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The Effect of Labor Migration on Economic Growth: The Case of Jordan (1970-2001)

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Abstract

This study is aimed at demonstrating and analyzing guest labor in Jordan as well as Jordanian labor abroad and their effects on economic growth. It also aimed to explain the effect of guest labor remittances and the remittances of Jordanian labor abroad on economic growth. The study mainly depended on the descriptive analysis and rarely did on the econometric approach and drew its data from secondary resources published in specific sources.

During the period of this study, the results showed that most of guest labor in Jordan worked in agriculture and construction, at which the possibilities for replacing guest labor were limited because of the reluctance of Jordanian labor to work in such fields. The study explained that the productivity of a Jordanian worker was about three times of that of a guest worker because of the differences in wages paid to each as well as the differences in the work nature. Consequently, the replacement process will increase production and promote economic growth. It also found that unemployment rate was positively correlated with the number of guest labor inside Jordan and negatively with the number of Jordanian workers abroad. The study indicated that there was a positive effect of the remittances of Jordanians abroad and a negative effect of guest labor remittances on economic growth, while the effect of both national labor and guest remittances labor was positive. The study also showed that the remittances of Jordanians abroad were directed to private consumption expenditure rather than investment. Therefore, their effects on economic growth were small because the remittances per worker were very little (ANNEX 2).

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ملخص

هدفت هذه الدراسة إلى استعراض وتحليل حجم العمالة الوافدة إلى الأردن والعمالة الأردنية في الخارج ودورها في النمو الاقتصادي، كما هدفت إلى تبيان أثر كل من حوالات العمالة الوافدة للأردن إلى الخارج وحوالات الأردنيين في الخارج على النمو الاقتصادي. اعتمدت الدراسة بشكل رئيس على التحليل الوصفي أكثر من اعتمادها على الأسلوب القياسي التحليلي، حيث ركزت إلى استخدام بيانات ثانوية منشورة في مصادر محددة.

خلال فترة الدراسة، بينت النتائج أن معظم العمالة الوافدة إلى الأردن كانت تعمل في الزراعة والإنشاءات، وهي قطاعات اقتصادية يصعب فيها إحلال العمالة الوافدة بسبب إحصام العمالة الأردنية عن العمل فيها. كما بينت الدراسة أن إنتاجية العامل الأردني بلغت حوالي ثلاثة أضعافها بالنسبة للعامل الوافد، وذلك بسبب فرق الأجر المدفوع لكل منهما و الاختلاف في طبيعة العمل الذي ينفذه كل، وبالتالي فإن إحلال العمالة الوافدة بعمالة وطنية سوف يزيد الإنتاج ويعزز النمو الاقتصادي. وجدت الدراسة أن معدل البطالة في الأردن قد ارتبط سلباً مع عدد العمالة الأردنية في الخارج وإيجابياً مع عدد العمالة الوافدة إلى الأردن. كما أشارت الدراسة إلى أن هنالك أثراً موجبا لعوائد العاملين الأردنيين في الخارج على النمو الاقتصادي يعكس الأثر السلبي لحوالات العمالة الوافدة للأردن إلى الخارج، بينما كان لأثر العمالة الوافدة والعمالة الأردنية المهاجرة أثراً موجبان على هذا النمو. أوضحت الدراسة أيضاً إلى أن حوالات الأردنيين في الخارج قد وجهت بشكل رئيس نحو الإنفاق الاستهلاكي الخاص أكثر من توجيهها نحو الإنفاق على الاستثمار، لذلك فإن أثرها على النمو الاقتصادي جاء متواضعاً بشكل جسد انخفاض متوسط حصة كل عامل في الخارج من مجمل هذه الحوالات (ملحق رقم 2).

Introduction:

Jordan witnessed in the last six decades significant economic, social, and demographic changes, especially after the war of 1948, which resulted in forced migration to the country, which increased the population and created imbalances in the labor market. Therefore, labor supply exceeded local labor demand owing to the failure of the national economy to absorb the labor immigration to the Kingdom and consequently, unemployment gradually became a significant problem.

The Jordanian labor market also witnessed considerable developments during the seventies and nineties of the last century as a result of the political, economic and social conditions that encircled Jordan and the whole region. The labor force of Jordan increased from 299.5 thousand workers in 1970 to 420 thousand in 1980 to 630 thousand in 1990 and to 1209.4 thousand in 2000. Therefore, economic participation level increased from 19.83% to 20.24% to 21.50% and to 26.4% respectively. With respect to unemployment rate, it varied during the period (1970-2001) and reached in the above mentioned four years 9.9%, 3.5%, 16.8% and 14.9% respectively (Talafha, 1993 & MOL, 2000).

The unemployment rate decreased during the period (1973- 1980), and the Jordanian economy was characterized with a high level of employment of the human resources. Hence, Jordan called for foreign labor in order to bridge the gap caused by the economic developments in the Jordanian labor market. The levels of production and employment diminished during the eighties of the last century, and raised unemployment rate. The problem was also aggravated because of the small in local and external demands on the Jordanian labor. During this period the Jordanian labor abroad started returning to the country, especially from the Arab-Gulf States at a rate which exceeded three times of that of the labor emigration (Khasawneh, 1986). But during the ninetieths of the twentieth century, the rate of unemployment declined because there was more demand on Jordanian labor by the Arab States.

Regarding the sectoral distribution of Jordanian labor, participation of agriculture in total employment decreased from 19.5% in 1970 to 10.2% in 1980 to 7.3% in 1990 and to 4.6% in 2000. This noticeable decline was a result of the decreasing returns of agricultural production and the tendency of agricultural labor to move to other sectors. That movement was mainly to service sector, so its participation in the total employment increased from 61.5% to 67.5% to 71.3% and to 73.3% respectively (Ibrahim et al, 1989 & MOL, 1990 and 2000).

The distribution of the Jordanian labor force according to the level of education shows that it improved due to the concentration on investing in human capital resources through establishing new higher education organizations. Therefore, holders of certificates below than the General Secondary Certificate as a percentage of the total labor decreased from 90.0% in 1970 to 85.4% in 1980 to 75.9% in 1990 and to 69.0% in 2000. Meanwhile the percentage of Bachelor degree or higher increased from 6.1% to 7.2% to 12.2% and to 17.6% respectively (Ibrahim et al, 1989 & MOL, 1990 and 2000).

According to the vocational distribution of the Jordanian labor, it was affected by its sectoral and educational distribution. It was in 1970 as follows: specialists: 7.0%, managers: 1.1%, clerk workers: 5.8%, workers in sales: 7.5%, workers in services: 6.3%, workers in agriculture: 19.6%, and workers in production: 52.7%. These percentages became in 2000 as follows: 27.7%, 0.9%, 8.3%, 0.1%, 15.0%, 3.3% and 44.8% respectively. (Ibrahim et al, 1989 & MOL 1990 and 2000).

From the previous review, some characteristics of the Jordanian labor market can be concluded:

- 1- The drop in labor force participation rate in the labor force. Its average was 22.0% during the period (1970-2000), which is low, compared with India (33.0%) and the United States of America (41.0%). This drop was a result of the age structure of the population of Jordan where the age group (15-64) years only participates now in 50% of overall population. Here, we may add to that the high ratio of school enrollment, the low participation of woman in labor force, early retirement for a large number of public employees, and the continuous labor emigration abroad (Ameerah, 1991).
- 2- The imbalance in sectoral distribution of labor force, at which limited agricultural area, scarcity of water resources, and the backward technology used in agriculture reduced the participation of agriculture in total employment to the benefit of other sectors, especially services and industrial sectors.
- 3- There is an imbalance in the geographic distribution of the labor force in favor of Amman, Zarqa and Irbid Governorates, which are the biggest three governorates in Jordan in terms of population number.
- 4- The Jordanian labor market is an exporting and importing market at the same time. Jordan is hosting guest workers from Arab and foreign state and sending labor abroad, especially to the Arab- Gulf States.

Study Objectives

The study aims at achieving the following objectives:

- 1- Demonstrating the guest labor in Jordan and its characteristics related to magnitude and distribution according to economic activity, vocational groups, nationality, gender, geographic region, and remittances.
- 2- Surveying the Jordanian labor force abroad in terms of figures and remittances to the country.
- 3- Showing the effect of guest labor on economic growth through its participation in total employment and through its remittance outside Jordan.
- 4- Explaining the effect of the Jordanian labor force abroad through its remittances to the country, which in turn contribute to the private consumption, investment and Gross Domestic Product

Methodology

This study mainly depended on descriptive analysis, and rarely did on the econometric approach for analyzing some economic relations. It drew its data from secondary resources published in specific resources such as: the Central Bank of Jordan (CBJ), The Jordanian Department of Statistic (DOS), the Jordanian Ministry of Labor (MOL), the Royal Scientific Society (RSS), etc. Most of the data used in this study were time series data and belonged to guest labor in the country, and the Jordanian labor abroad. It also belonged to other economic variables like private consumption, investment, Gross National Product, total labor force, unemployment rate, guest labor remittances, the remittances of the Jordanian labor abroad, etc.

The study investigated the role of guest labor and the Jordanian labor abroad in economic growth by analyzing some economic indicators, among of which is the percentage of the remittances of Jordanians abroad compared to the following: private consumption, investment, and Gross National Product. Not to mention the percentage of guest labors remittances to the Gross National Product and the percentage of guest labor to total labor.

The study narrowly used the econometric analysis through estimating two statistical equations using the Ordinary Least Squares method (OLS). The first aimed at explaining the role of guest labor and its remittances in economic growth, while the second aimed at explaining the role of the remittances of Jordanians abroad in the same variable.

Literature Review

Studying labor migration in general and its role in economic growth in Jordan was tackled by some researchers because of the great importance of this subject in the national economy.

One of these studies (Zaghloul, 1984) aimed at explaining the role of the remittances of Jordanians outside the country in boosting its balance of payment and money reserves. The study also aimed at explaining the contribution of these remittances to private consumption, investment, prices and wages. Results showed that 1% increase in the remittances will make an investment increase by 0.52%, assuming that other factors are constant. A strong correlation was found between remittances and private consumption expenditure, and also between remittances and imports of consumption goods, the correlation coefficients were 0.952 and 0.956 respectively. The study resulted in a significant role of remittances in inducing inflation in Jordan.

Another study (Share, 1988) aimed at demonstrating the economic and social characteristics of guest labor in Irbid Governorate of Jordan (1987). The results of this study revealed that 74% of them work in occupations that don't need some skills and 18% work in occupations which need modest skills. The results also showed that 91% of this labor were given monthly wages equal to or less than 100 JDs per capita, and 25% of guest workers had academic qualification of the Preparatory Certificate or less, while more than one-third of them were completely illiterate.

A third study (Talafha, 1990) aims at explaining the effect of guest labor on the Jordanian economy using the Cobb-Douglas production function. The study proved that the productivity of a JD spent on the Jordanian labor is higher than that spent on guest labor. Consequently, the possibility of replacing guest labor is high and will increase the Gross Domestic Product (GDP). Transferring one JD spent on guest workers to a Jordanian worker will raise the GDP by 0.68 JD. The study also showed that agriculture, and then constructions were the foremost losers of the policy of replacement.

And a fourth study on the Jordanian emigrant labor force (Share, 1991) demonstrated historically the Jordanian labor abroad and the factors behind that, is like the increasing in both unemployment rate and labor force, in addition to the rise in external demand on Jordanian labor. The study showed some characteristics of the Jordanian labor abroad, such as: high level of education and training, and concentration on the sectors of social

service, defense, and public administration. Most of Jordanian Workers abroad were from the groups of "specialists and technicians", "managers and workers in Administration", and "clerical workers". The study concluded that Jordanian emigrant workers had a positive effect through their remittances to the country and contribution to the reduction of unemployment rate. While it caused some adverse effects like imbalance in the population structure, acute shortage in some skills of Jordanian labor market, and widening of the gap between social classes.

There are also a lot of studies about labor migration in the Arab States and the world. I will just review here two of them.

One study (Kandil and Metwally, 1992) aimed at analyzing the determinants of Egyptian labor migration to neighboring Arab Oil-Producing Countries. The study reviewed both Egypt's experiences with labor migration and theoretical literature identifying the major factors that determined labor migration. The study showed that the ratio of per capita income between the Arab Oil-Producing Countries and Egypt has had a strong contemporaneous impact as pull factors, while the density of population in Egypt has had a positive contemporaneous push impact on Egyptians to migrate. Regarding inflation rate in Egypt, it positively affected the Egyptian migration rate.

Another study (Glytsos, 2002) examined the role of remittances in development in some Mediterranean Countries. The study found that exporting countries had generally managed to use remittances efficiently for their development, and as remittances are private transfers, market forces alone can't channel them to productive uses in a way that contributes to lasting development. Consequently, appropriate policies were needed.

Labor Immigration to Jordan

Jordan started calling for foreign labor in 1973 simultaneously with the rise in the National Income and consequently local and external demand on Jordanian labor rose.

Guest workers inside Jordan increased from 376 workers in 1973 to 79566 workers in 1980 to 165000 workers in 1990 and to 141186 workers in 2000 (Ibrahim, 1989 and Omari, 2002).

Regarding the educational level of the guest labor in Jordan, table 1 shows that there was no specific trend for that level whether upward or downward during the period of this study. The guest labor whose educational level is below the General Secondary Certificate contributed to

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 60.9% of the total guest labor in 1973 and 79.1% in 2001, while the percentage of the General Secondary Certificates holders decreased from 15.7% to 0.50% respectively. The percentage of the Intermediate Diploma Certificate holders increased from 13.8% to 18.9% respectively, unlike that of Bachelor holders which decreased from 8.2% to 1.1% respectively. The percentage of master or higher certificate holders also decreased from 1.3% to 0.40% respectively.

Table (1)
 The Percentage Distribution of Guest Labor According to Its Educational Level (1973-2001)

Educational Level	1973	1980	1987	1992	1998	2001
Less than the General Secondary Certificate	60.9	70.8	61.3	81.6	79.5	79.1
General Secondary Certificate	15.7	14.9	20.5	2.3	11.4	0.5
Intermediate Diploma	13.8	7.0	11.9	11.0	3.7	18.9
Bachelor	8.2	6.1	5.0	3.6	2.4	1.1
Master or Higher	1.3	1.2	1.3	1.5	3.0	0.4

Sources

- Lssa Ibraim et al, studying the Present and the Future of the Jordanian Labor Market, Vol.3, Jordanian Labor Market Data Base, Royal Scientific Society, Amman 1989, P55.
- Hashemite Kingdom of Jordan, Department of Statistics, National Information System: Employment Information, 2002.
- Hashemite Kingdom of Jordan, Ministry of Labor, Annual Report, Different Issues.

One can recognize that the percentage of the General Secondary Certificate holders is obviously increasing reflecting that the Jordanian needs for foreign labor are mainly limited to some economic activities which don't require high educational levels. Abundance in the Jordanian educated labor force covers both local and foreign demand, especially from the Arab-Gulf States.

With respect to the percentage distribution of guest labor according to economic activity, Table 2 shows that construction sector employed in 1973 about 42.0% of total guest labor, while agricultural sector employed 8.8%. In 2001 the agricultural sector came first (27.0%) followed by construction sector (19.3%), and then the mining and manufacturing sector (18.3%).

Table 2
The Percentage Distribution of Guest Labor According to Economic Activity (1933-2001)

Economic Activity	1973	1980	1987	1982	1998	2001
Agriculture	8.8	14.4	34.3	31.3	28.9	27.0
Mining and Manufacturing	6.6	5.2	8.1	15.2	15.8	18.3
Electricity and Water	0.5	0.4	1.0	3.5	2.5	0.2
Construction	42.0	28.1	31.0	1.8	2.4	19.3
Trade, Restaurants and Hotels	9.6	7.0	8.4	6.0	5.9	14.8
Transportation and Communications	1.6	2.0	5.5	6.6	5.3	1.4
Financial and Real Estates	1.1	0.9	2.0	4.8	5.0	2.2
Other Services Activities	29.8	42.1	9.7	31.0	34.2	16.8

Sources: The same sources of Table 1.

The above percentages mentioned in Table 2 highlight the continuous concentration of the guest labor in sectors that don't require high academic qualification or specialized training, especially agricultural and construction sectors. It is noticeable that the agricultural sector was increasingly employing guest labor during the period (1973-2001), unlike the construction sector which tended to employ less guest labor. That was because of some governmental policies aimed at organizing the Jordanian labor market through permitting guest labor to work in some economic activities. We may also add the reformation of the wage policies concerning national labor, which were all exposed to vacillation from one year to another.

Table 3 demonstrates the percentage distribution of guest labor in terms of vocational groups, where the group of "Production Workers and Laborers" formed the highest percentage among other groups of guest labor. This group accounted for 33.0% of total guest labor in 1973 and 48.4% in 2001, while the percentage of "Workers in Agriculture" group increased from 13.8% to 27.7% respectively coming in the second.

On the other hand, the percentage of "Technicians and Specialists" group witnessed an obvious decline form 21.0% in 1973 to 1.5% in 2001 reflecting the decline in Jordanian demand on this group, which requires

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 some level of education and training. Consequently, replacement of this group started in the eightieths of the last century as a result of high level of education and training of the Jordanian labor force, which also continued emigrating toward the Arab labor markets.

Table 3
 The Percentage Distribution of Guest Labor According to Their Vocational Groups (1973-2001)

Vocational Groups	1973	1980	1987	1992	1998	2001
Technicians and Specialists	21.0	6.3	4.5	1.0	1.8	1.5
Workers in Management	2.7	1.2	0.7	0.5	0.5	0.4
Clerical Workers	3.5	2.5	6.8	0.1	0.1	0.1
Workers in Sales	10.5	4.3	6.0	0.9	0.4	0.3
Workers in Services	15.4	11.7	17.1	20.6	21.6	21.7
Workers in Agriculture	13.8	15.4	28.4	37.6	43.7	27.7
Production Workers and Laborers	33.0	58.6	36.5	39.4	32.0	48.4

Sources: The same sources of Table 1.

The “workers in Services” constituted high percentage of total labor force among other groups. Its percentage increased from 15.4% in 1973 to 21.7% in 2001. Service activities I meant here are those not favored by Jordanian labor owing to low wages, long working hours, and hard nature of the work, in addition to some social reasons.

Table 4 explains the percentage distribution of guest labor in terms of their nationalities, at which Egyptian labor constituted in 2001 the majority of guest labor in Jordan (82.3%). This percentage was 12.5% in 1973.

The percentage of Non-Arabs slightly decreased from 14.5% in 1973 to 13.0% in 2001, while this percentage fluctuated in the years in between. With respect to the Arab labor in Jordan excluding Egyptians and Syrians, its percentage witnessed a sharp decline from 62.2% in 1973 to 2.0% in 2001 for the benefit of the Egyptian labor.

Table 4
The Percentage Distribution of Guest Labor According to Their Nationalities (1973-2001)

Nationality	1973	1980	1987	1992	1998	2001
Egyptian	12.5	69.9	68.2	70.0	73.8	82.3
Syrian	8.8	4.6	4.4	6.7	4.0	2.7
Other Arabs	62.2	3.5	3.5	6.6	9.3	2.0
Foreigners	14.5	22.1	23.9	16.6	13.0	13.0

Sources: The same resources of Table 1.

Regarding the percentage distribution of guest labor relating to gender, Table 5 shows that the majority of that labor was males, despite the decline in their percentage from 96.8% in 1973 to 90.8% in 2001, and therefore, the percentage of females increased from 3.2% to 9.2% respectively. That is because population increased and hence, the number of families, which required additional female guest labors to work specifically in the household sector increased.

Table 5
The Percentage Distribution of Guest Labor According to Their Gender (1973- 2001)

Gender	1973	1980	1987	1992	1998	2001
Male	96.8	96.2	85.3	94.3	96.2	90.8
Female	3.2	3.8	14.7	5.7	3.8	9.2

Source: The same sources of Table 1.

Table 6 explains the percentage distribution of the guest labor geographically; at which time Jordan consisted of five governorates until 1985:

- 1- Amman: where two governorates emerged from it, Zarqa (1985) and Madaba (1994).

- 2- Irbid: where three governorates emerged from it, Mafraq (1985), Ajloun and Jerash (1994).
- 3- Karak: where Taffeelah emerged from it as an independent governorate in 1985.
- 4- Ma'an: where Aqaba emerged from it as an independent governorate in 1994.
- 5- Balqa.

Table 6 explains that guest labor was concentrated in and around Amman, which included 71.5% of total guest labor in 1973 and 51.6% in 2001. The decline in this percentage was outward because Amman Governorate included in 1973 two other governorates (Zarqa and Madaba).

It is clear in 2001 that Irbid, Zarqa and Balqa employed guest labor more than other governorates except Amman. This reflects their population sizes and consequently the level of economic activity in each, especially the agricultural activity, which contained 27.0% of guest labor in 2001 and mainly locating in "AL-Aghwar" region that spreads in Irbid, Balqa, and partially in Karak. One can say that the central developmental district of Jordan, which includes Amman, Zarqa, Balqa, and Madaba employed 72.1% of total guest labor and accounted for 62.9% of the Kingdoms' population in 2001 (DOS, 2002).

Table 6
The Geographic Percentage Distribution of Guest Labor (1973-2001)

Governorate	1973	1980	1987	1992	1998	2001
Amman	71.5	57.5	43.7	68.2	66.1	51.6
Irbid	13.6	16.0	18.2	7.9	7.4	9.3
Balqa	4.8	17.8	25.1	3.0	3.0	10.5
Karak	4.5	4.3	5.0	2.3	2.1	4.5
Ma'an	5.6	4.4	7.9	9.6	3.0	2.9
Zarqa	-	-	-	7.9	5.4	7.7
Mafraq	-	-	-	0.6	2.2	4.6
Taffeelah	-	-	-	0.5	0.6	0.9
Madaba	-	-	-	-	1.2	2.3
Jerash	-	-	-	-	1.1	1.6
Ajloun	-	-	-	-	0.4	0.8
Aqaba	-	-	-	-	7.5	3.2

Source: The same sources of Table 1.

Jordanian Labor Emigration

Jordan has been considered one of the main sources of labor in the Arab-Gulf States. The General Census of 1961 brought into view that the number of Jordanians abroad was 62863 at which 79% of them were living in Arab countries, and the number of workers among them was 32765(DOS, 1964).

As a result of the dramatic rise in the world prices of oil after 1973, investment accelerated in the Arab Oil- Producing Countries, and produced vast changes in Jordanian labor market, especially unemployment rate and the number of Jordanian emigrant labor force.

Table 7 demonstrates that the number of Jordanian labor abroad increased from 103.5 thousand workers in 1970 to 305.4 thousand in 1980, then decreased to 287.5 thousand in 1990 and to 260.6 thousand in 2001. This continuous increase belonged to the following factors:

Table 7
Jordanian Emigrant Labor and Unemployment Rate (1970- 2001)

Year	1970	1975	1980	1985	1990	1995	2001
Jordan Emigrant Labor (thousand)	103.5	198.4	305.4	339.3	287.5	275.0	260.6
Unemployment Rate(%)	13.7	4.9	3.5	6.0	16.8	14.2	14.9

Source: The same sources of Table 1.

- 1- The growth in external demand on the Jordanian labor, especially after the increase in oil price, which therefore, created wide wage differences between Jordan and the Arab Countries hosting Jordanian labor. In this regard, the average wage for a Jordanian worker in Saudi Arabia amounted in the eighties of the last century three times of the average wage for a Jordanian worker inside Jordan (Talafha, 1985).
- 2- The open-door policy which Jordan adopted toward encouraging labor emigration simultaneously without launching any policies and procedures to ban or even to organize the emigration of local labor and expertise. That mainly aimed at supporting the country balance of payment through the remittances of the emigrant labor.
- 3- A high technical and educational level compared with other labor forces in the region characterizes the Jordanian labor force. For example: about 78.8% of Jordanian labor in Kuwait in 1975 was specialists, technicians, and skilled workers (Briks and Sinclair, 1980).

Table 7 shows that there was a negative correlation between the number Jordanian labor abroad and unemployment rate, especially during the period (1975-1985). Unemployment reached its lowest rates in 1975 (4.9%), 1980(3.5%), and 1980(6.5%), which were the years that witnessed considerable increase in the Jordanian labor abroad from 198.4 to 305.4 and to 339.3 thousand workers respectively.

The available data concerning Jordanian labor abroad have been insufficient and without any details after 1987 according to their distribution in vocational groups, educational level, economic activity, gender, or geographical regions, since they have always been cited overlapping with all Jordanians abroad.

The Effect of Guest Labor on Economic Growth

Labor is considered one of the most important inputs in addition to capital, land and entrepreneurship. Economic theory demonstrates that labor increase leads to rise labor supply, especially in the long-run through forcing wages and production costs to slow down (Hagen, 1975). During the period of this study, guest labor as a percentage of total labor force increased from 0.1% in 1973 to 23.6%, the decreased to 11.4% in 2000, while its percentage to population came to 0.02%, 4.2% and 2.4% receptively. The two aforementioned percentages peaked in 1989 when they amounted 37.4% and 6.4% receptively. That is because of the persistence needs of Jordan for guest labor to work in non-preferable economic activities as a result of aversion Jordanian labor to working in such activities at that time. Further more, some of the guest workers were substitutive to the Jordanian emigrant workers, which came to 290.1 thousand workers in that year (annex 1).

On a macroeconomic basis, remittances of guest labor aggravated the chronic deficit in the Jordanian balance of payment, at which the data about these remittances are available starting 1977, that is four years after Jordan had called for guest labor. Despite that, annual remittances up to that time were not large, as the number of guest labor didn't reach five thousand at the end of 1976.

Table 8

Guest Labor in Jordan and the Effect of Their Remittances on the Balance of Payment (1977-2001)

Year	1977	1985	1993	2001
The Number of Guest Labor of Jordan (Thousand Workers)	9.733	143.0	159.0	141.186
Remittances of Guest Labor Abroad (Million JDs)	15.0	93.0	54.1	137.0
GNP (Million JDs)	698.3	2015.5	3662.3	6391.5
Percentage of Remittances to GNP (%)	2.1	4.6	1.5	2.1

Sources: - The same sources of Table 1.

- The Central Bank of Jordan, Annual Statistical Data, Amman, May 1996, P28-32.
- The Central Bank of Jordan, Monthly Statistical Bulletin, Vol.38, No.10, October 2002, 81.

Table 8 demonstrates the increase of guest labor in Jordan as well as their remittances outside the country. The number of guest workers increased from 9733 in 1977 to 141186 in 2001, namely with an annual growth rate amounted to 11.8% between the two above mentioned years. Consequently, remittances increased from 15.0 to 137.0 million JDs respectively, i. e. with annual growth rate equaled to 9.7%.

With respect to the percentage of remittances to the GNP, it rose from 2.1% in 1977 to 4.6% in 1985, then it decreased and reached 1.5% in 1993, and finally rose again to 2.1% in 2001. Its average during the period (1977-2001) was 2.8%.

The effect of guest labor on economic growth comes through its contribution to the total labor and also through its remittances. Theoretically, it is possible to assume that the productivity of a guest worker is different from that of a Jordanian worker. This can be interpreted as a result of the differences in wages paid to them and the nature of works each performs (Talafha, 1989). It also possible to estimate the logarithmic formula, at which the dependent variable is the real Gross Domestic Product (Y) as an indicator for economic growth, while the independent variables are the following: labor size excluding guest labor (Lj), guest labor (Lg), capital estimated in the economy (K), and guest labor remittances (TRg).

Annex 2 explains that 1% increase in the Jordanian labor will cause 0.243% increase in the real Gross Domestic Product, while 1% increase in guest labor will cause 0.082% increase the real Gross Domestic Product. This means that the productivity of a Jordanian worker is about three times as that of a guest worker due to the difference in expenditure on each for the benefit of Jordanians because of the differences in wages and the work nature. This means that replacing guest labor with national labor will increase production and economic growth. The high unemployment rate Jordanian economy is suffering will consequently decline, especially in the light of the similarity in characteristics of the Jordanians out of work and those of guest labor.

Regarding the effect of guest workers' remittances on economic growth, Annex 2 explains that 1% increment in them will decrease the real Gross Domestic Product by 0.127%. This points out to the negative role of remittances in aggravating the chronic deficit of the Jordanian balance of payment, as well as in draining up hard currency outside the country. For example, in 2001, the deficit in the Jordanian balance of payment reached 21.0 million JDs, which didn't exceed 15.3% of guest labor remittances abroad.

The Effect of Emigrant Labor on Economic Growth

Jordan is considered one of the most important labor-exporting states in the region. During the period of this study, the number of Jordanian workers abroad increased from 103.5 thousand in 1970 to 339.3 thousand in 1985, then it decreased to 260.6 thousand in 2001 (Annex 1). With respect to the percentage of Jordanian labor abroad to the country's population in these years, it amounted to 6.9%, 12.7% and 5.0% respectively. This percentage reached its peak in 1976 (21.2%) as a result of the economic prosperity which was in the Gulf States at that time in terms of investment expansion and the rise in oil prices which provided additional highly paid job opportunities for guest labor which migrated to the Gulf States.

I. Consumption

The volume of private consumption in Jordan increased from 152.8 million JDs in 1970 to 1794.8 millions in 1985 and to 4856.1 millions in 2000 with an annual growth rate, which amounted to 12.2% during the period of the study. This accelerated increase in consumption was due to

higher demand on goods and services, which resulted from the population rise accompanied by the rise in incomes which is partially determined by the remittances of emigrant labor.

Consequently, the percentage of these remittances to private consumption increased in the aforementioned years from 3.6% to 22.4% to 26.9% respectively, at which the average of this percentage was 22.1% during the period of the study. In 1996, this percentage peaked (33.7%) reflecting the failure of governmental policies to fix spending in general and to direct consumers to rationalize their behavior.

II. Investment

Investment plays a significant role in determining economic growth according to its role in increasing the accumulation of capital stock in the national economy, production and value added, and consequently creating new job opportunities. The gross fixed capital formation in Jordan increased from 25.2 million JDs in 1970 to 385.2 millions in 1985 and to 1263.2 millions in 2000, namely with an annual growth rate amounted to 13.9% during the period (1970-2000). The rise in investment, which Jordan witnessed, was due to many factors, among of which was capital stock provided by the remittances of Jordanians abroad. The increase in these remittances led to an increase in the percentage of remittances to gross fixed capital formation from 22.0% in 1970 to 103.6% in 2000. The average of this percentage reached to 62.8% during the period (1970-2000), while it reached its maximum in 1985 when it amounted to 104.6%. This means that remittances increased at a rate, which exceeded that of the rise in the gross capital formation.

III. Gross National Product

The Gross National Product obviously rose from 235.1 million JDs in 1970 to 2015.5 millions in 1985 and to 6087.6 millions in 2000. The remittances of Jordanians abroad play an important role not only in supporting the balance of payment, but also in increasing Gross National Product through promoting the returns on production factors abroad. The annual growth rate of remittances during the period (1970-2000) was 19.6% , at which the percentage of remittances to GNP increased from 2.4% in 1970 to 20.0% in 1985 and to 22.3% in 2001. The average of this percentage during the period of this study came to 16.6%, while it peaked in 1984 and 1996 when reached 23.8%.

Remittance can be considered as a source of economic growth from the supply side. Theoretically, it is possible to assume remittances as one of the production factors (Zaghloul, 1984), through providing investments with capital. When estimating the logarithmic formula of the production function, at which the real Gross Domestic Product (Y) was the dependent variable, and the following variables are independent variables: labor (L), capital stock (K), and the remittances value of Jordanian Labor Abroad (TR_j).

Annex 3 demonstrates that an increase in the remittances of Jordanians abroad by 1% will increase the economic growth (growth in real Gross Domestic Product) by 0.221%. This refers to the positive role of remittances in the Jordanian economy through minimizing the deficit in the balance of payment and providing hard currency inside Jordan. In 2001 remittances were 1426.0 million JDs, which is more than 10 times of the remittances of guest labor in Jordan in the same year. Therefore, labor immigration to Jordan provided some sectors of the Jordanian economy with low-paid labor, on the contrary of the national labor which in turn tended to ask for high wages abroad. This participated in reducing the negative effect of guest labor remittances on the national income.

Effect Analysis

It is important to demonstrate growth rates in some essential indicators so as to analyze the different effects of labor emigration and immigration in Jordan. For this purpose, the period of this study was divided into six separate intervals: three of which had been in agreement with the Economic and Social Plans which Jordan launched before during the following periods: (1976-1980), (1981-1985), and (1986-1990). All variables in Table 9 were estimated in terms of annual growth rates. This table explains the noticeable growth in the figure of guest labor in Jordan till 1985, but then, the figure started decreasing gradually. The number of the Jordanian emigrant labor became declining at the beginning of the period (1986-1990), which testified a retreat in the rate of growth in guest labor remittances as well as the remittances of Jordanian labor abroad. That took place because of the economic shock the Jordanian economy suffered from starting 1988 and represented in the devaluation in the Jordanian dinar, at which it lost 50% of its value.

Jordanian government fixed and controlled the cash outflow including guest labor remittances during this period, and for this purpose adopted a contractionary monetary policy. The decline in the remittances of Jordanian labor abroad accelerated as a result of the decrease in the number of this

labor. The annual growth rate of remittances during this period (-5.4%) was associated with the annual growth rate of the number of the Jordanian labor abroad (-4.3%). The decline in the figure of this labor was related to its return home. In 1986, more than 5 thousand workers returned to Jordan, and during 1986 and 1987 more than 27 thousand also returned (MOL, 1987).

Regarding the annual growth in the percentage of remittances of Jordanians abroad to private consumption, it was negative during the period of this study except the following two periods: (1971-1975) and (1996-2000). This proves that the volume of private consumption grew at a percentage that exceeded that of remittances, but during the last interval (1996-2000), the government took some measures aimed at cutting down consumption in general. Despite that, the annual growth rate in the percentage of remittances to private consumption remained negative proving the consumption pattern the Jordanian economy that passed through. The increase in private consumption is also affected by other factors like population, income, price levels, etc.

The percentage of remittances to investment was positive during the period of the study except the following two periods: (1976-1980) and (1986-1990), that is to say those remittances increased at a rate higher than that of investment. So remittances were not necessarily direct to create new investment in the economy, but toward private consumption expenditures, because most of Jordanian workers abroad emigrated in order to improve their living conditions and secure the different needs of their families such as: housing, education, etc. This seems evident taking into consideration that the annual remittances per worker abroad were very low. For example, in 2001 the average came only to 5472 JDs.

With regard to the percentage of the remittances of Jordanians abroad to GNP, it witnessed a negative growth rate during the period of this study except the period (1971-1975). This indicates the retrogressive role of remittances in adjusting the balance of payment, because the components of Gross National Product grew at rates, which exceeded that of remittances. We may mention the insignificant role of remittances to promote investment and control private consumption. For example, this was clear in the last period, which testified a negative growth in the percentage of remittances to private consumption (-5.5%). It also witnessed a positive growth in the percentage of remittances to investment (8.2%), which reflected negative growth in the percentage of remittances to Gross National Product (-2.5%).

Table 9
Annual Growth Rates of Some Indicators of the Effects of Immigrant and Emigrant Labor

Period	Guest Labor	Emigrant Labor	Guest Labor Remittances	Remittances of Jordanians Abroad	Percentage of Remittances to Private Consumption	Percentage of Remittances to Investment	Percentage of Remittances to GNP	Percentage of Guest Labor to Total Labor	Unemployment Rate	Percentage of Guest labor to GNP
1971-1975	143.2	13.9	N.A	80.7	55.2	42.9	55.9	125.3	-22.8	N.A
1976-1980	101.9	9.0	45.3	16.2	-4.1	-7.3	-3.8	96.0	21.6	20.8
1981-1985	11.5	2.1	15.6	4.3	-7.0	19.8	-2.7	7.9	11.4	7.8
1986-1990	6.1	-4.3	-14.2	-5.4	-8.6	-17.0	-8.2	4.5	20.4	-16.8
1991-1995	4.5	-0.9	15.6	29.9	19.0	5.6	14.0	-7.0	-6.8	1.7
1996-2000	-1.2	-0.9	18.6	4.6	-5.5	8.2	-2.5	-9.5	2.8	10.5

Percentages were calculated on the basis of data of Table 1.

With regard to the growth in the percentage of guest labor to total labor, it was positive during the first four periods, but at a decreasing rate. Starting 1991, the policy of replacing guest labor became fruitful. The percentage of guest labor to total labor started decreasing consequently, at which its annual growth rate during the period (1991-1995) was (-7.0%). That was accompanied with serious measures taken by government to organize the Jordanian labor market and to activate the policy of replacing guest labor by national labor. This took place especially after the return of most of the Jordanian workers in the Gulf States starting 1991 as a result of the Gulf War II. But these policies didn't attain their goals ultimately and unemployment rate remained high and rose to 14.9% in 2001, which is higher than the rate during the two previous years. So decreasing unemployment rate can't result only from labor replacement policies, because the problem is originally structural and aggravated by the rapid population increase, which was 2.8% in 2001 (DOS, 2002). The absence of harmony between the output of the educational system and the input of labor market also complicated the problem.

With respect to annual growth rate in the percentage of guest labor remittances to the Gross National Product it began highly positive, then decreased to reach its minimum level (-16.8%) during the period (1986-1990). That was because of restrictions the government imposed in 1988 and after on the outflow of hard currency due to the economic shock Jordan went through. Then the rate began to increase and reached 10.5% during the period (1996-2000), which indicated that labor replacement policies should be more serious in follow-up and continuation. Despite the decline in growth rate of the percentage of guest labor to total labor, the annual growth rate of the percentage of guest labor remittances to GNP increased.

Conclusions

On the basis of what was demonstrated and analyzed about guest labor in Jordan as well as Jordanian labor abroad, and their role in economic growth, the study concludes the following:

1. There is a possibility for replacing guest labor by national labor, because there is a similarity in the percentage distribution in terms of educational qualification between guest labor and Jordanians out of work. For example, in 2001, 79.1% of guest labor and 55.8% of Jordanians out of work had an educational level below than the General Secondary Certificate. Also 18.9% of guest labor and 12.5% of Jordanians out of work had the Intermediate Diploma (DOS, 2002). The real trouble here is the dissimilarity between the vocational specializations of the same academic qualification in a way hampered the process of replacement, which was also blocked because of the "Shame Culture" adopted by many Jordanians out of work because of social reasons.
2. In 2001, about 46.3% of guest labor in Jordan works in agricultural and construction sectors, neither of which requires high educational level or professional training. Consequently, replacing this labor by Jordanian labor is not easy as a result of the hard type of work and low wages in these two sectors. About 48.4% of the guest workers in Jordan were from "Production and Laborers" group, while 27.7% of these workers work in agriculture.
3. Most of guest workers in Jordan are from Egypt; their percentage in 2001 was 82.3%, while 90.8% of the guest labor is males. About 51.6% of that labor are concentrated in Amman Governorate, whereas 41.3%

of the Jordanian labor works inside Amman Governorate and 14.6% of it were females at the beginning of 2002 (DOS, 2002).

4. Unemployment rate correlated negatively with Jordanian labor abroad and positively with guest labor, at which Jordanian labor emigration provided the opportunity for Jordanians out of work to find jobs. On the contrary, the increase in guest labor raised its competitiveness to the national labor in all job opportunities.
5. The productivity of a Jordanian worker amounted about 3 times of that of a guest worker all over the economy. This was due to the differences in wages paid for each as well as to the differences in work nature (Annex 2). This means that adopting successful policy of replacing guest labor will increase the National Product and therefore the economic growth if that is accompanied with changes in the fixed capital formation among the economic sectors, which will witness labor substitution. Consequently, wage levels will increase, especially for the Jordanian labor.
6. There was a positive effect of the remittances of Jordanian labor abroad on economic growth (0.221), unlike the negative effect of guest labor remittances (-0.127), whereas the effect of guest labor on economic growth was positive (0.082). Consequently, the open door policy of exporting and importing labor which Jordan adopted had a positive effect on economic growth (0.176) (Annexes 1 & 2).
7. The slight effect of Jordanian workers abroad on economic growth (0.221) means that their remittances were mainly directed to consumption expenditure, and rarely to investment because the remittances per worker were small. For example, they were 5472 JDs per worker in 2001.

Recommendations

In the light of what this study concluded, it is important to set the following recommendations:

- Necessity of qualifying and training the Jordanian man power in the most up-to-date means and techniques to enable it acquire competitive advantage in a manner that insures efficient employment of human potentials.
- Urging the government to earmark more allocations for scientific research and link that with the requirement of the labor market to widen

the scope of using advanced technology which is capable of achieving competitive advantage.

- It is necessary to encourage the policies of qualifying the human capital and giving continued support of income generating micro projects, which provide more job opportunities in national economy and realize economic sufficiency of individuals.
- It is necessary for public and private sectors to work together in multiplying and promoting investment in a way conducive to the improvement of labor productivity so that we may realize toe optimum utilization of human resources.
- There should be more concentration on vocational education in Jordan than on academic education since the former covers most of Jordan's needs of guest labor, which raises the size of technicians and specialists in the national labor force.
- It is important to give priority to Arab labor force in meeting the need of Arab countries in terms of guest labor. This would only come after the Arab worker has received the same training and acquired the same efficiency of the non-Arab worker. This requires Arab cooperation in the field of qualifying Arab labor, activation of research centers and the Arab labor Organization (ALO) and all Arab economic conglomerations.

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ANNEX (1)

Year	Guest Labor (Thousands)	Jordanian Labor Abroad (Thousands)	Remittances of Jordanian Labor Abroad (Million JDs)	Guest Labor Remittances (Million JDs)	Private Consumption (Million JDs) (2)	Gross Fixed Capital Formation (Million JDs) (3)	GNP (Million JDs) (4)	Unemployment rate (%)	1/4 (%)	1/2 (%)	1/3 (%)
1976	-	103.5	5.54	-	152.80	25.20	235.1	13.7	2.4	3.6	22.0
1971	-	117.9	4.97	-	161.70	30.70	247.5	13.8	2.0	3.1	16.2
1972	-	134.3	7.41	-	177.40	36.30	283.7	14.0	2.6	4.2	20.4
1973	0.376	152.9	14.7	-	183.10	47.20	316.7	11.0	4.6	8.0	31.1
1974	0.519	174.2	24.13	-	199.80	63.20	394.80	8.0	6.1	12.1	38.2
1975	2.228	198.4	53.25	-	295.4	87.90	449.5	4.9	11.8	18.0	67.5
1976	4.790	216.3	129.61	-	432.70	182.70	569.4	1.6	22.8	30.0	70.9
1977	9.733	235.8	154.75	15.00	555.00	268.00	698.3	2.2	22.2	27.9	57.7
1978	18.738	257.0	159.38	20.00	650.6	274.60	802.4	2.9	19.9	24.5	58.0
1979	41.042	280.2	180.42	24.00	845.00	334.90	1008.2	3.5	17.9	21.4	52.3
1980	79.566	305.4	236.68	46.00	930.30	452.90	1213.7	3.5	19.5	25.4	52.3
1981	93.402	312.3	340.89	52.00	1141.40	672.60	1526.8	3.9	22.3	29.9	50.7
1982	120.000	317.8	381.87	62.40	1457.90	649.40	1765.5	4.3	21.6	26.2	58.8
1983	130.000	326.4	402.90	72.80	1579.10	570.00	1877.9	4.8	21.5	25.5	70.7
1984	153.519	334.3	475.00	97.50	1648.40	546.60	1995.0	5.4	32.8	28.8	86.9
1985	143.000	339.3	402.90	93.00	1794.80	385.20	2013.5	6.0	20.0	22.4	104.6
1986	130.000	343.3	414.50	86.50	1718.20	410.30	2146.3	8.0	19.3	24.1	101.0
1987	120.000	339.0	317.70	62.40	1669.80	468.40	2158.4	8.3	14.7	19.0	67.8
1988	148.000	311.5	335.70	57.20	1626.50	508.20	2175.9	8.8	15.4	20.6	66.1
1989	196.000	290.100	358.30	52.00	1635.10	547.40	2180.7	10.3	16.4	26.2	65.5
1990	165.000	287.5	331.80	46.80	1976.50	691.40	2428.8	16.8	13.7	16.8	48.0
1991	239.000	285.0	306.30	41.60	2039.60	608.70	2634.0	18.8	11.6	15.0	50.3
1992	153.000	282.4	573.10	58.50	2648.40	980.20	3306.8	15.0	17.3	21.6	58.5
1993	159.000	280.0	720.70	54.1	2720.40	1082.20	3662.3	18.8	19.7	26.5	66.6
1994	213.000	277.4	763.70	63.00	2824.50	1391.00	4095.50	15.3	18.6	27.0	54.9
1995	285.000	275.000	871.70	73.00	2891.80	1393.00	4444.0	14.2	19.6	30.1	62.5
1996	184.4	272.6	1094.80	70.80	3252.20	1443.30	5498.70	12.0	23.8	33.7	57.7
1997	130.229	270.0	1173.50	141.80	3647.20	1325.10	5090.20	14.4	23.1	32.2	88.6
1998	123.985	267.7	1093.80	146.80	4110.40	1189.80	5604.00	15.2	19.5	26.6	91.9
1999	169.542	263.3	1179.80	144.60	4166.20	1353.60	5758.60	14.4	20.5	28.3	87.2
2000	119.337	263.0	1308.20	140.00	4856.10	1263.20	6087.60	13.4	21.5	26.9	103.6
2001	141.186	260.6	1426.00	137.00	N.A	N.A	6391.50	-	N.A	N.A	N.A

ANNEX 2

Results of Estimating the Role of Guest Labor in Economic Growth

Dependent Variable: Real Gross Domestic Product (Y)		
Independent Variables	Coefficient Value	T-Values
Constant Term (C)	-7.57	-3.82*
National Labor (L _j)	0.243	1.99***
Guest Labor (L _g)	0.082	1.01
Capital Stock (K)	1.50	4.96*
Guest Labor Remittances (TR _g)	-0.127	2.04***

R² = 0.982

Adj. R² = 0.975

D.W = 1.85

F = 123.46

ANNEX 3

Results of Estimating the Role of Jordanian Labor Abroad
In Economic Growth

Dependent Variable: Real Gross Domestic Product (Y)		
Independent Variables	Coefficient Value	T-Values
Constant Term (C)	-1.24	-0.42
Labor (L)	0.047	0.28
Capital Stock (K)	0.818	2.48**
Remittances of Jordanian Workers Aboard (TR _j)	0.221	2.07**

R² = 0.98

Adj. R² = 0.973

D.W = 1.70

F = 156.36

* Significant at 1% level.

** Significant at 5% level

*** Significant at 10% level