CHAPTER V

OUTFLOW OF LABOUR TO OIL RICH COUNTRIES

The earlier chapters have shown that labour force of Jordan is very much sensitive to the emigration and immigration. Emigration has helped to ease the problem of unemployment and the remittances have helped the balance of payment problem of Jordan. The immigrant labour, most of which is not highly educated, has taken up the work in agriculture and construction, the jobs Jordanian do not like to do. It is therefore necessary to analyse in detail various aspects of outmigration and immigration of labour. The present and the following chapter therefore deal with outmigration and inmigration respectively, so as to analyse their impact on the labour market of Jordan. As many Jordanian emigrants are educated, outmigration of "human capital", can have adverse impact on the growth of economy. Thus before analysing the nature of movement in and out of labour market, it would be worthwhile to have a brief account of theoretical literature in the field of mobility of human capital particularly in respect to "Brain Drain" a theme very popular among economists during 1960s and 1970s. This however is a problem from which Jordan is supposedly suffering and is therefore concerned about.

5.1 Theoretical and Conceptual Framework of Human Migration

In the competitive model of labour market, mobility plays an important role as workers are expected to move to better jobs

having higher income so as to eliminate earning differentials, leading ultimately to the maximization of welfare of the economy.

Todaro's Model mentioned in the earlier chapters explaining the rural-urban migration can be extended to migration of people from low income developing economies to developed economies. The decision to migrate is basically an economic one except that of the refugees the world over. Economists have therefore attempted to understand this phenomenon in the context of human capital model. In 1962, a classic article by Larry A.Sjaastad[1], analysed human migration in terms of human capital approach, treating migration as an investment which increases the productivity of human resources. The costs associated with migration such as psychic costs of leaving family and friends, foregone earnings, retirement benefits and transportation costs etc, are to be weighed against the expected returns. If the present value of the expected increased earnings exceeds the value of investment costs, the person will choose to move. If the opposite is true, the individual will decide that it is not worthwhile to migrate, even though the earnings potential in a foreign country may be higher than the present location.

In case one applies Human Capital approach to Jordan there arises the problem of measurement of various costs and benefits of emigration. On the one hand, Jordan receives remittances and on the other hand, it losses trained skilled and qualified workers. However, quantification of benefits and costs in actual monetary units is a difficult task and it is difficult to measure the potential loss of educated and trained human resources on Jordanian economy. In Jordan computation of cost

benefit ratio of education is not feasible at present[2] due to non availability of required information.

Some of the costs of labour force migration abroad are as follows:

- Expenditure on education and training (investment in human resources).
- Expenditure on transfer and migration
- Psychological cost of emigrants
- Loss to the economy of skilled people
- All the negative effects on domestic economy caused by an inflow of remittances from emigrant labour.
- The cost of employing immigrant workers to replace the national labour force (The costs are both economic and social).

The benefits include the following items:

- All positive effects of remittances on domestic economy.
- Lessening of the unemployment problem and avoidance of social and political problems which may arise due to unemployment.
- Improvement in living standards of many households in Jordan. Again, some of the benefits especially the social and political are not easily quantifiable so as to ascertain the net impact on economy.

The human capital theoretical approach can explain to a considerable extent the movement of people or labour. However, all the patterns of labour mobility cannot be consistent with labour market theory. Whether this is true in the case of Jordan or not forms the focus of this and the two succeeding chapters.

In the study of human mobility, the concept of human capital is an important one as movement of general migrants have to be

distinguished from brain drain and return migration is to be distinguished from permanent migration. Secondly, the reason to migrate can be induced or exogenous. Induced migration is because of the rising demand for labour in a foreign country. Exogenous migration may also be because of factors like political upheavals. The former type is indicated by movement along a given supply curve of labour whereas the latter is indicated as a shift in the supply curve of labour to the right. The elasticity of labour supply in an economy is influenced by the extent to which it allows induced immigration. Apart from the pull factors, the push factors in the form of relative low wages and grim job prospects also induce people to migrate. In case of Jordan push, pull and exogenous factors have been responsible for in and out migration. The outmigration is not always for the purpose of permanantly settling down. The impact of mobility on the domestic and the recipient country is subject to the type, nature, and determinants of migration.

The human capital theoretic approach can be applicable to practically all the types of human mobility except that which is due to exogenous factors which are in the form of shocks. Brain drain also needs to be dealt separately because of its specific nature. In the context of Jordanian economy it is not out of place to discuss this as many labourers with high human capital componant outmigrate and the government is concerned about it.

5.1.1 Conceptualization of Brain Migration

For analytical reasons brain migration is classified into four categories: i) brain overflow; ii)brain export; iii) brain exchange; and iv) brain drain[3].

Brain overflow results from overproduction or low rate of utilization of brain. Such brains may get absorbed in a foreign market. The opportunity cost of such brains in a domestic economy is practically zero. It therefore does not affect the economy adversely. Such emigration sometimes may help in solving the unemployment problem. It is therefore, not practical to check emigration of such brains.

Brain export is defined as export of brain resulting in remittances to the exporting country either in the form of a tax[4] or a once for all lumpsum exit tax. The exchange price of brain whatever may be its form should reflect the shadow price of public and private costs of brain. It is rather easy to estimate private cost but not the social costs. However if the rate of return from the export is adequate to cover the domestic opportunity costs, it can be considered as export of brain.

Brain exchange is in the form of exchange of scholars, which is a temporary phenomena. As such exchanges are mutually beneficial, they help in enhancing global welfare. However, the issue of net gain of such transfers to a country is a debatable issue and needs investigation. It is likely that brain exchange might get converted to brain drain.

The fourth type of brain migration, i.e., brain drain concerns many developing economies. It is a permanent migration of skilled people and retards the economic development of a sender country. As such migration is not from the part of surplus or unemployed manpower but from employed or underemployed part of highly skilled. It can thus have far reaching adverse effect on the economy.

Brain migration can take any or all and these forms and thus it becomes necessary to know the nature and extent of brain migration and its impact on the economy. It is not very easy to adopt a criterion which will clearly specify the terms "brain" and "migration". The question is that of determining the level of skills and qualifications which can be considered as skills. Besides, the loss of which type of skill is brain drain also has to be determined. The lack of information on qualitative and quantitative aspects of brain migration may be another problem to estimate the impact on the economy. The stage of economic development, type of technology in use, manpower situation and national and international interests may provide different contexts to a given type of brain migration. All these considerations play an important role in understanding the concept of brain drain.

5.1.2 Theoretical Framework to analyse Brain Migration

Brain migration can be explained through the micro theory of behaviour pattern of an individual migrant or of a country within the demand-supply framework, or through push or pull factors.

Micro theory of brain migration can also be analysed through the Cost-Benefit approach as mentioned earlier.

The process of brain migration can be studied by dualistic world economy model, where one economy is highly capital and technologically intensive and has higher wages, higher absorptive capacity, higher opportunity cost or labour and higher rate of profit, the other economy has factors opposite to that of a developed economy. In such a dual economic framework the wage differentials explain migration of people from underdeveloped economies to developed economies. The process of migration is expected to continue till the wage levels between the two countries is equalized. However such an approach to brain migration is criticized by Dandekar as cited in Ghosh[5]. According to Dandekar only factor price differentials are not the only factor responsible for migration. Had that been the case, most of the maid servants would have migrated by now to developed economies.

The impact of migration from national and international perspectives has been analysed by various economists from time to time both at theoretical and empirical levels. An extensive study has been done by Borjas[6] on economies of immigration. He in his article explores issues like the performance of immigrants in the host country, wage convergence between native born and immigrants, self selection of the immigration flow, import of immigrants on native earnings and employment, migration and welfare. The question whether immigration or emigration is good for the world is not the main focus of recent studies on migration as it is considered as an accepted fact that migration,

perse, cannot be condemned as each country can have different considerations to the issue depending upon its demographic, social, political and economic melieu. However, certain theoretical arguments are enumerated below in the context of Jordanian economy where the outflow of skilled manpower poses a problem to the economy, inspite of the fact that it has considerably solved the problem of unemployment.

As mentioned earlier 1960s and 1970s were the periods where brain migration was a very sensitive issue for the developing economies as globalization then was not the key word for development. Bhagwati and Dellalfar[7] advocated imposition of a tax on highly skilled persons from developing economies who are resident in a developed country. Their 'emulation model' was put to empirical verification. The model tries to analyse the brain drain effects on the welfare of the sender country. Following the model, emigration of the skilled persons causes certain costs to those who do not migrate. The costs are the higher income which they could also have earned. Hence, their expectation of higher income increases from higher education. The university graduates therefore pose a threat of immigration to the economy as they would emigrate unless higher salaries are paid. As a result of such bargaining, the skilled persons of a country 'emulating' foreign salaries are able to get a higher salary. According to Bhagwati and Dellalfar, if there had been no brain drain, emulation would not occur and the country would not suffer because of over production of educated persons. The vicious circle of increased supply of skilled people, leading to emigration, which in turn result in more emulation and more

production of skilled people could therefore be stopped. According to their model the social cost of emulation could be lowered by formulating a policy of tax on emigration. Though the model was considered as an important contribution to study and tackle the issue of brain drain, it was not realistic. Citing the example of India, Blaug[8] and others argued that the salaries of Indian civil servants are at a higher level ever since independence, primarily because of the structure of remuneration adopted by the government on the lines of British India. The model therefore does not answer the question of emigration for India fully. Apart from being unrealistic, the proposal of taxing emigrants is also difficult to implement. Such theoretical approaches with course of time did not stand empirical validity and lost their significance due to changes in world economic order. However, it is necessary to understand the relative impact of emigration of skilled people on the economy.

An emigration of a skilled or professional person causes not only a reduction in a particular type of labour but also a reduction in the capital stock equal to the units of capital required to train a person to be a skilled/professional personnel. There is also a fall in the total output in the economy as long as marginal productivity of emigrant labour is positive. Thus emigration of skilled persons leads to a fall in the national aggregate output much more than that of emigration of unskilled persons.

The effect of emigration on per capita income if analysed in comparative static framework has three possibilities; a)per capital income might remain unchanged if an emigrant takes with

him, his per capita share of total capital and labour inputs. b) an emigrant does not take physical capital with him. This can lead to an increase in per capita share of capital in the economy and hence an increase of average output, c) If a skilled emigrant takes either more or less than his per capita share of total social capital then the effect on the per capita output would be correspondingly negative or positive[9]. In the short run, however, the impact of emigration of skilled person would be less pronounced if the technology is such that it takes relatively less time to redistribute existing physical capital among remaining workers or that a shorter period of time is required to train an existing worker. The short run effect also depends upon the substitutability of skilled person for an ordinary worker. The losses will be smaller if ordinary workers can be substituted for workers or existing workers can be trained without much loss of time. In case this is not possible, the economy will have to set its training rates high so that the rates of a skilled worker are not lower than that of an unskilled worker as this would adversely affect the economic growth. The fiscal impact of emigration in the form of remittances if included in this model, the analysis then would have to incorporate the effect on capital formation in the economy and also on the distribution of income among the people. Thus the net impact will be dependent upon the loss to the economy as against the gain in terms of remittances.

The moot question which still remains to tackle is: the nature of use of remittances for consumption and investment purposes. Secondly, the remittances cannot compensate for the loss of trained people in the short run, which are essential to

the growth of economy. Hence, for a developing economy, which is still in the initial stages of growth, the loss of human capital is not a welcome proposition even if it helps to solve unemployment problem and bring remittances.

The outflow of workers specially the skilled ones, from Jordan is mainly due to the state of the economy, which pushes them to emigrate and the prosperity of the neighbouring countries, which pulls them. Though remittances play an important role in the balance of payment of Jordanian economy, it does not get reflected in a higher industrial or agricultural investment and output. It is therefore necessary to first understand the nature of outflow and inflow of people in Jordan so as to analyse the nature and extent of impact on the labour market of Jordan.

5.2 Historical Dimensions of Emigration of Jordanian Labour Force

The roots of Jordanian labour problem may be located in the Palestinian crisis of 1948, which resulted in the movement of about 350 thousand refugees to Jordan. This was the first major crisis faced by the Jordanian labour market, as the wages were adversely affected. It was impossible for Jordanian labour market to absorb all those workers. Unemployment problem therefore became unmanageable. The labour force in Jordan was about 270 thousands in 1947, which was only 22.5 percent of the total population of 1.2 million for East and West Bank. The unemployed labour force were about 160 thousand persons, i.e. 59 percent of the total[10]. Unemployment was faced mostly by refugees as they were about 100 thousand persons.

Due to such inflows of labour and poor economic condition Jordanian labour force began migrating abroad either to Arab Gulf countries or to some foreign countries like the United States, West Germany and some Latin American countries like Venezuela and Brazil. The first population census in 1961 shows that the Jordanian labour force abroad were 63 thousands[11].

The outflow of Jordanian labour force abroad helped the economy during fifties. It is therefore likely that out of the various types of brain migration, during the Fifties and the early Sixties, the brain migration might be in the form of 'Brain outflow'. The Jordanian economy was not able to absorb them in the domestic labour market and therefore brain outflow helped them to solve unemployment problem and resulted in flow of remittances. During the period 1949-1959 the remittances were to the tune of JD 30 million. This amounts to 20 percent of total foreign aid to Jordan during the same period[12] and about 85.3 percent of the value of Jordanian commodity export during the same period.

The outflow of Jordanian labour force abroad continued in the sixties and seventies. This happened by individual contracts, including contractual teaching and clerical jobs. The main objective of 7 year plan of 1964-1971 was to reduce unemployment. Kuwait and Saudi Arabia absorbed most of Jordanian labour force[13]. Emigration in the last 25-30 years is closely related to the prosperity in the neighbouring countries because

of oil price boom helping these countries to invest heavily, which required labour. Jordanian educated and skilled labour particularly emigrated to neighbouring countries to take advantage of the situation.

Table 5.1(a) shows the emigration of Jordanian Labour force during the period 1968-1993. The number of Jordanians abroad rose from 87,500 workers in 1968 to 340,000 workers in 1989 and this dropped to 275,000 by 1993. Their annual growth rate rose from 8.7 to 13.9 by 1970, which continued till 1975. This phenomenon is attributed to the rise in oil prices and economic prosperity in OPEC during this period. During the period 1973 -1980 , the investments in Arab oil exporting countries were very high (about 32.5 percent of their GDP in 1978). This was due to the hike in oil prices, During this period Jordan got benefits of the remittances from its workers in Arab oil exporting countries, which helped to increase its investments to 41.1 percent of Gross Domestic Product in 1980. The outflow of Jordanian labour force to Gulf countries continued by about 11 percent annually during 1973 - 1980[14]. However with the need to industrialize and to have sustainable growth, such 'Brain outflow' turned out to be "Brain Drain".

As a result of economic recession during 1980s, there was a sudden drop in emigrant growth rate from 9.0 percent in 1980 to 2.3 in 1981. Their Annual growth rate decreased to a negative point (-2.7 percent) in 1988. The time period which extended from 1986 till the end of 1989 is characterized as stagnation period. During this period the prices of oil sharply decreased

and reached $ 12.97 per barrel in 1986, while it was $ 34.17 per barrel in 1981 (see table 5.1b). The fall in oil prices resulted in the recession in demand for Jordanian labour. Further the Gulf crisis of 1990-1991 resulted in the decline in outflow of labour to Gulf States, from 340000 workers in 1989 to 275000 workers in 1993.

The outflow of Jordanian labour force abroad decreased to 2 percent per annum as there was a decrease from 3054000 in 1980 to 275000 in 1993[15]. Jordan's domestic investment decreased to 29.4 percent of Gross Domestic Product in 1994 which was around 38 percent during the mid Eighties.

Thus outflow of labour plays an important role not only in Jordanian labour market but also in the economy as a whole. The following sections therefore deal with the nature of outflow and relationship of remittances with some of the macro economic aggregates of Jordanian economy.

Table 5.1(a):Jordanian Labour Force Abroad During 1968-1993

Year (1)	Number (abroad) (2)	Change in Col 2 (3)	Yearly Growth Rate (4)	Outflow as a % of Labour Force (5)
1968	87500	-	-	31.3
1969	95200	7700	8.8	32.9
1970	103500	8300	8.7	34.5
1971	117900	14400	13.9	37.9
1972	134300	16400	13.9	41.6
1973	152900	18600	13.8	45.9
1974	174200	21300	13.9	50.7
1975	198400	24200	13.9	55.8
1976	216300	17900	9.0	58.9
1977	235800	19500	9.0	62.1
1978	257000	21200	9.0	65.5
1979	280200	23200	9.0	69.1
1980	305400	25200	9.0	72.7
1981	312300	6900	2.3	71.7
1982	317800	5500	1.8	70.4
1983	326400	8600	2.7	69.8
1984	334300	7900	2.4	68.9
1985	339300	5000	1.5	67.5
1986	343300	4000	1.2	64.1
1987	339000	-4300	-1.3	61.0
1988	330000	-9000	-2.7	57.6
1989	340000	10000	3.0	58.2
1993	275000	-65000	-19.11	32.0

Sources : 1) Dr. Ibrahim Issa, Royal Scientific Society, Current status and Future of Jordanian Labour Market Volume.3 1989 (Arabic Origin)

2) Dr. Abu Jaber Kamal, Jordanian Labour Market, Dar Al Basheer, 1991 (Arabic Origin).

3) Ministry of Labour, Annual Report, 1993.

Table 5.1(b) : Oil Prices During 1970-1992 (per barrel in US $)

Year	Nominal	Index No.1973=100
1970	2.10	71.50
1971	2.57	75.70
1972	2.80	82.80
1973	3.14	100.00
1974	10.41	124.50
1975	10.43	138.60
1976	11.63	138.00
1977	12.60	148.90
1978	12.91	168.10
1979	29.19	193.30
1980	36.01	219.90
1981	34.17	212.00
1982	31.71	204.80
1983	30.05	198.30
1984	28.06	192.70
1985	27.52	191.20
1986	12.97	220.10
1987	17.73	246.30
1988	14.24	262.30
1989	17.31	262.00
1990	22.26	285.50
1991	18.62	290.80
1992	18.44	275.00

Source: 1) Arab Oil- exporting countries annual report 5 1988. 2) I.M.F International financial statistics vol.xl 111, No.8 August 1990. 3) Arab Monetary Fund, Arab Economics, Unpublished Report, Sept,1995 (Arabic Origin)

5.3 Geographical Distribution of Outmigrants

Jordanians are forced to learn mobility because of their circumstances. The outmigration on large scale started in the Fifties.

Table 5.2 provides information on the geographical distribution of Jordanian Labour abroad. It shows that nearly three quarters, i.e. 79.0 percent of total Jordanian labour force were concentrated in Arab countries in 1961. Because of the prosperity in Gulf countries due to hike in oil price during seventies and early eighties, the number of emigrated Jordanian labour force increased. The Oil-Rich neighbouring Arab countries had a share of 84 percent of this labour force. Among these countries Saudi Arabia and Kuwait absorbed Jordanian workers on a large scale. In 1987 about 87.3 percent of total Jordanian labour were in Saudi Arabia (58.0 percent) and Kuwait (29.2 percent). United Arab Emirates and Qatar had 3.8 percent and 2.9 percent share respectively during the same year. Oman absorbed 2.17 percent and other Arab countries received 4.11 percent in 1987. The share of emigrants in Lybia and Bahrain was a meagre 1.1 percent each. Among the non-Arab countries, labour was mostly attracted to the United States and West Germany. These two countries accounted for 47.4 percent and 19.23 percent share respectively of the Jordan labour outside Arab world in 1987.

Table 5.2: Countrywise Distribution of Jordanian Labour Force, 1968-1993 (In '000)

Country	1961	1975	1980	1985	1987	1993
Saudi Arabia	-	68.0	140.0	160.0	160.9	158.0
		(48.92)	(53.54)	(57.97)	(58.06)	(79.00)
Kuwait	-	47.7	75.0	81.5	81.0	7.0
		(34.28)	(28.68)	(29.53)	(29.22)	(3.5)
Qatar	-	2.0	7.3	8.0	8.3	7.5
		(1.45)	(2.79)	(2.90)	(2.99)	(3.75)
United Arab Emirates	-	7.2	19.0	10.5	10.9	10.5
		(5.18)	(7.27)	(3.80)	(3.92)	(5.25)
Bahrain	-	0.7	3.3	3.0	3.0	3.0
		(0.47)	(1.26)	(1.09)	(1.08)	(1.5)
Oman	-	0.5	6.5	6.0	6.0	6.5
		(0.36)	(2.49)	(2.17)	(2.17)	(3.25)
Lybia	-	10.0	6.5	3.0	3.0	3.0
		(7.19)	(2.49)	(1.09)	(1.09)	(1.5)
Other Arab Countries	-	3.0	4.0	4.0	4.11	4.5
		(2.16)	(1.53)	(1.45)	(1.48)	(2.25)
Total in Arab Countries	25.9	139.0	261.5	276.0	277.2	200.0
		(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
United States	-	-	23.0	24.3	24.6	34.5
			(52.39)	(46.73)	(46.59)	(46.0)
West Germany	-	-	10.0	10.0	10.0	10.0
			(22.78)	(19.23)	(19.23)	(13.33)
Canada	-	-	5.0	5.0	5.2	10.5
			(11.39)	(9.62)	(9.8)	(14.0)
Australia	-	-	3.0	3.0	3.0	8.0
			(6.83)	(5.77)	(5.68)	(10.67)
United Kingdom	-	-	1.5	3.0	3.0	4.0
			(3.42)	(5.77)	(5.68)	(5.33)
Other Foreign Countries	-	-	1.4	6.8	7.05	8.0
			(3.19)	(12.98)	(13.35)	(10.67)
Total in Non-Arab Countries	6.9	-	43.9	52.0	52.8	75.0
			(100.0)	(100.0)	(100.0)	(100.0)
Grand Total	32.8	-	305.4	328.0	330.0	275.0

Note : Figures in brackets show % to total.

Sources:1. Department of Statistics, First Population Census - 1961, Vo. 1 ,Tables (5/2), (5/9) Amman-Jordan 1964 (for Year 1961)

2.Ministry of Labour -Annual Reports -1980, 1987 and 1993 (For Years 1980,1987 & 1993), Jordan.

3.Ali Hilal Unemployment and Migration Streams in Jordan, Labour Magazine No.41, 1988 P.29- Arabic Origin (for Years 1975 & 1985 emigrants in Arab Countries).

4 Mohammad Abdel Hadi Alekl, Migration of Labour Force between Theory and Practice with Reference to Jordanian experience.Labour Magazine No.34. Amman 1986 P.36 Arabic Origin.For year 1985 -Emigrants in Foreign Countries.Jordan

The number of Jordanian labour in Oil-Rich Arab countries decreased from 2,77,200 in 1987 to 2,00,000 workers in 1993 against an improvement in emigration to non-Arab countries from 52,800 in 1987 to 75,000 in 1993. Among Arab Countries, Saudi Arabia remained the biggest employer of Jordanian work force in 1993, employing 79.0 percent of total emigrants in Arab countries. Due to Gulf war in early Nineties, the total Jordanian labour in Kuwait dimished sharply from 29.22 percent in 1987 to 3.5 percent in 1993, while the United Arab Emirates absorbed 5.25 percent, Qatar 3.75 percent and Oman 3.25 percent. The percentage share of Jordanian labour in Lybia and Bahrain remained relatively negligible; each being 1.5 percent in 1993.

In the countries other than the Arab world, the United States with its share of 46.0 percent was the biggest employer for Jordanian work force in 1993. Next in order were Canada, and West Germany/Germany which employed around 14.0 percent followed by Australia which absorbed 10.67 percent of total.

In order to analyse this problem further, let us understand the distinction between Jordanian's emigration to Arab countries and their emigration to non-Arab countries which is important for following reasons:

1) The labour transference to the Middle East countries is considered as transference to the third world countries in comparison with the developed countries.

2) The labour emigration to Gulf Arab countries is considered as temporary migration because of so many restrictions, and the

migrants to these countries cannot easily get the nationality[16]. In addition, the migrants were not legally permitted to run any private occupation/profession/service without a sponsor.

5.4 Factors Responsible for Outflow of Jordanian Labour Force Abroad

Push Factors

The earlier sections have shown that the potential labour force of Jordan could have been almost 70 percent more if there were no outmigration. The migration can be the result of both pull and push factors. The present section tries to examine the factors responsible for the outmigration of Jordanians.

1. Labour Force

Increase in the outflow of labour can be due to the sheer size of labour force. Jordanian labour force was 2,18,000 in 1961. It increased to 5,83,505 in 1989 (Table 5.3). The number of Jordanian labour force increased to 8,59,300 in 1993. Thus it became a difficult task for the government to absorb the increasing number of labour in the domestic labour market. This has been responsible for the outmigration of people. The correlation coefficient between labour force and outflow turned out to be positive and was around 0.91 (Table 5.4[a]) and 0.85 (Table 5.4[b]) for the period 1970-89 and 1976-89 respectively.

2. Unemployment

Unemployment is one of the factors responsible for outmigration of people. Outmigration in turn can lead to a reduction in unemployment. It can be seen from table 5.4(a) that coefficient of correlation is -0.014, for the period 1970-89 indicating negative relationship between the two. The value of the coefficient indicates a weak relationship. For 1976-89 the value is 0.76 indicating positive relationship.

As discussed in the earlier chapters unemployment can be both a cause and consequence of outmigration. During the sixties unemployment might have induced people to emigrate, and in later years emigration might have in turn helped to reduce the problem of unemployment. The unemployment rate during the Fifties was around 10 percent. It rose to 14 percent in mid Seventies (Table 3.6). The Jordanian emigration rose from 8.8 in 1968-1969 to 13.9 percent in 1974-75 (Table 5.1(a)). During the period 1972-1975 when the annual growth rate of outflow of labour was 13.9 percent, the unemployment rate decreased from 14.0 percent in 1972 to 1.6 percent in 1976. Because of decrease in outflow of labour emigration abroad and due to return migration of labour during 1990-1991 the unemployment rate rose from 1.6 percent in 1976 to 18.8 percent in 1991 as mentioned in chapter IV. The analysis in chapter VI reveals that outmigration had positive impact on unemployment during 1976-1989, contrary to expectation therefore in order to understand the role which unemployment might have played in influencing outflow of labour multivariate regression models for 1970-89 and 1976-89 are estimated. These are presented in the next section.

Table 5.3 : Outflow and Other Macro Economic Aggregates, 1970-1989

Years	Out-flow (in '000)	Labour Force (in '000)	Unemp-loyed (in '000)	Per Capita GDP at Current Prices (JD)	Crude Oil Prices Per Barrel at Current Prices (U.S.$)	Per Capita GDP at 1992=100 Prices (JD)	Crude Oil Prices Per Barrel at 1992=100 Prices (U.S.$)
1	2	3	4	5	6	7	8
1970	103.5	299.9	41.0	124.0	2.10	750.6	8.54
1971	117.9	310.8	43.0	127.7	2.57	740.4	9.87
1972	134.3	322.0	45.1	136.6	2.80	742.6	9.83
1973	152.9	332.8	36.8	143.9	3.14	685.9	9.13
1974	174.2	343.9	27.5	161.1	10.41	627.7	23.89
1975	198.4	355.4	17.3	207.7	10.43	678.6	21.88
1976	216.3	367.2	5.9	297.7	11.63	788.5	24.51
1977	235.8	379.5	8.5	334.8	12.60	805.0	24.61
1978	257.0	392.8	11.3	379.6	12.91	885.5	22.34
1979	280.2	405.3	14.2	431.9	29.19	892.0	43.91
1980	305.4	420.0	17.7	534.4	36.01	1181.0	47.62
1981	312.3	435.4	17.0	645.3	34.17	1308.7	46.87
1982	317.8	451.2	19.4	712.6	31.71	1347.1	45.02
1983	326.4	467.7	22.4	731.6	30.05	1331.0	44.07
1984	334.3	484.7	26.2	739.5	28.06	1323.0	42.34
1985	339.3	502.4	30.1	734.6	24.52	1287.5	41.86
1986	343.3	535.4	42.9	755.0	12.97	1333.0	17.14
1987	339.0	555.7	46.4	732.2	17.73	1231.0	20.93
1988	330.0	572.2	50.3	710.9	14.24	944.0	15.79
1989	340.0	583.5	60.0	709.2	17.31	842.5	19.21
Anul. Avg. Growth Rate							
1970-89	6.13	3.55	2.40	11.20	11.22	3.31	4.85
1976-89	3.13	3.71	16.32	6.90	0.37	1.94	-3.55

Source : Compiled from the Study of Current Status & Future Prospect of Jordanian Labour Market, Data Base Vol. 13, 1989 RSS, (Arabic Origin).

Table 5.4 (a) : Correlation Matrix of Outflow With Explanatory Variables, 1970-1989

	Outflow	Labour Force	Unempl-oyed	PCI Current Price	Oil Current Price	PCI Const-ant Price	Oil Const-ant Price
Outflow	1.000	0.907	-0.014	0.969	0.771	0.807	0.629
Labour Force		1.000	0.366	0.923	0.487	0.643	0.287
Unempl-oyed			1.000	0.123	-0.385	-0.071	-0.567
PCI Current Price				1.000	0.728	0.873	0.571
Oil Current Price					1.000	0.779	0.963
PCI Constant Price						1.000	0.686
Oil Constant Price							1.000

Table 5.4 (b) : Correlation Matrix of Outflow With Explanatory Variables, 1976-1989

	Outflow	Labour Force	Unempl-oyed	PCI Current Price	Oil Current Price	PCI Const-ant Price	Oil Const-ant Price
Outflow	1.000	0.848	0.764	0.972	0.349	0.694	0.105
Labour Force		1.000	0.981	0.829	-0.135	0.290	-0.389
Unempl-oyed			1.000	0.722	-0.232	0.135	-0.493
PCI Current Price				1.000	0.319	0.749	0.101
Oil Current Price					1.000	0.606	0.947
PCI Constant Price						1.000	0.515
Oil Constant Price							1.000

3. Financial Factor:

The financial factor is again one of the factors which influences Jordanian labour force to emigrate. As already mentioned in the earlier chapters, the inadequate indegenous investment capability and consequently backward agriculture, not so developed industrial sectors and low wages are the main push economic factors responsible for outmigration. Though Jordanian labour force in Gulf countries gets lower wages than the local labourers, Jordanian labour continues to emigrate. Their wages in the Gulf are higher than those in Jordan. Many studies have found that young graduates from technical institutes prefer to work abroad because of financial incentives. The surveys of emigrants have shown that about 91 percent of them accept to work abroad because of financial factors[17].

4. Demand pull :

The hike in oil prices during the Seventies caused a rise in the revenue of the Gulf Arab countries. They started ambitious development projects which required labour force on a large scale. The Gulf countries are relatively under populated, and do not have adequate skilled labour, they depend on labour from other countries. The Jordanian labour force in these countries was suitable due to their education, training and skills.[18] Thus Jordanian labour force found new opportunities in Gulf labour markets causing an outflow from Jordan.

In order to analyse the extent of influence of various factors affecting the outflow of labour, using ordinary least square method, following regression equations were estimated in

double log form for the periods 1970-89 and 1976-89. The period 1976-89 is considered to be structurally different from the earlier period due to two reasons i) Unemployment was influenced by outmigration rather than being responsible for outmigration and ii) oil prices declined during this period.

$$O = b_0 + b_1L + b_2U + b_3PCI + b_4O.P + e$$

Where, O = Outflow, L = labour force, U = unemployment, PCI = per capita income (at current and alternatively at constant price) of Jordan, O.P = oil prices (at current and alternatively at constant prices), b_0 is the intercept and e is the error term. In order to analyse the impact of financial factors comparable information on real wages and real per capita income of Jordan and other Gulf countries was sought but in vain. Ultimately per capita income of Jordan and oil prices at current and constant prices were selected as explanatory variables to explain outmigration. The economy of the neighbouring countries is closely dependent on the movement of oil prices, because oil prices represent the financial factor responsible for outmigration. The Jordanian per capita income data are in terms of Jordanian Dinar whereas oil prices data are in terms of U.S. dollars. Since the model is in double log form and ß coefficients are elasticities, no adjustments were done to convert either of the series in terms of one currency. This was justified by the econometricians with whom discussions were held.

b values are regression coefficients to be estimated. All the explanatory variables (Table 5.3) are lagged by one year.

Regression Results

The results of estimated regression equations are shown in Table 5.5(a).

Regression Results 1, 2,3

These regression equations are for the period 1970-89. The results of regression 1 results show that labour force, unemployment and oil prices were statistically significant explanatory variables. As expected the regression coefficients of labour force and oil prices were positive, indicating both push and pull factors influencing outmigration of Jordanian labour. The regression coefficient of unemployment was -0.0947, implying that 1 percent increase in unemployment leads to 0.0947 percent fall in outmigration. This was contrary to the expectation that high unemployment in the domestic economy, encouraged people to outmigrate. Since labour force includes unemployed, regressions 2 and 3 were estimated excluding unemployed and labour force. The results of regression 2 show that labour force and oil prices were statistically significant variables. The regression coefficient of oil prices in this equation had a higher value than regression 1. Explanatory power of labour force in this equation is less. It is 0.70 as compared to 1.13 in regression 1. When labour force as an explanatory variable is dropped both per capita income and oil prices turn out to be statistically significant variables. The positive sign

of b coefficient of per capita income is not as per our expectation. On the basis of the results of the equations, it can be concluded that the labour force and prosperity of the neighbouring countries are responsible for outmigration from Jordan.

Regression Results 4,5,6

The results of these equations show that none of the variables was statistically significant except per capita income of Jordan. The positive values of the coefficient were contrary to the expectation that increase/decrease in per capita income would lead to a fall/increase in outmigration of people. The model could not be refined due to paucity of data. Thee regression equation dropping oil prices and including per capita income of Saudi Arabia were estimated however the results did not improve (Results not reported here). If comparable information related to real values of per capita income or wages were available, the results would have indicated some difference in the nature and intensity of the influence of the variables.

Table 5.5(a) : Regression Results (I) Explaining Outflow of Jordanian Labour

Regression Equations	1970-1989 1	2	3	1976-1989 4	5	6
Number of observations	19	19	19	14	14	14
Constant	-0.569	0.20	3.31	1.21	1.20	3.67
Labour force in Jordan$_{-1}$	1.139 (4.08)*	0.701 (2.43)**	--	0.20 (0.50)	0.20 (1.02)	--
Unemployment in Jordan$_{-1}$	-0.0947 (-2.928)*	--	-0.0237 (-0.61)	0.00083 (0.017)	-	0.0215 (0.864)
Per capita income/at current prices/ of Jordan$_{-1}$	-0.017 (-0.18)	0.058 (0.50)	0.33 (5.25)*	0.241 (2.06)**	0.239 (7.70)*	0.295 (6.57)*
Nominal oil prices$_{-1}$	0.154 (4.03)*	0.196 (4.50)*	0.113 (2.14)**	0.057 (1.19)	0.058 (1.47)	0.038 (1.34)
R^2	0.98	0.97	0.96	0.96	0.96	0.96
F	176.08	154.07	111.90	56.07	83.06	80.65

* Denotes Statistically Significant at 1% level.
** Denotes Statistically Significant at 5% level.

All the equations show that around 95 percent variation in the dependent variable could be explained by the explanatory variables. F values indicating overall goodness of the fit of the models also were statistically significant. Though the results for the period 1976-89 were not conclusive suffice, both push and pull factors of labour force and prosperity of the neighbouring countries induce outmigration from Jordan.

Table 5.5(b) gives regression results based on explanatory variables of P.C.I and oil prices at constant prices of 1992=100. Equation 1 shows that labour force, unemployment and oil prices were statistically significant variables. One percent increase in labour force leads to 1.40 percent increase in outflow of labour. One percent increase in unemployment leads to 0.108 percent fall in outflow. This was contrary to the expectation of positive relationship between the two. The positive sign of coefficient of oil prices is as per the expectation. 97 percent variation in outflow of labour is explained by the explanatory variables. As already mentioned unemployed are a part of labour force, therefore regression equations 2 and 3 were estimated dropping unemployment and labour force. Regression equation 2 shows that labour force and oil prices were statistically significant variables and the positive sign of the coefficients was as expected. Equation 3 shows that only P.C.I turned out to be statistically significant variable, the positive sign of the coefficient was not as per the expectation. The equation explained only about 70 variation in the dependent variable. The F statistics was lower than the other two equations.

The overall results for the period 1970-89, were the same as obtained on the basis of current prices data. Labour force indicating push factor and oil prices indicating pull factor emerge as factors responsible for variation in outflow of labour.

Equations 4,5,6, pertain to the period 1976-1989. In equation 4, labour force and oil prices turned out to be statistically significant variables. 90 percent variation was explained by the explanatory variables. In equation 5, again labour force and oil prices were statistically significant variables. In equation 6, labour force, is dropped one finds only P.C. income only to be the statistically significant variable. The sign of the coefficient was not as per expectation, i.e., increase in per capita income leads to a reduction in the outflow of people. The explanatory power of the equation was to the extent of 80 percent. On the whole the results based on constant prices data again indicate that labour force and oil prices influence the outflow of labour.

Table 5.5(b) : Regression Results (II) Explaining Outflow of Jordanian Labour

Regression Equations	1970-1989 1	2	3	1976-1989 4	5	6
Number of observations	19	19	19	14	14	14
Constant	-2.68	-2.07	0.46	-1.00	-0.12	2.72
Labour force in Jordan$_{-1}$	1.40 (11.21)*	1.32 (8.60)*	--	0.95 (3.50)*	0.76 (4.50)*	--
Unemployment in Jordan$_{-1}$	-0.108 (-3.10)*	--	-0.254 (-0.24)	-0.045 (0.87)	-	0.094 (1.97)
Per capita income/at constant prices/ 1992=100$_{-1}$	-0.0659 (-0.62)	-0.18 (-1.45)	0.636 (2.43)*	0.091 (0.75)	0.106 (0.87)	0.372 (2.73)*
Constant oil prices in US Dollars 1992=100$_{-1}$	0.178 (3.84)*	0.283 (7.09)*	0.248 (1.77)	0.13 (2.38)**	0.125 (2.38)**	0.032 (0.49)
R^2	0.97	0.95	0.71	0.90	0.90	0.79
F	140.469	116.82	15.59	31.13	42.25	17.59

* Denotes Statistically Significant at 1% level.
** Denotes Statistically Significant at 5% level.

5.5 Characteristics of Jordanian Labour Force Abroad

In order to understand the impact of outflow of Jordanian labour it is necessary to analyse their nature of absorption in the labour market of the Gulf countries, in terms of jobs, occupations etc. The present section deals with this aspect of labour market of Jordan.

1) Structure of the jobs.

Table 5.6 shows the distribution of labour force abroad according to occupational groups. In 1970, the percentage of Jordanians abroad to that of employed in Jordan was about 40 percent, which increased to 75 percent in 1980, but declined thereafter and was 65 percent in 1989. It means that a sizable number of emigrants constitute a potential component of labour force of Jordan. As far as occupational groups are concerned, one finds that in 1970 the percentage of specialists abroad to that of employed in Jordan was as high as 76.8, which was the highest when compared to other occupational categories. Over the years the specialists and technicians outmigrated on a large scale as the percentage abroad to that of employed in Jordan exceeded more than 100 percent. Similar was the case with managers and administrators. In case of the remaining categories also one finds an increase in the percentage ratio. This means that if all these people decide to return to Jordan, the need for creating jobs would be immense. At the same time such educated skilled personnel working abroad also are a loss to Jordan as the services of these can be utilized in Jordan. This can also be confirmed in terms of relative distribution of them in the

domestic and foreign labour market, in terms of the percent share of labour force in these occupations to total labour force of Jordan and of Jordanians abroad to labour force of other countries. The share of specialists and technicians was 13.4 percent of the total labour force abroad in 1970 while it did not exceed 6.8 percent among the domestic labour force. During the Seventies and the Eighties the share of specialists and technicians in the labour force abroad increased and was 25.8 percent in 1989. However, in the domestic labour force their share was 16.8.

The share of those working in administration and others was 2.1 percent in 1970 and in domestic labour market 1.1 percent during the same year. But it increased to 3.7 percent and 1.8 percent respectively in 1989. The clerks were 6 percent of the total emigrated labour force during 1970-1989, while the workers in agriculture were only 0.9 percent of the total labour force abroad.

2) Economic activity

In 1970, the percentage of Jordanians abroad to employed in Jordan was about 1.98, 127.4, 113.3, 50.8, 93.1, 17.6, 67.4 and 26 respectively of agriculture, industry, electricity, construction, trade, transport & communication, financial services and social and public administration (Table 5.7). Thus the very sectors which can promote growth, one finds more than 100 percent of potential Jordanian labour working abroad. However, over the years there were significant changes. From 1985 onwards there was a decline in the percentage ratio of

Jordanians working abroad in different economic activities to those working in Jordan except in the case of agriculture where there was a substantial increase from 9.4 percent in 1980 to 34.7 in 1989. This increase is attributable to the fact that many unskilled outmigrant Jordanians who fail to get absorbed in urban informal sector abroad, get absorbed in agricultural sector. In relative terms agriculture is more renumerative abroad than in Jordan. This also indicates that if such workers return to Jordan and take up agricultural activities, they will be able to displace immigrants in this sector. Inspite of the decline, one thing is clear that a significant proportion of potential workers are working abroad in different sectors.

The distribution of labour force in various economic activities in 1970 (Table 5.7) shows its concentration in social and public administration and agriculture. Next is trade and industry having about 9 percent of labour force. The share of Jordanians abroad in industry is as high as 30 percent and in trade 21 percent. Over the years there has been an increase in the share of Jordanians abroad in the agriculture sector, whereas there is a decline in industrial sector and trade. There is also an increase in their share in construction activities and in social and public administration etc. This also gets confirmed from the time series data of tables 5.7 and 5.8. Corresponding to such changes abroad, one does not find an increase in the share of work force in growth promoting domestic industry and trade sectors. There was some increase in their share in transport and communication, which increased from around 6 percent in 1970 to 9 percent in 1989.

Thus the change in the nature of emigration did not have much impact on the nature of labour force participation in the domestic economy. This shows that Jordanian economy did not have structural transformation as the percentage distribution of work force in various economic activities almost remained the same.

3) Educational level

Tables 5.8 and 5.9 show the distribution of the labour force in Jordan and abroad as per different levels of education. The percentage ratio of workers working abroad having below secondary education to those employed in Jordan was 17.7, which increased to 32.1 percent in 1989. However, the corresponding percentages for workers having secondary and post graduate education were more than 100 percent. This clearly implies that a considerable number of educated workers who can contribute to Jordanian economy are working abroad. Over the years this ratio has gone down, even though it was still very high in 1989. Though there was a decline in the case of Bachelors degree and Post graduate degree holders during 1970-1989, the ratios were still as high as 88.5 percent and 188.6 percent in 1989. We can therefore summerise that the problem of brain drain does exist.

The share of Jordanians with secondary level education in the labour force abroad was as high as 50 percent. In the domestic market, the share in 1989 was 28 percent which was only 9.3 in 1970. In the case of other education categories also one

finds an increase. However, the share abroad was relatively high. This also shows that educated Jordanians play an important role in the economy of neighbouring countries and to that extent there is a loss to the Jordanian economy. Tables 5.9 and 5.9(a) also confirm this. The share of emigrants with higher education increased from 6.7 percent in 1968 to 24.1 percent in 1989, where as the share of emigrants having general secondary level of education declined.

Table 5.10 gives a comparative picture of Jordanians working in Jordan and abroad. It is interesting to observe that between 1970 and 1989, the percentage share of Jordanians working in Jordan has increased in the occupations such as specialists and technicians and productive and unclassified categories. In case of those working abroad also the percentage share of specialists and technicians and productive and unclassified is dominant. in case of occupations such as specialists and salesmen, one finds sharp changes from 1985 onwards in case of percentage distribution of Jordanians working in Jordan.

The picture as per the economic activity reveals that the percentage share of Jordanian workers working in Jordan in agriculture sector has declined. It has also declined in sectors such as construction and transport and communication. However, these changes are more pronounced during 1985-89. Jordanians who are working abroad are mostly concentrated in industry, construction, trade and majority being in social and public administration. It is rather surprising that the percentage

share of those employed in agriculture has increased over a period of time. However in sectors like industry, trade the percentage share decreased between 1970 and 1989.

As far as distribution of Jordanians on the basis of education is concerned one finds that the share of below secondary in total employed has declined in Jordan and the share of all the remaining categories has increased. Outside Jordan the share of below secondary has remained constant between 1980-89. In the case of Secondary, the share has gone down whereas in the case of lower Diploma and Bachelor degree it has increased. The significant thing is that outside Jordan out of the total employed a higher percentage is constituted by workers having above "below secondary" level of education as compared to those who are working in Jordan. Thus as mentioned earlier this is a definite loss to Jordan and at the same time it calls for growth of Jordanian economy so that it can attract this potential labour force to return to Jordan.

Table 5.6 : Distribution of Labour Force, Employed and Workers Abroad by Occupational Group for Chosen Years, 1970 - 1989

(In '000)

Years	Workers	Specialist & Technicians	Manager & Administrative	Clerks	Sales-Men	Services	Agriculture	Productive & Unclassified	Total (in '000)
1	2	3	4	5	6	7	8	9	10
1970	Labour Force	20.40	3.30	16.90	21.80	18.40	57.10	162.00	299.90
	Employed in Jordan	18.10	2.90	15.00	19.30	16.40	50.70	136.50	258.90
	Workers Abroad	13.90	2.20	5.70	7.30	5.10	0.90	68.40	103.50
	Ratio of WA to EMJO (%)	76.80	75.86	38.00	37.82	31.10	1.78	50.10	39.77
	% Share in Labour Force Abroad	13.40	2.10	5.50	7.10	4.90	0.90	66.10	-
1975	Labour Force	34.70	4.90	21.90	27.20	22.10	49.80	194.80	355.40
	Employed in Jordan	33.00	4.70	20.80	25.90	21.00	47.40	185.30	338.10
	Workers Abroad	27.80	4.00	11.14	11.10	7.50	1.80	135.10	198.44
	Ratio of WA to EMJO (%)	84.24	85.11	53.56	42.86	35.71	3.80	72.91	58.69
	% Share in Labour Force Abroad	14.00	2.00	5.60	5.60	3.80	0.90	68.10	-
1980	Labour Force	55.70	6.90	26.80	34.60	26.60	42.20	227.20	420.00
	Employed in Jordan	53.50	6.70	25.60	33.40	25.70	41.40	219.00	405.30
	Workers Abroad	67.20	6.40	18.20	7.60	5.00	3.80	197.20	305.40
	Ratio of WA to EMJO (%)	125.61	95.52	71.09	72.75	19.46	9.18	90.04	75.35
	% Share in Labour Force Abroad	22.00	2.10	6.00	2.50	1.60	1.20	84.60	-

(Cont...)

Table 5.6 : Distribution of Labour Force, Employed and Workers Abroad by Occupational Group for Chosen Years, 1970 - 1989

(In '000)

Years	Workers	Specialist & Technicians	Manager & Administrative	Clerks	Sales-Men	Services	Agriculture	Productive & Unclassified	Total (in '000)
1	2	3	4	5	6	7	8	9	10
1985	Labour Force	72.80	7.30	28.60	45.70	32.10	30.60	285.30	502.40
	Employed in Jordan	63.30	6.60	25.80	44.50	30.00	29.70	272.60	472.50
	Workers Abroad	86.50	11.50	19.00	14.00	12.50	12.70	182.60	338.80
	Ratio of WA to EMJO (%)	136.65	174.24	73.64	31.46	41.67	42.76	66.98	71.70
	% Share in Labour Force Abroad	25.50	3.40	5.80	4.10	3.70	3.70	53.80	-
1989	Labour Force	98.00	10.50	35.60	50.20	31.50	33.30	324.40	583.50
	Employed in Jordan	71.00	7.20	29.90	49.00	31.10	32.70	302.60	523.50
	Workers Abroad	87.40	12.40	19.05	15.80	12.80	12.70	178.10	338.25
	Ratio of WA to EMJO (%)	123.10	172.22	63.71	32.24	41.16	38.84	58.86	64.60
	% Share in Labour Force Abroad	25.80	3.70	5.80	4.70	3.80	3.70	52.50	-

Note : EMJO = Employed in Jordan and
WA = Jordanian Workers Employed Abroad.

Sources :1.Issa Ibrahim & Others, Study of Current Status and Future of Jordan Labour Market, RSS, Economic Research Centre, Amman Dec., 1989

2.Ministry of Labour Research Directory, Annual Report 1989, Jordan.

Table 5.7 : Distribution of Labour Force, Employed and Workers Abroad by Economic Activities for Chosen Years, 1970 - 1989

(In '000)

Workers Status/ Year	Agri-cult-ure	Indus-try & Mining	Electri-city & Water	Const-ruct-ion	Trade	Trans-port & Commun-ication	Finan-cial Servi-ces	Social & Def-nce & Public Admin-strat-ion	Total (in '000)
1	2	3	4	5	6	7	8	9	10
[1970]									
Labour Force	58.40	27.90	1.70	27.30	26.90	19.70	5.30	132.70	299.9
Employed in Jordan	50.40	24.10	1.50	23.60	23.20	17.00	4.60	114.50	258.9
Workers Abroad	1.00	30.70	1.70	12.00	21.60	3.40	3.10	30.00	103.5
Ratio of WA to EMJO (%)	1.98	127.40	113.30	50.80	93.10	17.60	67.40	26.00	40.0
% Share in Labour Force Abroad	0.90	29.70	1.60	1.60	20.90	3.30	3.00	29.01	-
[1975]									
Labour Force	51.60	31.60	2.20	37.20	34.30	26.20	7.00	165.30	355.4
Employed in Jordan	50.20	30.70	2.10	36.20	33.30	25.50	6.80	153.30	338.1
Workers Abroad	2.00	54.00	3.40	24.20	39.70	6.70	6.50	61.90	198.4
Ratio of WA to EMJO (%)	3.90	175.90	161.10	66.80	119.30	26.30	95.60	40.40	58.7
% Share in Labour Force Abroad	1.00	27.20	1.70	12.20	20.00	3.90	3.30	31.20	-
[1980]									
Labour Force	42.90	37.20	2.80	52.80	42.60	31.20	9.60	200.90	420.0
Employed in Jordan	41.40	35.90	2.70	50.90	41.10	30.10	9.30	193.90	405.3
Workers Abroad	3.90	50.60	5.50	48.60	57.50	15.80	9.40	114.10	305.4
Ratio of WA to EMJO (%)	9.40	140.90	203.70	95.50	139.90	52.40	101.10	58.80	75.3
% Share in Labour Force Abroad	1.30	16.60	1.80	15.90	18.80	5.20	3.10	37.40	-

(Cont...)

Table 5.7 : Distribution of Labour Force, Employed and Workers Abroad by Economic Activities for Chosen Years, 1970 - 1989 (In '000)

Workers Status/ Year	Agri-cult-ure	Indus-try & Mining	Electri-city & Water	Const-ruct-ion	Trade	Trans-port & Commun-ication	Finan-cial Servi-ces	Social & Def-nce & Public Admin-strat-ion	Total (in '000)
1	2	3	4	5	6	7	8	9	10
[1985]									
Labour Force	39.20	53.10	5.50	55.30	50.20	47.20	17.10	234.80	502.4
Employed in Jordan	36.90	49.90	5.20	51.90	47.20	44.40	16.10	220.70	472.3
Workers Abroad	12.90	44.00	6.80	55.50	56.00	23.40	10.50	130.20	339.3
Ratio of WA to EMJO (%)	34.90	88.20	130.80	106.90	118.60	52.70	65.20	59.00	71.8
% Share in Labour Force Abroad	3.80	13.00	2.00	15.70	16.50	6.90	3.10	38.40	-
[1989]									
Labour Force	42.30	62.50	9.50	64.20	58.30	54.80	19.10	272.80	583.5
Employed in Jordan	37.70	54.40	7.30	50.80	53.40	46.10	16.20	257.60	523.5
Workers Abroad	13.10	42.50	6.80	53.30	54.80	25.30	10.60	132.60	340.0
Ratio of WA to EMJO (%)	34.70	78.10	93.00	93.20	102.60	54.90	65.90	51.50	64.9
% Share in Labour Force Abroad	3.90	12.50	2.00	15.70	16.20	7.50	3.10	39.10	-

Source : Same as in Table 5.3.

Table 5.8 : Distribution of Labour Force, Employed and Workers Abroad by Educational Level for Chosen Years, 1970 - 1989 (In '000)

Workers Status/ Years	Below Secondary	Secondary	Lower Diploma	Bachelor	Post Graduate	Total (in '000)
1	2	3	4	5	6	7
[1970]						
Labour Force	242.10	27.90	11.70	16.50	1.70	299.9
Employed in Jordan	207.00	25.10	10.40	14.90	1.50	258.9
Workers Abroad	36.60	57.90	2.80	4.30	1.90	103.5
Ratio of WA to EMJO (%)	17.70	230.70	26.90	28.90	126.60	40.0
% Share in Labour Force Abroad	35.40	55.90	2.70	4.20	1.80	-
[1975]						
Labour Force	277.30	36.20	18.90	20.50	2.50	355.4
Employed in Jordan	262.20	35.20	18.40	19.90	2.40	338.1
Workers Abroad	60.50	110.90	7.30	15.50	4.20	198.4
Ratio of WA to EMJO (%)	23.10	315.10	39.70	77.90	175.00	58.7
% Share in Labour Force Abroad	30.50	55.90	3.70	7.80	2.10	-
[1980]						
Labour Force	304.40	54.20	31.00	26.80	3.60	420.0
Employed in Jordan	294.40	51.90	29.60	25.90	3.50	405.3
Workers Abroad	79.80	167.70	17.60	32.40	7.90	305.4
Ratio of WA to EMJO (%)	27.10	323.10	59.50	125.10	225.70	75.4
% Share in Labour Force Abroad	26.10	54.90	5.80	10.60	2.60	-
[1985]						
Labour Force	287.00	119.50	47.40	43.70	4.80	502.4
Employed in Jordan	276.50	112.00	40.00	39.70	4.10	472.3
Workers Abroad	88.50	171.00	29.50	42.00	8.30	339.3
Ratio of WA to EMJO (%)	32.00	152.70	73.80	105.80	202.40	71.8
% Share in Labour Force Abroad	26.10	50.40	8.70	12.40	2.40	-
[1989]						
Labour Force	298.00	162.80	60.50	56.50	5.70	583.5
Employed in Jordan	275.10	147.70	47.40	48.90	4.40	523.5
Workers Abroad	88.40	168.80	30.00	43.30	8.30	338.8
Ratio of WA to EMJO (%)	32.10	114.30	63.30	88.50	188.60	64.7
% Share in Labour Force Abroad	26.10	49.60	8.80	12.80	2.40	-

Source : Same as in Table 5.3.

Table 5.9 : Distribution of Emigrant Jordanian Labour According to Educational Level and Economic Activities, 1968 - 1989

(in '000)

Year	Educational Level			Economic Activity					
	General Secondary & below	Lower Diploma Bachelor & Post Graduate Studies	Total	Agriculture	Industry & Mining	Construction	Trade	Social Services	Others
1	2	3	4	5	6	7	8	9	10
1968	81.6	5.9	87.5	0.8	24.5	9.0	16.9	30.1	6.2
1969	88.0	7.2	95.2	0.9	27.4	10.4	19.0	30.3	7.2
1970	94.5	9.0	103.5	1.0	30.7	12.0	21.6	30.0	8.2
1971	106.7	11.2	117.9	1.2	34.4	13.8	24.4	34.6	9.5
1972	120.3	14.0	134.3	1.3	38.5	15.9	27.5	39.8	11.3
1973	135.6	17.3	152.9	1.5	43.1	18.3	31.1	46.2	12.7
1974	152.5	21.7	174.2	1.7	48.2	21.0	35.1	53.8	14.4
1975	171.4	27.0	198.4	2.0	54.0	24.2	39.7	61.9	16.6
1976	184.6	31.7	216.3	2.2	53.6	28.3	43.6	69.5	19.1
1977	198.6	37.2	235.8	2.4	53.3	33.0	47.9	77.3	21.9
1978	213.2	43.8	257.0	2.7	53.0	38.6	52.6	84.9	25.2
1979	228.7	51.5	280.2	3.9	52.7	45.1	57.7	91.8	29.0
1980	247.5	57.9	305.4	3.9	50.6	48.6	57.5	114.1	30.7
1981	250.0	62.3	312.3	5.2	48.6	52.4	57.3	116.3	32.5
1982	252.0	65.8	317.8	7.0	47.0	54.7	57.2	117.1	34.8
1983	255.4	71.0	326.4	9.5	46.0	58.0	57.0	119.6	36.3
1984	257.8	76.5	334.3	12.7	45.5	57.0	56.8	123.8	38.5
1985	259.5	79.8	339.3	12.9	44.0	55.5	56.0	130.3	40.7
1986	260.5	82.8	343.3	13.3	43.0	54.0	55.5	134.3	43.2
1987	257.2	81.8	339.0	13.1	42.5	53.3	54.8	132.6	42.7
1988	250.4	79.6	330.0	12.9	41.4	51.9	53.3	129.1	41.4
1989	258.0	82.0	340.0	13.3	42.5	53.5	55.1	133.0	42.6
Anul.Avg. Growth Rate	5.7	12.9	6.8	15.4	1.6	9.1	5.5	8.3	9.6

Source :1) Royal Scientific Society, Current Status & Future of Jordan Labour Market, 1989.

2) Hussein Alkhatib, Estimation of Jordanian Labour Force Abroad, Ministry of Planning, Unpublished Research, The Distribution of Jordanian Labour Force Abroad Aaccording to Educational level & Economic Activity, Jordan.

Table 5.9(a) : Percentage Distribution of Emigrant Jordanian Labour According to Educational Level and Economic Activities, 1968 - 1989

Year	Educational Level			Economic Activity						
	General Secondary & below	Lower Diploma Bachelor & Post Graduate	Total	Agriculture	Industry & Mining	Construction	Trade	Social Services	Others	Total
1	2	3	4	5	6	7	8	9	10	11
1968	93.3	6.7	100.0	0.9	28.0	10.3	19.3	34.4	7.1	100.0
1969	92.4	7.6	100.0	0.9	28.8	10.9	20.0	31.8	7.6	100.0
1970	91.3	8.7	100.0	1.0	29.7	11.6	20.9	29.0	7.9	100.0
1971	90.5	9.5	100.0	1.0	29.2	11.7	20.7	29.3	8.1	100.0
1972	89.6	10.4	100.0	1.0	28.7	11.8	20.5	29.6	8.4	100.0
1973	88.7	11.3	100.0	1.0	28.2	12.0	20.3	30.2	8.3	100.0
1974	87.5	12.5	100.0	1.0	27.7	12.1	20.1	30.9	8.3	100.0
1975	86.4	13.6	100.0	1.0	27.2	12.2	20.0	31.2	8.4	100.0
1976	85.3	14.7	100.0	1.0	24.8	13.1	20.2	32.1	8.8	100.0
1977	84.2	15.8	100.0	1.0	22.6	14.0	20.3	32.8	9.3	100.0
1978	83.0	17.0	100.0	1.1	20.6	15.0	20.5	33.0	9.8	100.0
1979	81.6	18.4	100.0	1.4	18.8	16.1	20.6	32.8	10.3	100.0
1980	81.0	19.0	100.0	1.3	16.6	15.9	18.8	37.4	10.1	100.0
1981	80.1	19.9	100.0	1.7	15.6	16.8	18.3	37.2	10.4	100.0
1982	79.3	20.7	100.0	2.2	14.8	17.2	18.0	36.8	11.0	100.0
1983	78.2	21.8	100.0	2.9	14.1	17.8	17.5	36.6	11.1	100.0
1984	77.1	22.9	100.0	3.8	13.6	17.1	17.0	37.0	11.5	100.0
1985	76.5	23.5	100.0	3.8	13.0	16.4	16.5	38.4	12.0	100.0
1986	75.9	24.1	100.0	3.9	12.5	15.7	16.2	39.1	12.6	100.0
1987	75.9	24.1	100.0	3.9	12.5	15.7	16.2	39.1	12.6	100.0
1988	75.9	24.1	100.0	3.9	12.5	15.7	16.2	39.1	12.5	100.0
1989	75.9	24.1	100.0	3.9	12.5	15.7	16.2	39.1	12.5	100.0

Source : Based on table 5.9.

Table 5.10 : Percentage Distribution of Labour Employed in Jordan and Abroad Based on Occupation,Economic Activities and Educational Level, 1970-1989

Occupation\ Economic Activity\Educational Level	1970		1975		1980		1985		1989	
	EJ	EA	EJ	EA	EJ	EA	EJ	EA	EJ	EA
1	2	3	4	5	6	7	8	9	10	11
Occupation										
Spe. & Tech.	7.0	13.4	9.8	14.0	13.2	22.0	13.4	25.5	25.8	25.7
Manager and Administ.	1.5	2.1	1.4	2.0	1.7	2.1	1.4	1.4	3.7	3.7
Clerks	5.8	5.5	6.2	5.6	6.3	6.0	5.5	5.4	5.6	5.6
Salesmen	7.5	7.1	7.7	5.6	8.2	2.5	9.4	2.2	4.7	4.7
Services	6.3	4.9	6.2	3.8	6.3	1.6	6.3	1.5	5.9	3.8
Agriculture	19.6	0.9	14.0	0.9	10.2	1.2	6.3	1.1	6.2	3.7
Prod.& Uncl.	52.7	66.2	54.8	68.1	54.0	64.6	57.7	68.1	57.8	52.4
Economic Activity										
Agriculture	19.5	1.0	14.9	1.0	10.2	1.3	7.8	3.8	7.2	3.9
Industry and Mining	9.3	29.6	9.1	27.2	8.9	16.6	10.6	13.0	10.4	12.5
Electricity and Water	0.6	1.6	0.6	1.7	0.7	1.8	1.1	2.0	1.4	2.0
Construction	9.1	11.6	10.7	12.2	12.6	15.9	11.0	16.4	9.7	15.7
Trade	0.4	20.9	9.9	20.0	10.1	18.8	10.0	16.5	10.2	16.1
Transport & Communication	6.6	3.3	7.5	3.4	7.4	5.2	9.4	6.9	8.8	7.4
Financial Services	1.8	3.0	2.0	3.3	2.3	3.1	3.4	3.1	3.1	3.1
Social and Defence	44.2	29.0	45.3	31.2	47.8	37.4	46.7	38.4	49.2	39.0
Educational Level										
Below Secondary	80.0	35.4	77.6	30.5	72.6	26.1	58.5	26.1	52.6	26.0
Secondary	9.7	55.9	10.4	55.9	12.8	54.9	23.7	50.4	28.2	49.7
Lower Diploma	4.0	2.7	5.4	3.7	7.3	5.8	8.5	8.7	9.1	8.8
Bachelor	5.8	4.2	5.9	7.8	6.4	10.6	8.4	12.4	9.3	12.7
Post Graduate	0.6	1.8	0.7	2.1	0.9	2.6	0.9	2.5	0.8	2.4

Note : EJ = Employed in Jordan, EA = Employed Abroad.
ource : Based on tables 5.6, 5.7 and 5.8.

5.6 Effects of Outmigration of Jordanian Labour Force

Emigration has both positive and negative impacts on an economy. In case of Jordan, like many other developing countries, the poor data base is a major constraint to quantify the net impact on the economy. Political problems also add to this difficulty by making uncertain the likely changes in the outflow and inflow of labour in Jordan. Hence, future prediction is subject to the factors which are beyond the control of the economy.

During 1970-87, outflow of labour has helped Jordanian economy in terms of remittances. The following regression equation was estimated in double log to estimate the effect of outflow on remittances for the period 1970-1987.

Table 5.11 : Regression Results: Outflow Regressed on Remittances.

$$\text{Remittances} = b_0 + b_1 \text{ Outflow}$$

$$\text{Remittances} = -7.53 + \underset{(24.38)^*}{4.02} \text{ Outflow}$$

$$R^2 = 0.97$$

* Significant at 1% level.

It can be seen that 1 percent increase in outflow of labour leads to 4.02 percent increase in the remittances. The value of R^2 was 0.97. Thus it shows that outflow has helped Jordanian economy significantly to increase the remittances.

In Jordan the remittances increased from JD 5.5 million in 1970 to JD 763.7 million in 1994 (see table 5.15). Remittances is one of the main sources of national income of the Jordanian economy. Its share was as high as 25 percent in 1984. In 1994 the share was 19 percent. The other major impact of outmigration is the decrease in unemployment rate in the domestic labour market as mentioned earlier.

The sector wise relationship between emigration and unemployment can be seen from the table 5.12. The ratio of outmigration to immigration in the case of almost all the sectors has declined between 1980 and 1989. Corresponding to that the unemployment has increased. In case of public administration and social services, the ratio increased in 1985 and decreased in 1989. However it was much above one. The unemployment still remained as high as 6 percent to the labour force. The reason for this may be that people prefer to get absorbed in this sector rather than to work in other sectors. The overall picture of the economy as a whole does support the hypothesis that outmigration does help Jordan to combat its unemployment problem since the low outmigration to inmigration ratio is associated with high unemployment rate.

Table 5.12 : Migration and Unemployment in Jordan During 1980,1985 and 1989

Sector	Year	Immigr-ation	Out Migration	Ratio of Out Migration to Immigr-ation	Un-Employed	Labour Force	Un-Employed as % of Labour Force
1	2	3	4	5	6	7	8
Agricul-ture	1980	11480	3900	0.34	1500	42900	3.50
	1985	49073	12900	0.26	2300	39200	5.87
	1989	68648	13100	0.19	4600	42300	10.87
Mining & Manufac-turing	1980	4109	50600	12.31	1300	37200	3.49
	1985	11530	44000	3.82	3200	53100	6.03
	1989	16127	42500	2.64	8100	62500	12.96
Electr-icity and Water	1980	319	5500	17.24	100	2800	3.57
	1985	1430	6800	4.76	300	5500	5.45
	1989	2000	6800	3.40	2200	9500	23.16
Construc-tion	1980	22371	48600	2.17	1900	52800	3.60
	1985	44330	55500	1.25	3400	55300	6.15
	1989	62000	53300	0.86	13400	64200	20.87
Commerce/ Trade	1980	5563	57500	10.34	1500	42600	3.52
	1985	11985	56000	4.67	3000	50200	5.98
	1989	16762	54800	3.27	4900	58300	8.40
Transport & Commun-ication	1980	1553	15800	10.17	1100	31200	3.53
	1985	7865	23400	2.98	2800	47200	5.93
	1989	11000	25300	2.30	8700	54800	15.88
Financial Services	1980	712	9400	13.20	300	9600	3.13
	1985	2860	10500	3.67	1000	17100	5.85
	1989	4000	10600	2.65	2900	19100	15.18
Social Services, Defence & Public Adminis-tration	1980	33459	11410	0.34	7000	200900	3.48
	1985	13917	130200	9.36	14100	234800	6.01
	1989	19463	132600	6.81	15200	272800	5.57
Total	1980	79566	305400	3.84	14700	420000	3.50
	1985	143000	339300	2.37	30100	472300	6.37
	1989	200000	339000	1.70	60000	583500	10.28

Sources: Compiled on the basis of data given in Chapters 3,4 & 5.

In order to establish the relationship between outmigration and unemployment, Granger's test of causality between these two macro economic aggregates was applied. Here it should be made clear that Granger's test helps to determine the lead and led relationship between outflow and unemployment. This test is not a test of "causality". It only examines whether a particular variable precedes another variable. A variable preceding another variable might cause the growth of the latter but the test is not conclusive.

The following linear equations were estimates to find out whether out migration precedes unemployment or otherwise.

1 = Y = f (past lags of Y and past lags of X)

2 = Y = f (past lags of Y)

3 = X = f (past lags of Y and past lags of X)

4 = X = f (past lags of X)

Where Y = outmigration and X = unemployment.

Lags were taken in terms of 2 and 3 years.

In case of Granger's causality test the values (Chow test) if significant means causality is running from X to Y in equations 1 and 2 and from Y to X in equations 3 and 4. The test helps in examining the hypothesis that the coefficients of past values of X (or Y) are jointly equal to zero when they happen to be dependent variables. In terms of Granger's test causality is based on the logic that the forecast of the dependent variable outmigration (or unemployment), using both lagged values of outmigration and unemployment gives a better forecast than forecasts which is based solely on lagged values of outmigration

(or unemployment). This implies that outmigration (or unemployment) is said to precede unemployment (or outmigration).

Regression Results

The regression results are shown in Tables 5.13 and 5.14. Those results would show whether outmigration or unemployment precedes or follows each other. In the equation I and II (part A) and V and VI (part B), outmigration is the dependent variable. The null hypothesis that lagged values of unemployment do not improve the forecast of outmigration as compared to the results obtained on the basis of the lagged values of outmigration was tested taking 2 years and 3 years lag in part A and part B respectively.

In equations I and II and V and VI Chow test was not statistically significant. This shows that the coefficients associated with lagged values of unemployment were together statistically not different from zero. Thus unemployment does not precede and therefore does not improve the forecasts of outmigration.

In equations III & IV (part A) and VII & VIII (part B), where dependent variable is unemployment, one finds that Chow test was statistically significant. It means that the coefficients associated with lagged values of outmigration were together statistically different from zero. Thus outmigration preceded and improved the forecasts of unemployment.

The results indicate that unidirectional causality runs from outmigration to unemployment and not vice versa. It can be therefore inferred that outmigration did play a role in containing unemployment in Jordan.

Table 5.13 : Granger Test of Causality between Outflow and Unemployment

Part A 1968-89

I $OUFL_t = 33.414 - 0.347\ UEMP_{t-1} + 0.119\ UEMP_{t-2} + 1.134\ OUFL_{t-1} - 0.201\ OUFL_{t-2}$
(-1.275) (0.424) (4.001)* (-0.761)

$R^2 = 0.996$ F = 783.875

II $OUFL_t = 17.907 + 1.477\ OUFL_{t-1} - 0.524\ OUFL_{t-2}$
(8.275)* (-3.120)*

$R^2 = 0.995$ F = 1499.917*

III $UEMP_t = 15.948 + 1.221\ UEMP_{t-3} - 0.507\ UEMPL_{t-2} - 0.522\ OUFL_{t-1} + 0.517\ OUFL_{t-2}$
(6.971) (-2.811)* (-2.859)* (3.0413)*

$R^2 = 0.954$ F = 73.698*

IV $UEMP_t = 3.238 + 1.616\ UEMP_{t-1} - 0.720\ UEMP_{t-2}$
(8.239)* (-3.414)*

$R^2 = 0.904$ F = 75.018*

Part B

V $OUFL_t = 37.454 - 0.446\ UEMP_{t-1} + 0.036\ UEMPL_{t-2} + 0.132\ UEMP_{t-3} + 1.333\ OUFL_{t-1} - 0.814\ OUFL_{t-2} +$
(-7.032) (0.059) (0.355) (3.967)* (-7.298)

$0.415\ OUFL_{t-3}$
(1.064)

$R^2 = 0.996$ F = 512.4801*

VI $OUFL_t = 17.879 + 1.526\ OUFL - 0.634\ OUFL_{t-2} - 0.062\ OUFL_{t-3}$
(4.855)* (-1.062) (0.192)

$R^2 = 0.994$ F = 939.7937*

VII $UEMP_t = 21.113 + 0.972\ UEMP_{t-1} - 0.117\ UEMP_{t-2} - 0.242\ UEMP_{t-3} - 0.432\ OUFL_{t-1} + 0.208\ OUFL_{t-2} +$
(3.439)* (-0.289) (1.002) (-1.967)** (0.507)

$0.217\ OUFL_{t-3}$
(0.849)

$R^2 = 0.959$ F = 46.8749*

VIII $UEMP_t = 4.454 + 1.454\ UEMP_{t-1} - 0.365\ UEMP_{t-2} - 0.241\ UEMP_{t-3}$
(5.135)* (-0.745) (-0.805)

$R^2 = 0.907$ F = 49.1311*

* Denotes significant at 1% level of significance.

Table 5.14 : Summary of Granger's Causality Test on Outmigration and Unemployment

Lag form	Regression of outflow on Unemployment		Regression of unemployment on outflow	
Granger's Test	F ratio	Degrees of freedom	F ratio	Degrees of freedom
(2,2)	1.3543	2,14	7.878*	2,14
(3,3)	1.4454	3,12	5.0290*	3,12

The above analysis pertains to some of the positive effects of outmigration. Following are some of the adverse consequences of outmigration.

i) The migration abroad attracts young people, so the structure of domestic labour market gets distorted as the labour force consists of more middle aged persons rather than relatively young people.

ii) Migration expands the gap between income of emigrants and domestic labour, which creates a possibility of "Emulation" to take place as discussed in the first section of this chapter.

iii) There is a decrease in the number of skilled labour force in domestic labour market, which aggravates the problem of 'brain-drain'.

iv) The outflow of labour force abroad also means the loss of investment in human resources(like the investment in education and training etc). Many labour force exporting countries have

realised that such losses are more than the gains from outflow of their labour force abroad.

In case of Jordan out of the above mentioned adverse effects, the age structure does not seem to get distarted due to outflow of labour. The main loss to the Jordanian economy is the loss of skilled and educated manpower. Since service sector led economic growth is not resulting in sustainable growth, there is an urgent need to develop industrial and infrastructure sectors and for this the economy needs trained manpower.

The net impact of outmigration as already mentioned is difficult to quantify mainly due to poor data base on investments undertaken to train educated and skilled manpower and their potential earnings in Jordan. However the present circumstances in Jordan call for the need of trained and educated manpower who can contribute to the development of Jordanian economy.

5.7 Remittances and Some of the Macro Economic Aggregates

The outflow of labour specially that of trained and educated ones is a loss to the Jordanian economy. However one cannot rule out the important role which remittances have played in Jordanian economy. The present section therefore deals with the relationship of remittances with some of the macro economic aggregates of Jordanian economy. (please refer Table 5.15)

i) Remittances, consumption and GNP

It is argued that remittances have helped considerably in increasing the consumption. In the case of Jordan the individual consumption increased rapidly during 1970-1994. The aggregate consumption was 152.8 million JD in 1970 which increased to JD 3063.4 million in 1994.

Remittances as a percent of GNP was 3 percent in 1970, which increased to as high as 25 percent in 1984. Thereafter it declined and was 12 percent in 1991. After 1991, there was some improvement and the share increased to 19 percent in 1994. Thus remittances form a substantial part of national income of Jordan.

The negative side of impact of remittances is also highlighted by some researchers. It is believed that the remittances have unduly encouraged more imports to cover the individual consumption as most of such consumption is of luxury consumption goods imported from abroad[19]. Thus the use of remittances should be judicious if the positive impact on the economy is to be felt.

Table 5.15 : Remittances from Jordanian Labour Force Working Abroad and Other Major Economic Aggregates, 1970 - 1994

(at Current Prices in Million JD)

Years	Remittances	Individual Consumption	GNP at Market Price	GDP at Market Price	Gross Fixed Capital Formation	Export	Import	Balance of Trade	Balance of Payment	Total Deposit With Commercial Banks	Deposit of Non-Residents with commercial Banks	Money Supply M1	Money Supply M2	Cost of Living Index In 1992=100	Remittances as % of GNP	GFCF as % of GDP
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1970	5.5	152.8	187.0	174.4	25.2	9.3	65.9	-56.6	-4.7	57.7	2.5	105.5	129.1	15.4	2.95	13.48
1971	5.0	161.7	199.4	186.2	30.7	8.8	79.6	-67.8	-13.6	59.6	2.1	108.0	135.1	16.1	2.51	15.40
1972	7.4	177.4	221.0	204.2	36.3	12.6	95.3	-82.7	8.5	72.9	2.0	115.0	146.5	17.0	3.35	16.42
1973	14.7	183.1	241.5	218.3	47.2	14.0	108.2	-94.2	10.3	85.7	2.1	139.2	176.0	19.0	6.09	19.54
1974	21.1	199.6	279.3	247.3	63.2	39.4	156.5	-117.1	13.8	115.1	3.6	172.0	219.8	22.7	7.55	22.63
1975	53.2	295.4	376.0	312.1	87.9	40.1	234.0	-193.9	65.6	168.7	8.6	224.6	288.3	25.4	14.15	23.68
1976	129.6	362.6	562.4	421.6	138.0	49.5	339.5	-290.0	2.7	250.0	20.4	276.9	378.3	28.3	23.04	24.54
1977	154.7	470.5	660.1	514.2	197.0	60.2	454.4	-394.2	50.2	314.8	18.9	331.0	467.6	32.4	23.44	29.84
1978	159.4	560.4	781.0	632.2	229.1	64.1	458.8	-394.7	90.9	448.5	47.5	375.4	606.7	34.7	20.41	29.33
1979	180.4	722.6	921.3	753.0	294.6	82.6	589.5	-506.9	58.3	593.1	67.1	472.6	773.1	39.6	19.58	31.98
1980	236.7	829.3	1183.6	1151.2	452.9	120.1	716.0	-595.9	32.0	808.5	133.2	94.8	984.8	44.0	19.99	38.28
1981	340.9	1053.2	1484.2	1426.7	672.6	169.0	1047.5	-876.5	69.0	977.6	143.5	70.7	1179.9	47.4	22.97	45.32
1982	381.9	1219.5	1702.5	1638.1	649.4	185.6	1142.5	-956.9	113.4	1169.5	171.6	787.5	1403.3	50.9	22.43	38.14
1983	402.9	1348.1	1815.0	1765.8	570.0	160.1	1103.3	-943.2	156.9	1397.8	216.7	869.4	1615.2	53.5	22.20	31.40
1984	475.0	1373.9	1905.0	1891.4	546.6	261.1	1071.3	-810.2	64.4	1603.1	276.9	878.4	1757.7	55.5	24.93	28.69
1985	402.9	1401.7	1965.1	1969.8	385.2	255.3	1074.4	-819.1	137.6	1747.2	294.3	848.2	1874.8	57.2	20.50	19.60
1986	414.5	1238.4	2097.3	2114.6	410.3	225.6	850.2	-624.6	50.9	1946.2	305.5	897.1	2072.4	57.2	19.76	19.56
1987	317.7	1281.7	2112.5	2162.7	468.4	248.8	915.5	-666.7	75.9	2142.4	300.8	979.8	2372.1	57.1	15.04	22.17
1988	335.7	1292.3	2129.9	2218.4	508.2	324.8	1022.5	-697.7	-23.5	2346.1	422.5	1165.8	2626.1	60.9	15.76	23.86
1989	358.3	1635.1	2206.4	2329.9	547.4	534.1	1230.0	-585.3	-212.1	2625.4	400.4	1326.5	2971.1	76.5	16.24	24.81
1990	331.8	1976.5	2375.9	2612.5	691.4	612.3	1725.8	-1008.6	-45.0	2642.6	386.9	1432.8	3122.6	88.9	13.96	29.10
1991	306.3	2039.6	2559.1	2779.4	608.7	598.6	1710.5	-994.1	396.2	4022.1	1145.8	1600.4	3717.5	96.2	11.97	23.79
1992	573.1	2646.4	3135.8	3234.2	980.2	633.8	2214.0	-1461.7	158.8	4749.0	1522.9	1716.1	4193.0	100.0	18.28	31.26
1993	720.1	2716.7	3459.2	3595.7	1303.5	691.3	2453.6	-1585.2	-122.0	4939.4	1334.7	1730.1	4481.8	103.3	19.66	35.60
1994	763.7	3063.4	4039.2	-	1233.8	739.9	2362.6	-1362.4	11.1	5391.5	1408.7	1746.2	4841.5	107.0	18.91	30.55
Anul.Avg. Growth Rate	18.2	12.7	12.9	14.5*	14.9	18.7	14.1			19.8	29.2	13.0	16.1	8.1		

Note : * 1970-1993. GFCF = Gross Fixed Capital Formation.

Source : 1. Central Bank of Jordan, Annual Statistical Bulletin, (1964-1989), Department of Research Studies, Amman Dec. 1989.

2. Central Bank of Jordan, Monthly Bulletin, Vol.31, No.8, August 1995.

ii) Remittances and investment

According to central bank of Jordan, the fixed capital formation has increased from JD 25.2 million in 1970 to JD 1233.8 million in 1994. This increase represents an annual growth rate of 14.9 percent. As a percent of GNP, it was 13.48 in 1970, which increased to 45 percent in 1981. Thereafter it declined and was around 20 percent in 1987. After that there was some improvement and was 29 percent in 1990. Thereafter with some fluctuations it was 31 percent in 1994.

Remittances and GDP both contribute to increase investment potential of the economy. Zaglol[20] in his book on Jordanian remittances and its impact on Jordanian economy, explains the effects of remittances on Gross National Product, Balance of payment and also on saving and investment. According to him there is a direct relation between inflow of remittances and investment. The value of migration co-efficent according to his study was 0.52, that means an increase in remittances by JD 1 million causes increase in investment by JD 5.2 million, keeping the other variables constant. We estimated the following regression equation in double log form for the period 1970-1987 to know the relative impact of remittances on gross fixed capital formation.

Table 5.16: Regression Results : Determinants of Gross Fixed Capital Formation in Jordan

Gross fixed capital formation = $b_0 + b_1 R + b_2 GDP + e$

Gross fixed capital formation = $0.158 + \underset{(4.90)^*}{0.454\ R} + \underset{(2.7)^*}{0.425\ GDP}$

$R^2 = 0.97.$

Where: R = remittances,
GDP = Gross Domestic Product at Market Prices.

Figures in bracket are 'T' values.
* represents statistically significant at 1 percent level.

It can be seen from the equation (Table 5.16) that one percent increase in remittances leads to 0.454 percent increase and one percent increase in GDP leads to 0.425 percent increase in gross fixed capital formation. Both the explanatory variables were statistically significant at 1% level of significance. It can therefore be deduced from the results that remittances play almost the same role in increasing the capital formation as GDP thus indicating an important role of it in Jordanian economy.

The remittances have also caused an increase in investment indirectly due to the rise in bank deposits and working funds and consequently increase in the ability of banks in providing loans. It can be seen from the table 5.15 that there was a significant increase in the deposits with the banks. The sudden increase from 1991 onwards was mainly due to return migration.

iii) Remittances and price level

During the period prior to 1973, the general price level was stable. But after 1973 prices started increasing, which many observe is the result of increasing remittances which may have caused demand - pull inflation in the domestic market.

iv) Remittances and balance of payments

The Inflow of remittances rose from JD 5.5 million in 1970 to JD 763.7 million in 1994 at an annual growth rate of 18.2 percent. Remittances exceeded the national exports till 1988, it was only afterwards that one finds a significant jump in national exports. Imports have always exceeded the exports resulting in a chronic deficit in the balance of trade. The remittances thus helped to cover import bill during the same period. The Jordan's balance of payments shows a surplus in most of the years between 1970 -1994. If one excludes remittances there will be a deficit in the balance of payments during this period.

In the last ten years, Jordanian economy's heavy dependence on external loans and foreign assistance has resulted in deterioration of the balance of payment position. The government was forced to devalue the exchange rate of Jordanian Dinar as against the leading international currencies.

The above analysis indicates that outmigration of labour plays an important role in the economy of Jordan. It has considerably eased the problem of unemployment and also helped the economy in the form of remittances. However as mentioned earlier encouraging outmigration cannot continue to be a strategy to solve the problems of unemployment and of inadequate domestic saving. Almost 60 to 70 percent of the potential labour force of Jordan has been working abroad during 1968 - 1989. It is only recently that the percentage has gone down. Alongwith outmigration, inmigration of guest/immigrant workers and migration within Jordan give rise to unique sets of characteristics to the Jordanian labour market.

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