EU_L - W(1-z_1)] \quad (25)$$

Differentiating with respect to "k", we have:

$$\frac{\partial}{\partial k} \sum_{j=1}^{2} P_j EU_L(a_j) + \frac{\partial}{\partial k} \sum_{j=1}^{2} P_j EU_B(a_j) + \frac{\partial}{\partial k} z_1(W-k) + \frac{\partial}{\partial k}(R_{gj}-k)$$

$$+ \frac{\partial}{\partial k} N(EU_B(a_j) - \text{Max}_e E\{R(0,e,\theta,X)\} + \frac{\partial}{\partial k}(EU_L - W(1-z_1) = 0 \quad (26)$$

Differentiating with respect to s, we have:

$$\frac{\partial}{\partial s} \sum_{j=1}^{2} P_j EU_L(a_j) + \frac{\partial}{\partial s} \sum_{j=1}^{2} P_j EU_B(a_j) +$$

$$+ \frac{\partial}{\partial s} N(EU_B(a_j) - \text{Max}_e E\{R(0,e,\theta,X)\} + \frac{\partial}{\partial s} u(EU_L - W(1-z_1) = 0 \quad (27)$$

Note that the third and fourth terms in the lagrangian equation are zero (since $\text{Max}_e E\{R(0,e,\theta,X)\}=0$). Then the first order conditions reduce to:

$$\frac{\partial}{\partial k} \sum_{j=1}^{2} P_j EU_L(a_j) + \frac{\partial}{\partial k} \sum_{j=1}^{2} P_j EU_B(a_j) = z_1 + z_2 \quad (26')$$

or

$$\frac{\partial EU_L}{\partial k} + \frac{\partial E_a EU_B}{\partial k} = z_1 + z_2 \quad (26')$$

$$\frac{\partial}{\partial s} \sum_{j=1}^{2} P_j EU_L(a_j) + \frac{\partial}{\partial s} \sum_{j=1}^{2} P_j EU_B(a_j) = 0 \quad (27')$$

or

$$\frac{\partial EU_L}{\partial s} + \frac{\partial E_a EU_B}{\partial s} = 0 \qquad (27')$$

Also, we can write equation (21) and (22) as follows:

$$EU_L > W(1-z_1) \qquad (21')$$

$$EU_B(a_j) = Max_e E\{R(0,e,\theta,X) = 0 \qquad (22')$$

The four equations, (26'), (27'), (21'), and (22') solve for optimal level of capital invested given the profit sharing ratio. This means that if the objective function has an interior maximum, these four equations characterize the optimal investment level k as a function of the profit sharing ratio (s), tax on net profit (z_2), and the borrower's ethics and technical skills. Solving equation (22') for the optimal level of investment, we get:

$$\frac{\partial EU^*_B}{\partial k} = \frac{2(1-s)^2(1-z_2)^2(k-\theta)Pr(R_g)}{4(1-a)} - (1-s)(1-z_2)Pr(Rg) = 0 \quad (28)$$

then

$$K^*_{PLS}(optimal) = \frac{2(1-a)}{(1-s)(1-z_2)Pr(R_g)} + \theta \qquad (29)$$

$$\forall\ s, a \quad s\epsilon[0,1],\ 0<a<1,\ Pr(R_g)\epsilon[0,1]$$

From equation (29) we can see that higher s will be an incentive for the lender to invest more, whereas higher z_2 will make him invest less.

To solve for the optimal social welfare function under the trust contract, substitute K^* (equation (29)) in equation (24):

$$SW^*_p = \sum_{j=1}^{2} P_j EU_L(K^* | a_j) + \sum_{j=1}^{2} P_j EU_B(K^* | a_j)$$

$$+ z_1(W-k^*) + z_2(R_{gj}-k^*) \qquad (30)$$

$$= \sum_{j=1}^{2} P_j [k^*(1-z_2)(1-s)Pr(R_{gj}) - z_1(W-k^*)$$

$$+ \frac{(1-s)(1-z_2)(k^*-\theta_j)^2 Pr^2(R_{gj})}{2(1-a)} \quad (s(1-z_2)Pr(R_{gj}))$$

$$+ (1 - Pr(R_{gj})]$$

$$+ \sum_{j=1}^{2} P_j [\frac{(1-s)^2(1-z_2)^2(k^*-\theta_j)^2 Pr^2(R_{gj})}{4(1-a_j)}$$

$$- (1-s)(1-z_2)k^* Pr(R_{gj})]$$

$$+ z_1(W-k^*) + z_2(R_{gj}-k^*)$$

Note that the second summation in the expression is zero since it is the participation constraint. The optimal social welfare function will reduce to:

$$SW^*_p = \sum_{j=1}^{2} P_j [k^*(1-z_2)(1-s)Pr(R_{gj}) - z1(W-k^*)$$

$$+ \frac{(1-s)(1-z_2)(k^*-\theta_j)^2 Pr(R_{gj})}{2(1-a)}$$

$$s(1-z_2)Pr(R_{gj}) + (1-Pr(R_{gj})] + z_1(W-k^*) + z_2(R_{gj}-k^*) \quad (31)$$

Substitute optimal investment equation (29) into equation (31), we get:

$$SW^*_p = \frac{2}{(1-s)} \sum_{j=1}^{2} P_j(1-a_j) + (1-s)(1-z_2) \sum_{j=1}^{2} P_j \theta_j Pr(R_{gj})$$

$$+ \frac{2}{(1-s)(1-z_2)} \sum_{j=1}^{2} P_j \frac{(1-a_j)}{Pr(R_{gj})} [1-Pr(R_{gj})+z_1] + \sum_{j=1}^{2} P_j(z_1\theta_j - z_1 W)$$

$$+ z_1W + z_2R_{gj} - \theta(z_1+z_2) - \frac{2(1-a_j)}{(1-s)(1-z_2)Pr(R_{gj})}(z_1+z_2) \quad (32)$$

Equation (32) is the maximum social welfare under the trust contract.

5.4. Standard Debt (Riba) Contract

Following the notion of the previous section, at the beginning of the period, a lender is endowed with W units of wealth, where $0<W<\infty$. Also, he is wiling to lend part of his wealth to a borrower at a fixed rate of interest for a given period of time. If the project succeeds, the lender receives his initial loan (k) plus an ex ante agreed-upon interest (r) and the borrower receives the residual. If the project fails, the lender gets less than his invested capital while the borrower looses his effort and time. When realized, the returns are shared between the lender and the borrower as follows:

A Good Investment (State of Nature is Good)

In this situation the following holds:

$R = R_g$ where $R_g > k$

The lender's net return at the end of the investment period will be:

$$(k + rk)(1 - t) = (1 + r)k(1 - t) \quad (33)$$

where k = initial capital invested, $k\epsilon[0,W]$

r = fixed rate of interest

t = tax rate

The lender's net wealth at the same time would be:

$$(W - k) + (1 + r)k(1 - t) \qquad (33b)$$

The borrower's net return at the end of the investment period will be:

$$(R_g - (1+r)k)(1 - t) \qquad (34)$$

The above expression is also his net wealth as his initial wealth is zero.

The total net return of both the lender and the investor at the end of the investment period will be:

$$R_g(1 - t)$$

and the total net wealth would be:

$$(W - k) + R_g(1 - t)$$

B. Bad Investment (state of nature is bad)

Then $R = R_b$

where $0<R_b<k$

The lender's net return will be R_b while the borrower gets nothing, he looses his effort and his time.

Assuming the risk netrality for both, the lender's expected utility function at the end of investment period will be:

$$EU_L = [(1-r)k(1-t)]Pr(R_g) + Pr(R_b)(R_b) \qquad (35)$$

Under good investment the net return to the borrower on his project is Max $(R-(1+r)k)(1 - t)$. Then his end of period expected net gain is:

$$EU_B = [(R_g-(1+r)k)(1-t)]Pr(R_g) - V(e,a) \qquad (36)$$

Using the same total return function as before:

$$R = e(k-\theta) + X \tag{8}$$

and the same disutility of high effort V

$$V(e,a) = e^2(1-a) \tag{9}$$

Substituting equations (8) and (9) in equation (36), borrower's expected utility can be written as:

$$EU_B = [(e(k-\theta) + X - (1+r)k)(1-t)]Pr(R_g) - e_2(1-a) \tag{37}$$

Differentiating equation (37) with respect to e, we solve for e^*:

$$\frac{\partial EU_B}{\partial e} = (k-\theta)(1-t)Pr(R_g) - 2e(1-a) = 0$$

$$\text{or} \quad e^* = \frac{Pr(R_g)(1-t)(k-\theta)}{2(1-a)} \tag{38}$$

where $0<a<1, \quad 0<Pr(R_g)<1$

Now to obtain the optimal return function, substitute equation (38) in equation (8):

$$R = \frac{Pr(R_g)(1-t)(k-\theta)^2}{2(1-a)} + X \tag{39}$$

where $0<\theta<1, \quad 0<a<1$

Also, substituting equation (38) in equation (36), the borrower's optimal utility under standard debt contract is:

$$EU^*_B = \frac{Pr(R_g)^2(1-t)^2(k-\theta)^2}{4(1-a)} - (1+r)(1-t)k\ Pr(R_g) \tag{40}$$

Given lender's prior belief about the borrower's ethics, his expected utility will be:

$$EU_L = \sum_{j=1}^{2} P_j\left(\frac{Pr(R_g)(1-t)(k-\theta)^2}{2(1-a_j)}(1-Pr(R_g)) + (1+r)(1-t)k\ Pr(R_g)\right) \tag{41}$$

where $P_j = P(a_j)$, $j=1,2$

Using social planner's subjective belief, expected utility of the borrower can be written as:

$$E_a EU_B = \sum_{j=1}^{2} P_j \left[\frac{Pr(R_g^2)(1-t)^2(k-\theta)^2}{4(1-a_j)} - (1+r)(1-t)k\ Pr(R_g) \right] \quad (42)$$

where $0<a_1<a_2<1$

Since we have a well defined expected utility function of both the lender and the borrower, the objective is to maximize the social welfare function:

$$\text{Max}_{(k,r)}\ SW_s = EU_L + E_e EU_B + tR_g \quad (43)$$

$$\text{s. t.} \quad EU_L \geq W \quad (44)$$

$$EU_B \geq \text{Max}_e E\{R(0,e,\theta,X\} \quad (45)$$

As before, the participation constraint (45) is binding in each period while the consnstraint (45) is non-binding. Then the first order condition to the above problem would be:

$$\frac{\partial EU_L}{\partial k} + \frac{\partial E_e EU_B}{\partial k} = 0 \quad (46)$$

$$EU_B = \text{Max}_e E\{R(0,e,\theta,X)\} \quad (47)$$

$$EU_L > W \quad (48)$$

Solving equation (47) for the optimal level of investment, we get:

$$k^*_{SDC} = \frac{2(1+r)(1-a)}{Pr(R_g)(1-t)} + \theta \quad (49)$$

Now to have a well defined social welfare function, we substitute equations (41) and (42) in equation (43), then

$$SW^*_s = \sum_{j=1}^{2} P_j\left[\frac{Pr(R_{gj})(1-t)(k-\theta_j)^2}{2(1-a_j)}(1-Pr(R_{gj})+(1+r)(1-t)k\ Pr(R_{gj})\right]$$

$$+ \sum_{j=1}^{2} P_j\left[\frac{Pr(R^2_{gj})(1-t)^2(k-\theta)^2}{4(1-a_j)} - (1+r)(1-t)k\ Pr(R_{gj})\right] + tR_g \quad (50)$$

Again the second term or summation in the above expression is zero since it is the participation constraint. The optimal social welfare function will reduce to:

$$SW^*_s = \sum_{j=1}^{2} P_j\left[\frac{Pr(R_{gj})(1-t)(k-\theta_j)^2}{2(1-a_j)}(1-Pr(R_{gj})+(1+r)(1-t)k\ Pr(R_{gj})\right]$$

$$+ tR_g \quad (51)$$

Now substitute for optimal K^*_{SDC} equation (49) into equation (51), we get:

$$SW^*_s = \frac{2(1+r)^2}{(1-t)} \sum_{j=1}^{2} \frac{P_j(1-a_j)}{Pr(R_g)}[1-tPr(R_g)] + (1+r)(1-t) \sum_{j=1}^{2} P_j Pr(R_g)\theta_j$$

$$+ tR_g \quad (52)$$

Equation (52) is the maximum social welfare under standard debt contract (riba contract).

5.5. Welfare Analysis

The objective of this section is to compute and compare the optimal social welfare function under both kind of contracts, the trust (profit-sharing) contract, equation (32), and the standard debt contract, equation (52). Before we do that, it is important to note that in less developed countries

(e.g. Jordan, Egypt, Sudan) 10-15% of the population controls more than 75% of the country's wealth. By forcing tax on uninvested capital and encouraging profit-loss sharing, financial contracts will shift part of that wealth from the rich to the poor or the middle class (income equality). This kind of contract will also help new graduate students to start their jobs. At the international level, implementing this kind of contract will mobilize the resources from the rich countries (the capital) to the poor countries (lacking in capital but rich in human resources). Benefits, however, will be shared by both.

We will now go over some numerical analysis to compare and evaluate the value functions of the social welfare under the two kinds of contracts. These value functions satisfy the following conditions (see Bashir, 1990):

$$\sum_{j=1}^{2} P_j = 1 \qquad 0<a_1<a_2<1 \quad \text{and} \quad 0<Pr(R_{gj})<1$$

The data for the profit-loss sharing contract was obtained from the Annual Reports of Interest-Free Banks of five Middle East countries, namely Jordan, U.A.E, Egypt, Sudan, and Kuwait. The data for the standard debt contract was taken from International Financial Statistics Year Book for the same period for Egypt, U.A.E., Sudan, and Kuwait. The data for Jordan, however, was obtained from the Annual Report of Central Bank of Jordan. The values of the interest range between 9% and 15.56% and the resulting numerical values of

social welfare under debt contract (equation (52)) varied between 18.98 and 19.46. This result was obtained with a tax rate of 21%.

In the case of profit sharing contract, the profit sharing ratio range is between 12% and 19.62%. So, the values for the social welfare (equation (32)) varied between 21.98 and 22.46, where the average Zakah tax rate (z_2) was 18%.

From the above we can see that the social welfare under the profit-loss sharing system is higher than the social welfare under the standard debt system (see Figure 1 below). This is for two reasons. First is the Zakah tax on uninvested capital. Second, since interest is forbidden in Islam, the devoted Muslim would be more than willing to support an institution through which they have an opportunity to invest their capital without involving themselves in the interest.

We can see from Tables 1 and 2 that the social welfare function reaches its maximum at the same values of P_j, a_i (i=1,2; j=1,2) and θ=0.5 under either kind of contract. P_1=1 indicates that when offering the contract the lender does not differentiate between types of people or the borrowers. Higher values of θ, a, and e indicate increasing returns to technical skills and education, ethics and effort.

TABLE 5.1

MAXIMUM VALUES OF SOCIAL WELFARE

UNDER PROFIT-LOSS CONTRACT

S(%)	$Pr(R_g)$	P_1	P_2	a_1	a_2	θ	SW^*_p
12	.5	1	0	.3	.5	.5	21.98
13	.5	1	0	.3	.5	.5	22.01
15	.5	1	0	.3	.5	.5	22.05
15.2	.5	1	0	.3	.5	.5	22.08
16.11	.5	1	0	.3	.5	.5	22.11
16.5	.5	1	0	.3	.5	.5	22.13
16.94	.5	1	0	.3	.5	.5	22.18
17.44	.5	1	0	.3	.5	.5	22.24
18.23	.5	1	0	.3	.5	.5	22.32
18.56	.5	1	0	.3	.5	.5	22.37
19.12	.5	1	0	.3	.5	.5	22.42

TABLE 5.2

MAXIMUM VALUES OF SOCIAL WELFARE UNDER STANDARD DEBT CONTRACT

r(%)	$Pr(R_g)$	P_1	P_2	a_1	a_2	θ	SW^*_s
9	.5	1	0	.3	.5	.5	18.98
9.6	.5	1	0	.3	.5	.5	19.01
10	.5	1	0	.3	.5	.5	19.05
10.5	.5	1	0	.3	.5	.5	19.08
10.8	.5	1	0	.3	.5	.5	19.11
11.1	.5	1	0	.3	.5	.5	19.13
11.82	.5	1	0	.3	.5	.5	19.18
12.61	.5	1	0	.3	.5	.5	19.24
13.74	.5	1	0	.3	.5	.5	19.32
14.33	.5	1	0	.3	.5	.5	19.37
15.13	.5	1	0	.3	.5	.5	19.42
15.56	.5	1	0	.3	.5	.5	19.46

22.5
22
21.5
21
20.5
20
19.5
19
18.5
8
10
12
14
16
18
20
SW_P
SW_S
PROFIT SHARE RATIO AND INTEREST RATE %

5.6. Investment Analysis

Using the same data as for welfare analysis, we solve equations (29) and (49) to get the optimal level of investment under each type of contract.

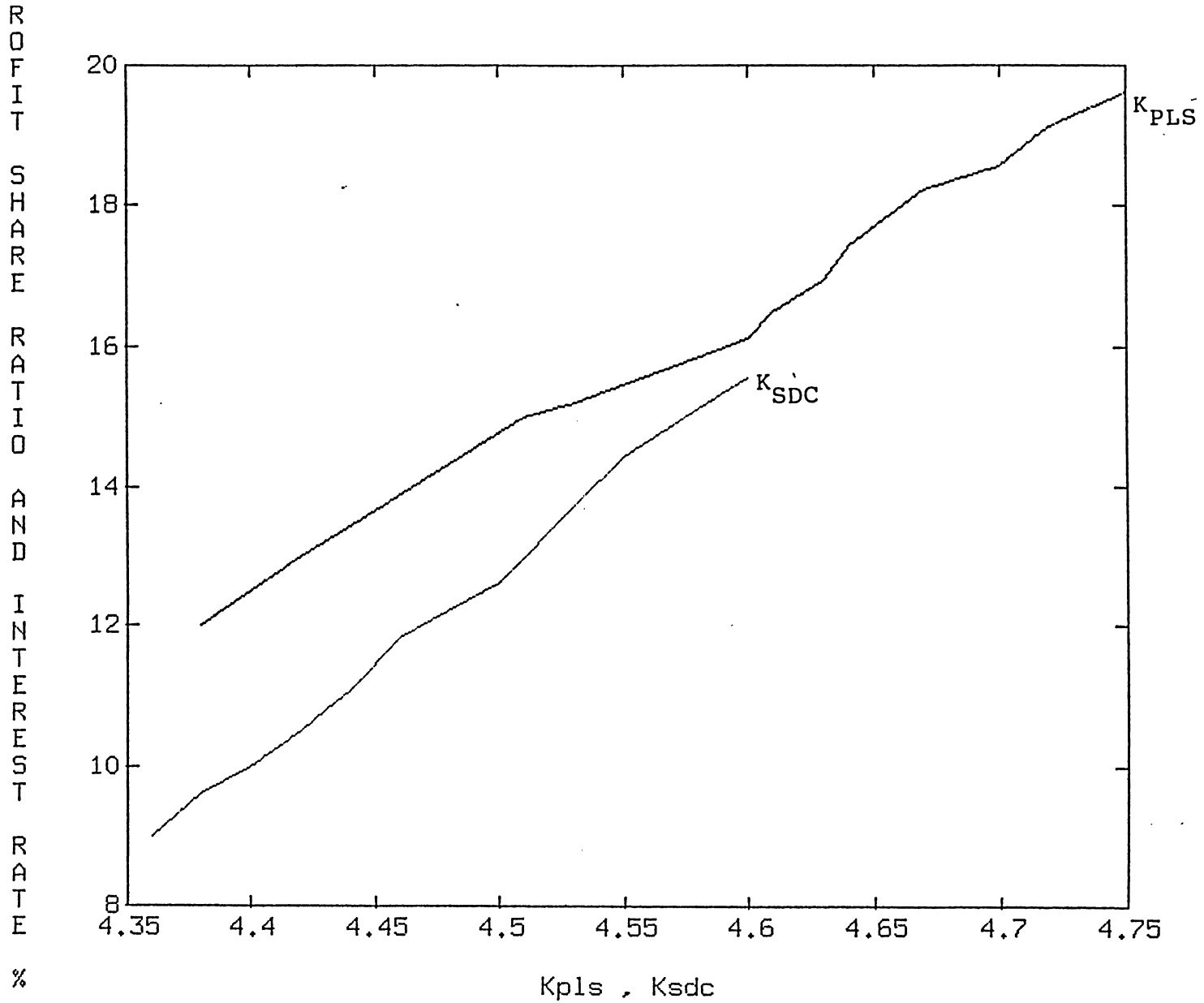
The results show no evidence that the investment level under a trust contract is lower than standard debt contract. From Table 3 we see that investment under standard debt contract varies between 4.36 and 4.60, while in the case of a trust contract the investment varies between 4.38 and 4.75. This solution is obtained under the probability of success, $P_r(R_g)$, given a and θ.

Table 3 also shows that there is not much difference between the levels of investment under either kind of contract. Again, the Zakah tax on uninvested capital plays its part in encouraging investment. The other important reason is that Zakah tax (z_2) is imposed only on investment returns and not on the amount invested, whereas under debt contract, tax is imposed on both the capital invested and the return on this investment. Note that the maximum value for z_2 is 20%, while the average tax rate on gross investment in most developed countries is 30-35%.

TABLE 5.3

MAXIMUM VALUES OF INVESTMENT UNDER PROFIT-LOSS SHARING AND STANDARD DEBT CONTRACTS

r(%)	K^*_{SDC}	s(%)	K^*_{PLS}
9	4.36	12	4.38
9.6	4.38	13	4.42
10	4.40	15	4.51
10.5	4.42	15.2	4.53
10.8	4.43	16.11	4.66
11.1	4.44	16.5	4.61
11.82	4.46	16.94	4.62
12.61	4.50	17.44	4.64
13.74	4.54	18.23	4.67
14.33	4.55	18.56	4.70
15.13	4.58	19.12	4.72
15.56	4.60	19.62	4.75


ROFIT SHARE RATIO AND INTEREST RATE %
20
18
16
14
12
10
8
4.35
4.4
4.45
4.5
4.55
4.6
4.65
4.7
4.75
Kpls , Ksdc
K_{PLS}
K_{SDC}

It is clear from the above analysis that the optimal choice should be the trust contract. Investment level is not at all affected and at the same time a higher level of social welfare is achieved. The underlying assumptions in the trust contract are very important and must be realized for the successful result.

If we compare the results of social welfare analysis of our model with that of Bashir's (1990) model, we note that difference in the optimal social welfare levels under the two contracts is much smaller in our model and rather big in Bashir's case. This can be attributed to the following:

1) In our model, the Zakah tax z_1 has been imposed on only the uninvested part (W - k) of the total wealth (W) in the social welfare function. Bashir, on the other hand, has imposed this Zakah tax on the invested capital (k).

2) Bashir in his model has not imposed any tax on the net return. In our model, we have imposed a tax on net return also (z_2).

The model that we have discussed in this chapter was a one-period loan (both trust and debt) contract. It can be extended to a two-period contract as a future research project. We have also assumed risk neutrality for both the lender and the borrower. The two-period contract should be studied under both risk neutrality and risk aversity.

The profit sharing ration (s) in our model was given. It can, however, be endogenized to see how either riskiness of

the project or bargaining would determine the ratio. Another important variable that needs further research is the level of effort. We have assumed a discretely distributed effort level with only two (high or low) levels possible. It can, however, be assumed to have a continuous probability distribution (e.g. normal distribution).

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CHAPTER SIX

PERFORMANCE OF THE JORDANIAN INTEREST-FREE BANK

6.1 Introduction

As we explained in Chapter Four that one of the main objective of the interest-free bank is to meet the economic and social needs in the field of banking services, financing and investment operations on a non-interest basis. This can be done by "expanding the extent of dealings with the banking sector by offering non-interest banking services with special emphasis on introducing services designed to revive various forms of collective social responsibility or basis of mutual benefit" (interest-free banks' laws, section six). The bank should provide necessary financing to meet the requirements of the various sectors, particularly those which are not likely to benefit from riba banking facilities. Also, the bank should develop means to attract funds and saving and channelling them into participation in non-usurious banking investment.

6.2 The Bank's Expansion

The bank pursued its branching policy which aims at extending the bank's operation, facilities and services to all citizens throughout the country.

TABLE 6.1

Year	80	81	82	83	84	85	86	87	89	90	91
No. of Branches	5	6	9	9	12	13	14	14	19	21	26

The interest-free bank of Jordan started with two branches. From the above table we can see that there is significant increase in the size of the bank. At the end of 1991 the total number of the bank branches reached 26, while in 1985 there were 13 branches, i.e. in five years the bank doubled its size. By comparison, expansion of the interest-free bank has been much more rapid than other banks in Jordan.

6.3 Economic Stability and Jordanian Interest-Free Bank

In Chapters Two and Three we explained the structure of the Jordanian economy with an emphasis on the financial structure. The heavy dependence on outside world for many of the resources makes Jordan's position very critical.

In the last one decade, the Middle East region has witnessed two major wars. First one was the Iran-Iraq war. Jordan being the main exporter to Iraq, large amount of investment was geared toward the transportation industry. When the war stopped, the price of transportation equipments fell sharply with a damaging effect on the economy. The second war that took place recently was between Iraq and the rest of the world. Since Jordan took a political stand favoring Iraq's position, a large amount of Jordanian workers

working in other Middle East countries were fired. Jordan's economy depended heavily on the remittances made by these workers. When these workers came back to the country they brought with them their savings and their pension money. This caused both excess supply of funds and a high rate of unemployment.

All these factors created economic and political instability in the region (Middle East) with a direct effect on Jordan. This instability and uncertainty had a negative impact on investment affected the banking system including the Jordan interest-free bank. Also, because of the economic difficulties, financial market became much more competitive. Besides the interest-free bank in Jordan, there are 21 commercial banks, six specialized credit institutions, five financial companies, and several non-bank financial institutions. The overall competition among all these financial institutions made it very difficult for any one of them to achieve any significant success. The fact that riba banks are well established made it even more difficult for the interest-free bank to perform well under the circumstance of uncertainty when a fixed return, even if it is low, is likely to be preferred over non-guaranteed return and a share in the risk.

More specifically, the prevailing economic environment made it almost impossible for the interest-free bank to operate its financing through Mudarabah (trust) and Musharakah (equity)

contract (see next section for more details).

6.4 Factors Inhibiting the Performance of the Interest-Free Bank

As mentioned earlier, it was difficult, if not impossible, for the bank to certain kind of operations because of the prevailing economic situation. The bank, as such, is acting in a way not to take any kind of risks. This left the bank to operate mainly through Murabaha (cost plus trade) activity with very small engagement in equity and trust kinds of contracts. It is difficult to see this in the banks's annual report, as only the total amount invested in all three kinds of contracts is reported without breaking down the total investment in each category.

Even in case of Murabaha, the way the bank carries out the contract between itself and a potential borrower could open the door for riba involvement. Let's take the example of a potential borrower who wants to buy a car. He goes to the bank and expresses his desire and explains what kind of car he wants to buy. The bank will then contact a car dealer to find the price of the car, let's assume the price of the car is $10,000. The bank will come back to the borrower and sell the car to him for, say, $12,000. This kind of mark up is allowed from religious point of view. However, the problem is that the bank does not own the car while it is writing the loan contract with the borrower, the car is still owned by the car

dealer. Also, the title of the car is written in the name of the bank and not the borrower. Another issue that may arise is how the bank decides on the amount of the mark-up. There is a danger that the bank might use some prevailing interest rate to calculate this mark-up amount.

Since the bank runs most of its operation through this one kind of contract, it has had an unfavorable reputation among people. Also, working only with Murabaha contracts bank will have to eliminate too many of the big projects that can not be financed without mainly equity financing.

TABLE 6.2

Method of Financing By Jordan Interest-Free Bank (%)

Year	Murabaha (Cost plus Trade)	Equity, Trust and Others	Total
1984	81.33	19.67	100
1985	79.04	20.06	100
1986	79.60	20.40	100
1987	80.00	20.00	100

Source: See Ramadan Shallah (1989).

Even though interest is forbidden from Islamic point of view and the interest-free bank does promise not to involve in any kind of activity involving interest, Section Five of the banks's law reads, "The obligation of the bank to avoid usury, whether in taking or giving shall be absolute in all cases and

activities. Any regulations, rules or instructions which the bank may issue in violation of this obligation shall have no legal effect whether for or against the bank."

Another factor that plays a role in bank not being able to perform as efficiently as it should is the non-Islamic aspects of the environment under which the bank runs its business. This environment, even though Jordan is a Muslim country, does not reflect Islam completely. The absence of a good Islamic government in the country is of main concern. The government sometimes put too many restrictions in establishing a complete interest-free bank. For example, following is comment on Al-Rajhi Bank for Investment and Commerce, an Islamic bank, in Saudi Arabia:

> The Al-Rajhi Bank for Investment and Commerce, the largest Saudi money-changer which recently became a bank. Curiously enough, the Saudi authorities do not allow Al-Rajhi to call itself an Islamic bank (probably for fear of engendering speculation as to the unIslamic nature of interest-based banks in the kingdom), but that is how it operates - handling large volumes of trade finance through its London office. [Financial Times, September, 1989]

Another problem faced by the interest-free bank is from the Tax department of the Government which taxes this bank in same way as any other conventional bank. As an interest-free bank it ought not to be taxed as its profit is actually owned by its depositors. These depositors will pay the Zakah tax or other income tax, but the bank should not be paying any. Hence in the present system the depositors are being taxed twice on their profit shares.

6.5 Sources of Funds

The sources of funds for the Jordanian Islamic banks can be characterized by the following:

Part I	Part II
Deposits	Equity
A) Trust Account	A) Capital
i) Current Account	
ii) Demand Account	
B) Joint Investment Account	B) Reserves
i) Saving Account	i) Legal Reserve
ii) Notice Account	ii) Voluntary Reserve
iii) Fixed Account	iii) Special Reserve
C) Specific Investment Accounts	

Deposit Accounts These are the funds (cash) which are paid by depositors to the bank to enter in account on the basis of setting off between payments and withdrawals. These accounts include the following:

(i) Trust Deposit Accounts Cash deposit by the customer and received by the bank, where the bank is fully authorized to use the cash at its own responsibility and risk in respect to loss or gain and which is not subject to any conditions for depositing or withdrawing. These accounts include two kinds: current accounts and demand accounts. The current accounts in the Jordan interest-free bank operates in the same way as it

does in conventional banking system. The interest-free bank is allowed to use the outstanding balance of the current account funds to finance short-term free loans to other customers and to finance projects for profit generation provided that the profit made belongs to the bank (Shallah , 1989).

Joint Investment Accounts These include cash deposits received by the bank from customers willing to participate with the bank in multilateral and continuous investment and financing operations. However, such customers (depositors) will receive certain percentage of the annual net gain (profit) realized in accordance with the conditions of the account under which they are entered. These accounts include Saving, Notice and Fixed accounts.

Specific Investment Accounts These accounts obtained cash deposits received by the bank from customers willing to appoint the bank as agent for investment of these cash deposits in specific projects on the basis that the bank will receive percentage of the net profit. The bank, however, will not bear any share of the loss, if it occurs, if it is not found at fault.

The second major source of funds is equity which includes capital and provision or reserves:

Capital The capital of Jordanian interest-free bank consists of four million JD divided into four million shares. Also:

> Shares which are not covered by the founders shall be offered for public subscription in accordance

with the provisions of the companies law. The total number of shares owned by any one shareholder may not exceed five percent of the capital, unless the excess results from inheritance by operation of the law. (Law of the Bank, Section 9)

Reserves Within the Jordanian interest-free bank there are three kinds of reserves: Legal, Voluntary and Special. Legal reserves are added to annually by 10 percent of the net profits until its balance equals the paid up capital. Voluntary reserves are determined by the management. The annual amount transferred to this reserve fund must not exceed 20 percent of the net profit. Special reserves are allocated to meet any commitments or losses incurred by the specific investments of the bank (Shallah, 1989).

6.6 Interest-Free Bank and Economic Development

The contribution of the interest-free bank of Jordan in the Economic development is very significant and the bank's role has been very important compared to conventional banks. Following is list os some of the projects financed by the bank:

1) Al-Rawdah Neighborhood (1985).
2) Investment buildings in Zarqa (1988).
3) Investment buildings in Amman (1988).
4) Commercial buildings in Madabah (1988).
5) Jerusalem Hospital in Amman (1988).
6) Light Factory in Sahab (1989).
7) Pipe Factory in Sahab (1989).

8a) Commercial buildings in Irbid (1989).

8b) Commercial buildings in Irbid (1990).

9) Medical equipment for Zarqa hospital (1989).

10) Man-made leather factory in Amman (1990).

11) Tailoring workshop at Russaifa (1990).

12) Dental clinic in Ma'an (1990).

13) Medical appliances factory in Amman.

14) Investment building with shopping center in Amman (1990).

15) Zarqa community college (building and equipment) in Zarqa (1990).

16) Plastic factory in Amman (1991).

17) Commercial building in Ma'an (1991).

18) Garments factory in Amman (1991).

19) Jarash Community College.

20) Al-Quds Community College.

21) Yarmouk University.

22) School of Al-Ummariyyah.

From the above list we can see that the bank plays a very important role in the economic development of the country. The most important aspect of this contribution is that all this created new opportunities for employment. It is also important to note that in spite of all the difficulties faced by the interest-free banks in form of both competition with other banks and unfavorable economic environment, the banks expanding in numbers, not only in the Middle East or other Muslim countries but also in many of the non-Muslim countries.

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Appendix A

Financial Ratios of Jordanian Interest-Free Banks

Year	Growth rate of total assets (%)	Growth rate of total deposits (%)	Growth rate of investment (%)	Growth rate of investment revenues (%)	Growth rate of net profit (%)
1980	113.00	-	-	-	-
1981	104.30	117.50	111.97	107.90	119.40
1982	43.10	42.00	86.40	108.57	169.00
1983	58.00	64.20	42.20	22.09	-31.27
1984	42.80	41.70	67.20	51.48	50.45
1985	24.20	23.50	12.60	16.25	-25.56
1986	27.50	23.60	34.50	19.49	16.25
1987	22.10	25.50	14.10	19.41	6.70
1988	12.70	12.60	13.80	24.60	40.50
1989	8.80	5.60	16.12	44.40	154.57
1990	1.03	1.60	3.33	23.07	3.96
1991	45.70	55.98	29.69	18.75	-1.96

Year	Growth rate of banks total revenues	Growth rate of total expenses	Shareholder equity / total assets	Shareholder equity / total deposits	Shareholder equity / current deposit
1980	-	-	12.97	17.20	41.37
1981	70.13	11.89	9.80	12.16	25.24
1982	98.88	59.51	9.40	11.84	26.03
1983	3.48	36.43	6.20	7.44	21.22
1984	26.21	12.77	4.70	5.72	21.49
1985	50.17	24.43	4.00	4.90	21.34
1986	20.26	21.76	6.20	7.81	37.49
1987	6.32	6.20	5.10	6.29	32.39
1988	26.10	20.90	4.66	5.74	29.59
1989	49.83	6.16	4.95	6.40	27.24
1990	14.84	25.73	4.90	6.31	25.62
1991	9.97	19.79	3.65	4.39	30.72

Year	Net Profit after tax Total Assets	Net Profit before tax Shareholder Equity	Net Profit after tax Shareholder Equity	Net Profit before tax No. of shares	Net Profit per share Marked Price Per Share
1980	0.12	0.07	0.39	0.01	0.48
1981	1.36	0.85	7.88	0.11	7.73
1982	2.25	1.25	12.52	0.22	8.65
1983	1.02	0.83	11.12	0.15	4.77
1984	1.03	0.91	17.22	0.22	6.62
1985	0.58	0.58	13.49	0.17	6.35
1986	0.54	0.54	10.27	0.13	5.29
1987	0.46	0.39	7.02	0.14	7.06
1988	0.55	0.45	11.15	0.19	10.43
1989	1.21	0.82	16.49	0.31	12.56
1990	1.25	0.74	15.06	0.24	11.42
1991	0.84	0.46	12.70	0.26	13.01

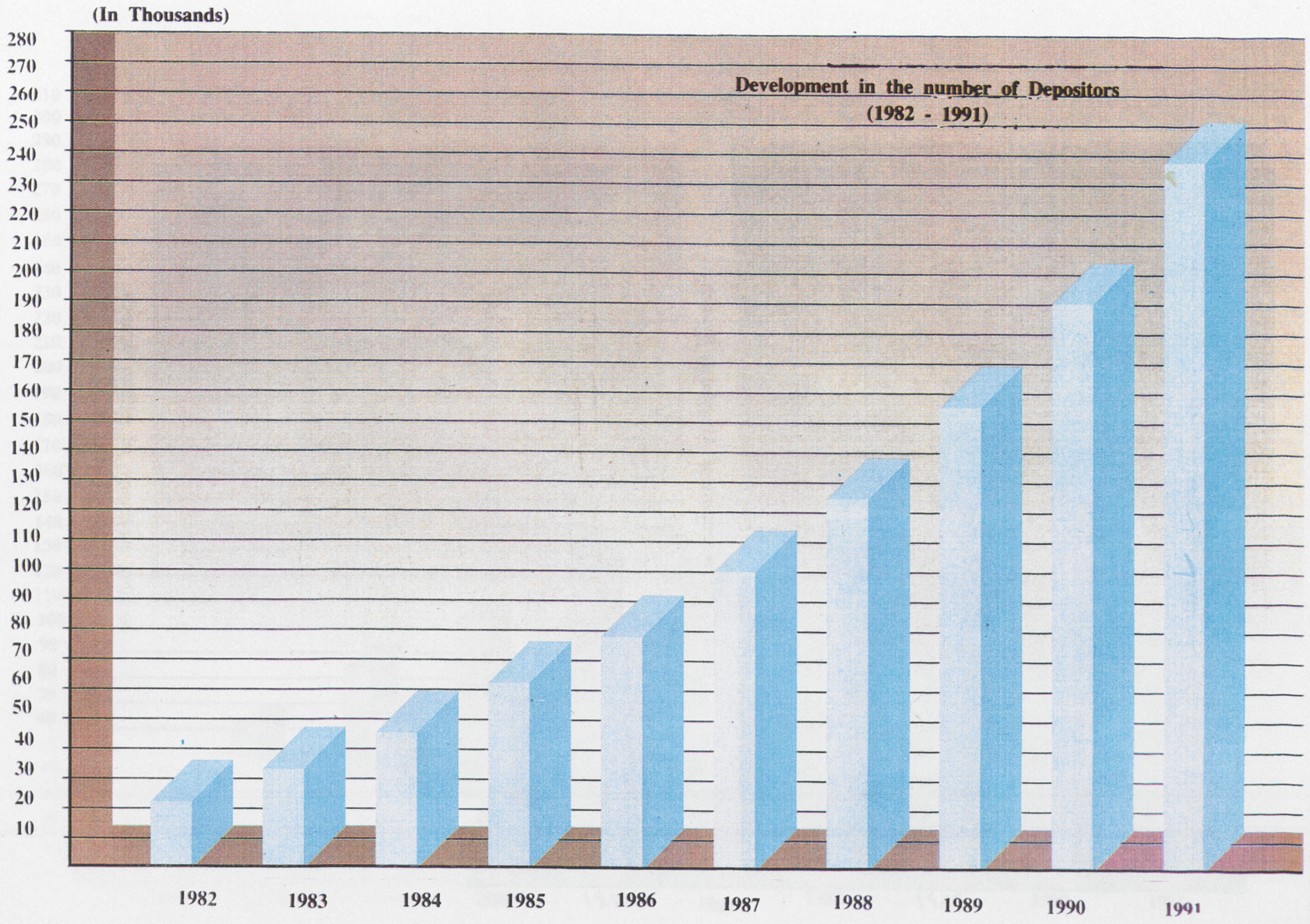
Year	Investment Share Equity Total Deposit	Credit Facilities Total Deposit	Total Expenses Net Profit Before Tax	Shareholder Dividends Ratio	Shareholder Dividends Share Market Price	Effective Net Profit
1980	49.71	56.26	127.50	-	-	2.68
1981	50.48	56.22	1.28	.5	3.51	3.93
1982	66.54	73.93	1.06	8	3.14	4.00
1983	60.24	64.22	2.09	8	2.54	2.83
1984	71.79	75.47	1.60	9	2.71	3.83
1985	65.95	68.89	2.29	9	3.36	3.04
1986	70.23	74.91	2.79	9	3.66	2.97
1987	64.23	68.07	2.78	9	4.54	2.94
1988	65.30	70.07	1.98	12	6.59	3.22
1989	62.40	75.21	0.99	10	6.95	4.13
1990	69.34	81.32	1.20	12	7.24	4.62
1991	77.31	86.24	1.47	12	7.66	5.10

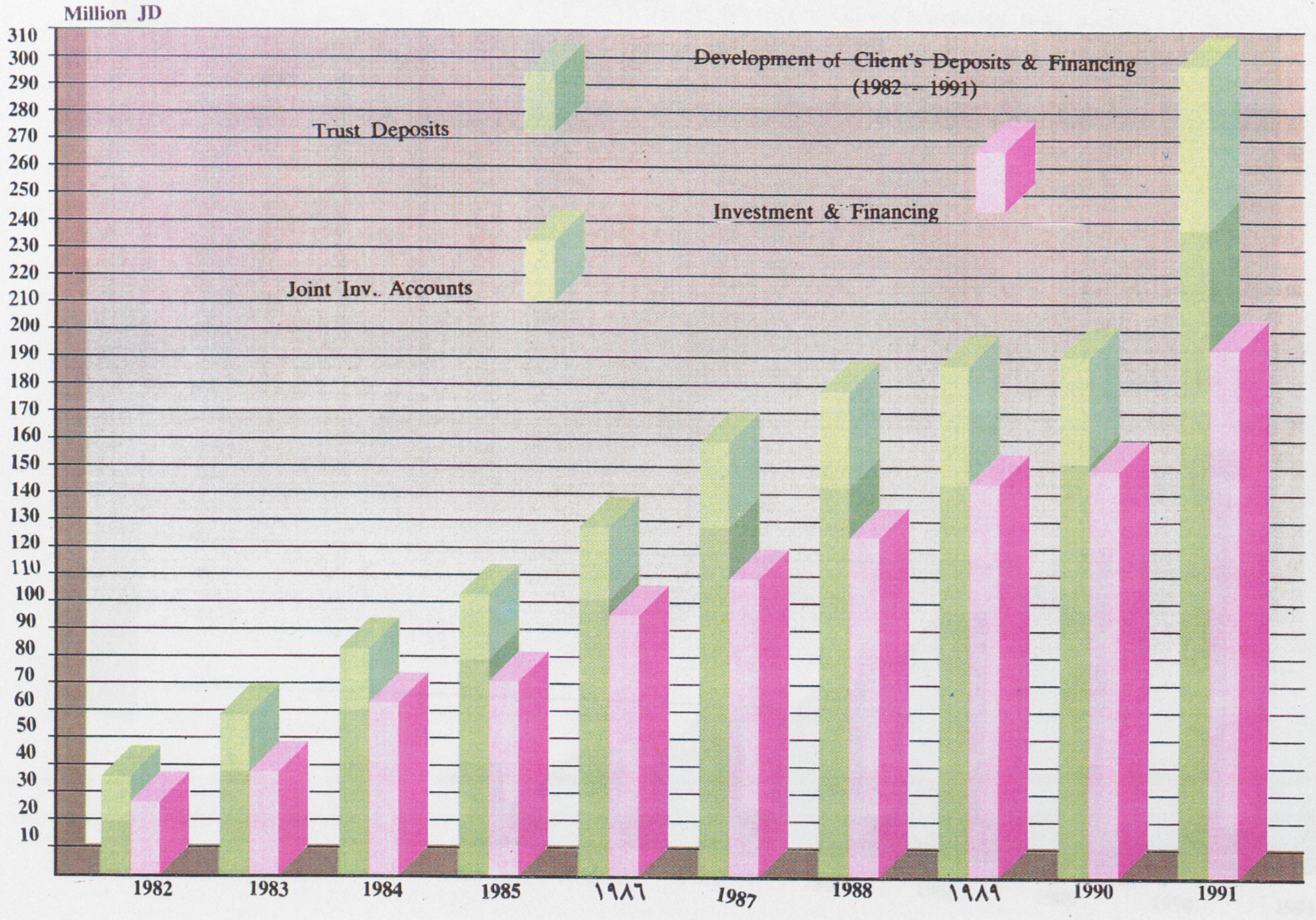
Year	Rate of Return on Investment Deposit	Rate of Return on Fixed Deposit	Rate of Return on Notice Deposit	Rate of Return on Saving Deposit	Earning Assets Total Assets
1980	8.20	7.35	5.74	4.10	49
1981	6.80	6.12	4.67	3.40	48
1982	7.20	6.48	5.04	3.60	61.6
1983	5.40	4.86	3.78	2.70	57.4
1984	5.70	5.13	3.99	2.85	67.5
1985	5.50	4.93	3.84	2.74	64.2
1986	5.10	4.59	3.57	2.55	67.4
1987	5.00	4.55	3.45	2.50	63.2
1988	5.35	4.81	3.74	2.67	63.03
1989	7.25	6.52	5.07	3.62	67.40
1990	7.85	7.06	5.49	3.92	72.53
1991	7.84	7.05	5.49	3.92	69.31

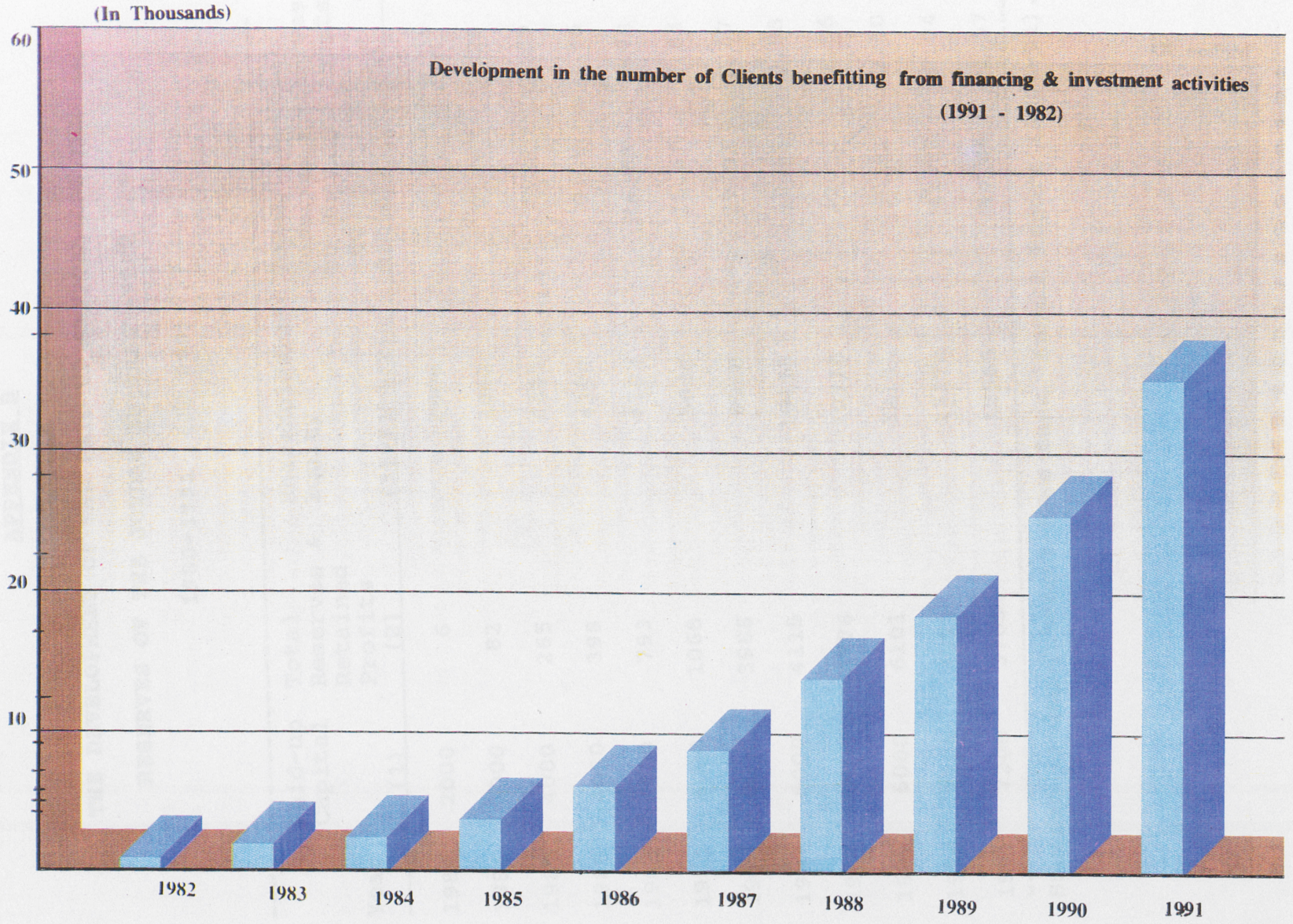
Year	Shareholder equity / total investment	Liquid assets / total deposits	Liquid assets / current & demand deposits	Total investment / shareholder equity and investment deposits	Net profit before tax / total assets
1980	29.74	56.52	185.80	76.66	0.12
1981	21.71	53.54	111.10	87.73	1.36
1982	16.11	36.05	79.20	111.62	2.25
1983	11.70	43.49	124.10	89.00	1.02
1984	7.61	33.24	124.90	96.40	1.03
1985	7.71	37.82	164.90	84.37	0.58
1986	10.46	36.07	173.20	86.03	0.54
1987	9.28	41.27	212.20	79.33	0.46
1988	8.36	41.47	213.80	86.99	0.55
1989	8.33	44.32	218.50	88.62	1.21
1990	8.10	49.51	224.61	93.64	1.25
1991	6.70	55.21	229.21	98.76	0.84

Sources: Jordan Interest-Free Bank, Annual Report, 1980-91.

Ramadan Shallah. "Islamic Banking." 1989.


(In Thousands)
Development in the number of Depositors
(1982 - 1991)
280
270
260
250
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991


Million JD
310
300
290
280
270
260
250
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
Development of Client's Deposits & Financing
(1982 - 1991)
Trust Deposits
Investment & Financing
Joint Inv. Accounts
1982
1983
1984
1985
١٩٨٦
1987
1988
١٩٨٩
1990
1991


(In Thousands)
Development in the number of Clients benefitting from financing & investment activities
(1991 - 1982)
60
50
40
30
20
10
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991

APPENDIX B

THE DEVELOPMENT OF THE PAID UP CAPITAL AND THE RESERVES OF THE JORDAN INTEREST-FREE BANK, 1980-1991 (JD 000)

Year	Paid-up Capital (1)	Total Reserves & Retained Profits (2)	Shareholders' Equity (3)=(1)+(2)	Total Reserves to Shar. Eq. (4)=(2)/(3)	Total Reserves to Assets (5)
1980	2000	6	2006	0.30	0.04
1981	3000	82	3082	2.66	0.26
1982	4000	265	4265	6.21	0.59
1983	4000	398	4398	9.05	0.56
1984	4000	793	4793	16.55	0.78
1985	4000	1068	5068	21.07	0.84
1986	6000	3988	9988	39.93	2.47
1987	6000	4115	10115	40.68	2.08
1988	6000	4376	10376	42.17	1.96
1989	6000	6101	12101	50.42	2.50
1990	7200	4979	12179	41.88	2.04
1991	7200	3765	12965	44.44	1.57

Source: Jordan Interest-Free Bank, Annual Report (1980-91).

APPENDIX C

THE ANNUAL RESERVES & RETAINED PROFITS, WITH THEIR RATIO TO THE NET PROFIT IN THE JORDAN INTEREST-FREE BANK, 1980-1991 (JD 000)

Year	Net profit (np)	Legal Reserve JD/np %	Voluntary Reserve JD/np %	Special Reserve JD/np %	Retained Profits JD/np %	Total Reserve & Retained Profits	Their Ratio n.p.
1980	14	1.4/10	-/-	-/-	4.8/34.5	6.2	44.5
1981	321	32.1/10	49.8/15.5	-/-	-/-	81.9	25.5
1982	863	86.4/10	50.2/5.8	-/-	44.5/5.0	181.1	21.0
1983	594	59.4/10	80.0/13.5	-/-	39.1/6.6	128.5	30.1
1984	893	89.4/10	178.6/20	-/-	165.7/18.6	433.7	48.6
1985	665	66.5/10	133.0/20	65.0/9.8	176.4/26	440.9	66.3
1986	773	77.3/10	77.3/10	115.4/15	196.3/25.4	446.3	60.3
1987	825	82.5/10	31.1/3.8	30.5/3.7	180.0/21.8	324.1	39.3
1988	1158	115.8/10	150/12.9	51.4/4.4	115.4/10.0	432.4	37.3
1989	2948	294.8/10	250/8.5	-/-	1406/47.6	1950.8	66.1
1990	3065	306.6/10	410/13.4	4.07/.13	202/6.6	922.67	30.1
1991	3005	300.5/10	380/12.6	-/-	146/4.8	826.5	27.5

Source: Jordan Interest Free Bank, Annual Report (1980-91).

APPENDIX D

THE LIABILITIES OF THE JORDAN INTEREST-FREE BANK

1980-1991 (JD Million & % to total liabilities)

Year	Shareholder's Equity	Client's Deposits	Bank Deposits	Cash Margins	Misc. provisions	Other liabilities	Total Liabilities
	JD/%	JD/%	JD/%	JD/%	JD/%	JD/%	
1980	2.01/13.0	12.5/80.8	0.01/0.06	0.45/2.9	0.12/0.8	0.38/2.5	15.4
1981	3.08/9.8	25.18/82.8	0.01/0.04	0.93/2.9	0.48/1.5	0.96/3.0	31.6
1982	4.27/9.4	36.76/81.2	0.17/0.38	1.20/2.6	1.27/2.8	1.67/3.6	45.2
1983	4.40/6.2	61.42/86.0	0.56/0.79	1.60/2.2	1.59/2.2	1.92/2.6	71.4
1984	4.79/4.7	89.48/87.6	0.92/0.90	1.63/1.6	2.52/2.5	2.75/2.7	102.1
1985	5.07/4.0	113.57/89.6	0.65/0.51	1.11/0.9	2.83/2.2	3.55/2.8	126.8
1986	9.99/6.2	142.58/88.2	0.31/0.19	1.66/1.0	2.71/1.7	4.42/2.7	161.7
1987	10.12/5.1	174.43/88.4	2.07/1.04	1.75/0.9	3.56/1.8	5.49/2.7	197.4
1988	10.38/4.66	194.69/87.6	3.07/1.38	3.16/1.4	4.28/1.92	6.73/3.0	222.6
1989	12.10/5.0	206.9/85.53	4.2/1.73	6.4/2.64	6.17/2.54	8.3/3.4	242.3
1990	12.18/4.98	204.6/83.5	4.8/1.96	5.06/2.06	7.48/3.06	10.8/4.4	244.8
1991	13.0/3.64	296.9/83.2	2.37/0.66	5.6/1.5	8.8/2.5	13.2/3.7	356.8

Source: Jordan Interest-Free Bank, Annual Report (1980-91).

APPENDIX E

THE DEVELOPMENT OF THE DIFFERENT TYPES OF THE CLIENTS DEPOSITS IN THE JORDAN INTEREST-FREE BANKS, 1980-1991 (JD Million & % Growth Rate)

	Joint Investment Accounts												
	Trust		Saving		Notice		Fixed Term		Total inv.		Specified Inv.		Total
Year	Accounts		Deposits		Deposits		Deposits		Deposits		Accounts		Deposits
	JD	%	JD	%	JD	%	JD	%	JD	%	JD	%	
1980	4.85	152.0	1.10	70.0	4.10	95.8	6.80	92.9	6.80	92.9	0.85	8.7	12.49
1981	12.21	152.0	1.86	70.0	8.02	95.8	3.23	102.0	13.12	92.9	0.85	-	26.18
1982	16.38	34.1	3.27	75.3	11.53	43.7	4.65	44.0	19.45	48.2	0.92	8.7	36.76
1983	20.73	26.5	4.90	50.0	13.49	17.0	19.45	318.0	37.84	94.6	2.85	208.9	61.42
1984	22.30	7.8	6.83	75.0	15.03	11.5	38.71	99.0	60.57	60.1	6.61	131.6	89.48
1985	23.75	6.5	8.06	18.1	15.88	5.6	55.18	42.5	79.12	30.6	10.70	62.0	113.57
1986	26.64	12.2	10.29	27.6	16.33	2.9	74.35	34.7	100.97	21.9	14.97	39.8	142.68
1987	31.23	17.2	12.53	21.8	16.46	0.8	98.29	32.2	127.27	26.3	15.92	6.4	174.43
1988	35.08	12.3	14.06	12.2	18.40	11.8	110.26	12.2	142.72	15.45	17.15	7.7	194.96
1989	43.6	24.2							143.50	0.54	19.70	14.8	206.8
1990	38.7	-11.2							151.80	5.60	14.1	-28.4	204.6
1991	60.02	57.8							236.90	56.0	16.67	18.8	313.52

Source: Jordan Interest-Free Bank, Annual Report (1980-91).

APPENDIX F

The Relative Importance of the Different Types of Client Deposits in the Jordan Interest-Free Banks

Year	Trust Accounts	Current Accounts	Demand Deposit Acc.	Joint Inv. Accounts	Time Deposits	Notice Deposits	Saving Deposits	Specified Inv. Accounts	Totals
1980	38.8	-	-	54.4	12.8	32.8	8.8	6.8	100
1981	46.5	-	-	50.1	12.4	30.6	7.1	3.2	100
1982	44.6	-	-	52.7	12.7	31.0	8.9	2.5	100
1983	33.7	-	-	61.7	31.7	22.0	8.0	4.6	100
1984	24.9	-	-	67.7	43.3	16.8	7.6	7.4	100
1985	21.0	-	-	69.7	48.6	14.0	7.1	9.4	100
1986	18.7	-	-	70.8	52.1	11.5	7.2	10.5	100
1987	17.9	-	-	72.9	56.3	9.4	7.2	9.1	100
1988	18.0	16.5	1.5	73.1	56.5	9.4	7.2	8.8	100
1989	21.1	-	-	69.3	-	-	-	9.6	100
1990	18.9	-	-	74.2	-	-	-	6.9	100
1991	19.14	-	-	75.5	-	-	-	5.36	100

Source: Jordan Interest-Free Bank, Annual Report (1980-91).

APPENDIX G

The Types of the Joint Investment Deposits of the Jordan Interest-Free Banks, 1980-1988 (%)

Year	Saving Deposits	Notice Deposits	Fixed Term Deposits
1980	16.1	60.4	23.5
1981	14.2	61.2	24.6
1982	16.8	59.3	23.9
1983	13.0	35.6	51.4
1984	11.3	24.8	63.9
1985	10.2	20.1	69.7
1986	10.2	16.2	73.6
1987	9.8	12.9	77.3
1988	9.8	12.9	77.3

Source: Jordan Interest-Free Bank, Annual Report (1980-91).

APPENDIX H

The Assets of the Jordan Interest-Free Banks, 1980-1991

(JD Million and % to Total Assets)

Year	Cash in Hand and at Banks		Securities Portfolios		Interest-free Loans & Bills Discounted		Financing Investments		Specified Investments		Fixed Assets		Other Assets		Total Assets
	JD	%	JD	%	JD	%	JD	%	JD	%	JD	%	JD	%	
1980	6.59	42.6	-	-	0.04	0.3	6.75	43.6	0.83	5.4	0.60	3.8	0.66	4.3	15.47
1981	13.59	42.6	0.10	0.3	0.05	0.2	14.2	44.9	0.88	2.8	0.81	2.6	2.08	6.6	31.61
1982	12.8	28.2	0.18	0.4	0.15	0.3	26.47	58.5	2.30	2.7	1.81	3.9	2.81	6.2	45.24
1983	25.44	35.6	0.29	0.4	0.38	0.5	37.60	52.6	3.15	4.4	2.70	3.8	1.93	2.7	71.49
1984	27.56	27.0	0.30	0.3	0.25	0.2	63.01	61.7	5.64	5.5	3.84	3.8	1.49	1.7	102.69
1985	38.86	30.6	0.30	0.2	0.29	0.2	71.01	56.0	10.11	8.0	4.87	3.8	1.34	1.1	126.77
1986	45.77	28.3	0.32	0.2	0.37	0.2	95.46	59.0	13.19	8.2	4.78	2.9	1.80	1.1	161.66
1987	65.96	33.4	0.32	0.2	0.31	0.2	109.00	55.2	15.35	7.8	4.66	2.4	1.81	0.9	197.42
1988	74.76	33.6	0.25	0.1	0.45	0.2	124.15	55.8	15.89	7.1	4.88	2.2	2.19	0.1	222.58
1989	70.00	28.9	0.25	0.1	0.49	0.2	144.0	59.0	19.70	8.1	5.82	2.4	3.0	1.2	242.30
1990	70.8	28.6	0.23	0.09	0.52	0.2	149.0	61.0	14.2	5.8	1.3	0.5	3.47	1.4	244.8
1991	135.2	38.1	0.19	0.05	0.65	0.18	193.0	54.2	16.7	4.7	2.29	0.6	4.03	1.1	356.7

Source: Jordan Interest-Free Bank, Annual Report (1980-91).

APPENDIX I

The Sources of Income of the Jordan Interest-Free Banks, 1980-1991 (%)

Year	Commissions	Foreign Exchange Revenues	Investment Revenues	Other Revenues	Total
1980	4.34	27.50	68.16	-	100
1981	11.83	24.27	62.00	1.91	100
1982	8.96	14.13	75.39	1.52	100
1983	11.97	5.39	78.85	3.3	100
1984	10.59	10.31	75.54	3.56	100
1985	8.48	3.46	84.14	3.89	100
1986	7.43	7.49	78.98	6.08	100
1987	6.79	6.56	80.27	6.37	100
1988	8.42	7.16	78.04	5.93	100
1989	5.77	6.4	80.8	7.03	100
1990	5.70	7.4	81.21	5.5	100
1991	5.8	-	84.9	9.30	100

Source: Jordan Interest-Free Bank, Annual Report (1980-91).

APPENDIX J

The Jordan Interest-Free Sectoral Distribution of Finance

Year	'85	'86	'87	'88	'89	'90	'91
Sector							
Industry	28.6	34.9	33.0	26.0	31.9	22.1	21.6
General Trade	23.8	22.9	23.6	28.0	22.3	24.0	26.0
Real Estate	18.2	17.2	16.2	13.4	15.0	15.1	10.9
Transport	9.4	9.9	5.2	4.7	3.5	3.9	2.5
Individual and Craftsman	8.2	7.5	11.6	15.9	16.5	22.7	27.2
Miscellaneous	11.2	7.6	10.5	12.0	10.8	12.2	11.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Jordan Interest-Free Bank, Annual Report (1980-91).