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Labor Emigration from the Non-oil Arab States: An Assessment of the Structural Impacts

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INTRODUCTION

In contrast to other sources of population change, international migration has certain features which make it unique in policy terms; policies dealing with the flow or stock of migrants require policy decisions by at least two governments. Attempts by any one government to influence its own nationals to emigrate or to attract immigrants will be constrained by national and international legal obligations, as well as by the policies and national interest of other governments. International migration flows, being more responsive than either fertility or mortality to short-run changes in the socio-economic environment, affect the growth and structure of the labor force more immediately (Serageldin, 1983: 217).

Furthermore, the process itself is not easily predictable. Migration flows are seldom unidirectional, but tend to generate a sizable flow of return migration induced by the initial flow of out-migration. Once started, migration develops its own momentum through information networks and the social and financial supports established and provided by earlier migrating friends and relatives. The momentum may persist for short periods even in the face of changed economic conditions, since the factors that produce it effectively lower the costs of relocation.

While determinants and consequences of international migration will vary among countries, depending on their respective labor market conditions and the various policies they pursue (Serageldin 1983: 218), a few generalizations can be made. To date, most of the literature on emigration in the Middle East has focused on the contribution to the originating country in the form of remittances. The general conclusion of studies focusing on this issue is that emigration is a mixed blessing,with a number of positive and negative aspects associated with the resulting inflow of worker incomes (Kertz et al., 1981).[1]

Clearly, however, remittances are only part of the story, and the question of whether, and to what extent, a country benefits from labor emigration is critically dependent on the opportunity costs of the departing workers. If the domestic labor market is tight and if the emigrating workers possess skills that are in short supply, the net impact of emigration might be to reduce the overall income of the exporting country.

While there is an extensive literature on worker remittances, little or no work has been done on the impact on output stemming from emigration. The purpose of this research paper is to fill this gap by examining the sectoral impact of emigration in the Arab world. Has emigration in this region retarded the development of certain sectors? Has this sectoral impact changed over time and, if so, what are the implications for emigration policy in the exporting country?

PATTERNS OF MIGRATION

The labor exporting countries in the Middle East are led by Egypt on an absolute basis. However, Jordan, Lebanon, Oman, Yemen Arab Republic and the People's Democratic Republic of Yemen have much higher percentages of their labor forces working overseas (Tables 1 and 2).(2)

The sectoral distribution of the foreign workforce (Table 3) has varied somewhat from country to country, but aggregate figures are fairly accurate depictions of the situation in the individual economies. In 1975 based on Serageldin et al., 1983: 30-31, non-nationals dominated two sectors: construction, where their share was 79 percent, and manufacturing, where their share was 67 percent.

Only in agriculture was the percentage of non-nationals low (9 percent). The traditional nature of agriculture explains this slight representation of migrants, because international migration to these countries tends to be to the modern rather than to the traditional sector. This situation has changed somewhat over the years in Saudi Arabia and Libya, where modernization of the agricultural sector and withdrawal of national labor increased the demand for foreign workers.

The figures in Table 2 show an increase in the percentages of foreign labor in each sector through 1985, even in the low forecast for that year.

STRUCTURAL DIFFERENCES

Significant differences exist over time between labor exporters and importers (Table 4):

1. Labor importers have a relatively small share of non-oil output devoted to agriculture--this share seems to have stabilized at around 5 percent of non-oil gdp.* The share of agriculture in the labor exporting countries also appears to have stabilized for the time being at around 25 percent of non-oil gdp.

Table 1:

Estimates and Forecasts of Employment in the Arab World, 1975-85

(labor force in thousands)

Importing Countries	1975 Total	1975 % non-Nat	1980 Total	1980 % non-Nat	1985 Total	1985 % non-Nat
Bahrain	78.7	37.0	104.0	41.7	129.2	46.3
Kuwait	297.5	70.8	782.2	67.6	392.8	64.3
Libya	734.5	38.2	997.3	42.3	1260.0	46.3
Oman	192.1	53.7	224.5	47.5	256.8	41.2
Qatar	73.8	83.1	103.7	84.5	133.5	85.8
Suadi Arab	1968.4	34.0	2511.6	41.4	3054.8	48.8
UAE	292.4	84.7	431.0	87.0	569.6	89.2
Algeria	3082.9	0.3	3518.3	1.7	3953.5	3.1
Iraq	3007.6	0.2	3632.6	2.0	4257.6	3.8

Exporting Countries	1975 Total	1975 % Abroad	1975 Domestic	1980 Total	1980 % Abroad	1980 Domestic	1985 Total	1985 % Abroad	1985 Domestic
Egypt	9070	3.7	8734	10112	4.5	9657	11154	5.2	10574
Jordan	207	40.2	124	296	40.6	176	385	41.0	227
Lebanon	522	5.0	496	554	8.0	510	587	10.9	523
Oman	89	25.8	66	120	24.3	91	151	22.8	117
Sudan	3674	0.7	3648	3518	1.5	3465	3361	2.3	3284
Syria	1741	2.1	1704	1839	3.3	1778	1936	4.5	1849
Tunisia	1599	1.8	1570	1757	2.5	1713	1914	3.1	1855
YAR	1033	24.1	784	1061	25.0	796	1087	25.9	805
PDRY	311	12.9	271	333	15.8	280	354	18.6	288

Other Countries	1975 Total	1980 Total	1985 Total
Morocco	4308	4620	4932

Source: Ismail Serageldin, James A. Socknat, Stace Birks, Bob Li, and Clive A. Sinclair, *Manpower and International Labor Migration in the Middle East and North Africa* (New York: Oxford University Press, 1983, p. 26).

Table 2:

Estimates of Employment in the GCC States, 1985

(Labor force in thousands)

Importing Countries	1985 Forecast				1985 Estimated		
	Total	National	Foreign	% Nat	Total	National	Foreign
GCC States							
Bahrain	129.2	69.4	59.8	53.7	129.6	69.6	60.0
Kuwait	392.8	140.4	252.4	35.7	345.7	123.4	222.3
Oman	256.8	151.1	105.7	58.8	507.3	298.3	209.0
Qatar	133.5	18.9	114.6	14.2	115.5	16.4	99.1
Saudi Arab	3054.8	1565.2	1489.6	51.2	2716.0	1390.6	1325.4
UAE	569.6	61.6	508.0	10.8	567.6	61.3	506.3
Sub-Total	4536.7	2006.6	2530.1		4381.1	1959.6	2421.5
Other Arab Labor Importers							
Libya	1260.0	672.8	587.2	53.4	1217.2	650.0	567.2
Algeria	3953.5	3830.9	122.6	96.9	3819.5	3700.7	118.8
Iraq	4257.6	4095.8	161.8	96.2	4112.8	3956.5	156.3
Sub-Total	9471.1	8599.5	871.6		9149.5	8307.2	842.3
TOTAL	14007.8	10606.1	3401.7		13530.6	10266.8	3263.8

Exporting Countries	1985 Forecast				1985 Estimated		
	Total	% Over-seas	Domes-tic	Over-seas	Total	Over-seas	Domestic
Egypt	11154	5.2	10574	580	11178	556	10622
Jordan	358	41.0	227	158	391	152	239
Lebanon	587	10.9	523	64	590	61	529
Oman	151	22.8	117	34	152	33	119
Sudan	3361	2.3	3284	77	3364	74	3290
Syria	1936	4.5	1849	87	1940	83	1857
Tunisia	1914	3.1	1855	59	1916	57	1859
YAR	1087	25.9	805	282	1099	270	829
PDRY	354	18.6	288	66	357	63	294

Other	1975 Total	1980 Total	1985 Total Abroad
Morocco	4308	4620	4932

Source: Ismail Serageldin, James A. Socknat, Stace Birks, Bob Li, and Clive A. *Sinclair, Manpower and International Labor Migration in the Middle Eacst and North Africa* (New York: Oxford University Press, 1983, p. 26).

Table 3:

Employment of Nationals and Non-Nationals by Economic Sector in the Major Labor-importing Countries: Actual 1975 Figures, "Low" Forecasts, 1985

(employment and number in thousands)

Sector	1975			1985		
	Total	% per Sector	% Share	Total	% per Sector	% Share
Agriculture						
Nationals	935.1	90.8	45.9	804.7	73.6	30.0
non-nat	94.9	9.2	5.9	288.5	26.4	9.3
Mining						
Nationals	41.6	63.2	2.1	47.6	46.5	1.8
Non-nat	24.2	36.8	1.5	54.8	53.5	1.8
Manufactur						
Nationals	48.7	33.2	2.4	119.1	40.1	4.4
non-nat	97.8	66.8	6.1	177.4	59.9	5.7
Utilities						
Nationals	28.7	53.8	1.4	44.9	43.3	1.7
non-nat	24.6	46.2	1.5	58.7	56.7	1.9
Construction						
Nationals	153.2	21.3	7.5	396.6	31.7	14.8
non-nat	563.9	78.7	35.2	853.1	68.3	27.4
Trade and Finance						
Nationals	163.5	42.4	8.0	255.4	39.8	9.5
non-nat	221.6	57.6	13.8	401.3	61.1	12.9
Transportation Communications						
Nationals	122.2	51.1	6.0	181.7	43.7	6.8
non-nat	116.8	48.9	7.4	233.9	56.3	7.5
Services						
Nationals	543.7	54.3	26.7	832.7	44.3	31.0
non-nat	457.0	45.7	28.6	1046.0	55.7	33.5
TOTAL						
Nationals	2036.7	56.0	100.0	2682.7	46.3	100.0
non-nat	1600.8	44.0	100.0	3113.7	53.7	100.0

Source: Ismail Serageldin, James A. Socknat, Stace Birks, Bob Li, and Clive A. Sinclair, *Manpower and International Labor Migration in the Middle East and North Affrica* (New York: Oxford University Press, 1983, p. 32).

2. In general, the labor importing countries have, relative to their labor exporting counterparts, considerably higher shares of their non-oil output accounted for by construction, services and, to a lesser extent, distributive activities. The shares of these activities have been more stable in the case of the labor exporting countries.

3. On the expenditure side, major differences exist between the two groups of countries, with the labor importers historically having absorption rates below total output and the labor exporters spending more than they produce. This phenomenon is reflected both in the higher absorption to gdp rate for the exporters and the higher resource gap (exports minus imports) to GDP for the labor importers.

4. In recent years, government expenditures have accounted for a higher percentage of expenditures in the labor importing countries, although in 1975 the labor exporters had a higher share of total government expenditures and military expenditures.

5. The resource gap, although narrowing in recent years, was positive for the labor importers throughout the period under consideration, indicating a balance of payments surplus for the group as a whole. Correspondingly, the labor exporters experienced a chronic balance of payments deficit throughout this period.

6. While labor importers had a significantly higher rate of imports to total expenditures in both 1975 and 1980, they ended the period with rates identical to those experienced by the labor exporters.

As these trends reveal, major differences exist between the labor importing and exporting countries: in particular, the sectoral composition of output.

IMPACT OF OUT-MIGRATION

The theoretical literature concerning migration indicates that under appropriate conditions, labor migration can have positive effects for the labor-exporting countries. Most apparent are the following four benefits (Halliday, 1984: 8):

1. The remittances can become a source of investment capital directed towards developing productive resources.

2. The migrants can acquire skills and experience abroad which, on their return, can enrich the human resources of their home country.

3. The flow of labor from overpopulated and underemployed populations can lead to a rise in labor productivity and initiative, and

4. The reduction of the available supply of labor should lessen pressure on land and on social services.

Table 4:

Comparison of Arab World Labor Importers and Exporters: Structural, Budgetary Differences

(means)

	Labor Importers	Labor Exporters
Structural Factors (percent of non-oil GDP)		
Agriculture, 1975	6.0	30.3
Manufacturing, 1975	13.0	9.5
Construction, 1975	19.9	5.9
Services, 1975	26.5	18.1
Distribution, 1975	32.5	27.4
Agriculture, 1980	4.6	24.4
Manufacturing, 1980	11.7	9.7
Construction, 1980	18.6	6.9
Services, 1980	26.0	19.0
Distribution, 1980	35.5	27.2
Agriculture, 1985	5.7	24.7
Manufacturing, 1985	12.0	10.1
Construction, 1985	14.2	6.7
Services, 1985	30.3	17.0
Expenditures		
1975		
Absorption/GDP	0.70	1.26
Imports/Absorption	0.59	0.39
Resource Gap/Absorption	0.68	- 0.19
Government Exp/Absorption	0.68	0.81
Military Exp/Absorption	0.13	0.26
1980		
Absorption/GDP	0.67	1.32
Imports/Absorption	0.57	0.43
Resource Gap/Absorption	0.57	- 0.22
Goverment Exp/Absorption	0.59	0.31
Military Exp/Absorption	0.15	0.08
1985		
Absorption/GDP	0.91	1.34
Imports/Absorption	0.41	0.41
Resource Gap/Absorption	0.18	- 0.23
Government Exp/Absorption	0.56	0.35
Military Exp/Absorption	0.18	0.09

As Halliday (1984:8) notes, the arguments here are similar to those regarding private foreign investment in third world countries; foreign investment can have mutually beneficial effects, provided the terms of the relationship are controlled in the third world country concerned. In practice, no such control has been exercised in the majority of labor-exporting states.

To date, the record seems to indicate that very little of workers' remittances goes into productive investment. Most is used to purchase consumer goods (many of them imported), and to speculate in land.(3)

For example, in the case of Pakistan, sample surveys indicate that on average the bulk of the remittances were consumed – some 62 percent, about 13 percent was used for the construction or purchase of residential houses, and the balance of 25 percent was allocated among various kinds of agricultural, industrial, commercial and financial investments (Tsakok, 1982: 325).

Similarly, skill acquisition is problematical because unskilled work tends to be allocated to migrants. In the oil-producing states, there is no infrastructure for such training, and there can be very few migrants who have learned anything from their time in these states (Halliday, 1984: 8). In Saudi Arabia, for example, as the demand for skilled labor increases, the government's policy has been to turn to other sources of supply (the Far East and South Asia) rather than to train unskilled Arabs from North Yemen or Egypt.

The third possible consequence, an increase in productivity and innovation, like the fourth, reduced pressure on servies and land, presupposes that the amount of out-migration is sufficient to make a marked difference in the country concerned. While this has been the case for North and South Yemen, and perhaps Jordan, it is doubtful that this has taken place in Egypt and Sudan.

On the production side, the negative elements associated with migration may be more apparent. Labor emigration may cause severe shortages in some specific skills and sectors.(4) These shortages create changes in relative prices that influence the functional and personal distribution of income in ways that have not been examined in depth (Serageldin, 1983: 231).

Several patterns are clear. First, the oil states have succeeded in attracting skilled personnel who are in short supply in their own countries; these include teachers, doctors, building craftsmen, managers and engineers. A survey of

Jordan in 1977 showed that two thirds of all engineers, half of the agricultural engineers, a third of the doctors, and half of the nurses had left the country, as had a third of all graduates of secondary, vocational and teachers' training schools.

A second possible consequence for the labor-exporting states is that the inflow of remittances helps to depress rather than promote their local production by encouraging the importation of foreign goods and, more specifically, the importation of food over local produce from agriculture. Descriptions of North Yemen and the Sudan indicate that this effect has been extremely negative. In North Yemen, imported wheat has for extended periods, been cheaper than the locally produced variety because of the migration-induced rural labor shortages and the resultant increase in agricultural wages.

Third, by stimulating demand for limited supplies of land and by raising wages, remittances have created widespread inflation in some of the labor exporting states. In many cases, the overall effect of labor export has therefore been to depress local production, to reduce – through the loss of large numbers of skilled personnel – the countries' capacity to develop their own economies, and to increase dependency on external sources of finance, sources which are at best fluctuating and impossible to sustain.

In general, therefore, for the labor exporting countries, the major gain has been a substantial inflow of remittances at the cost of a temporary loss of certain skills which cannot be easily replaced. The cost to the economy in terms of foregone output is impossible to quantify given poor employment, wage and manpower data. However, some sense of these losses can be gleaned from a comparative analysis of the sectoral composition and growth of ouput in the region. The next section attempts to determine the extent to which the sectoral patterns of development have been modified in the labor exporting countries.

SECTORAL IMPACT OF MIGRATION

In order to assess the possible effects of labor emigration on the domestic economies of the Arab world labor exporters, a factor (5) analysis was performed on the sectoral composition of output. Based on the availability of data, analysis was confined to three years: 1975, 1980 and 1985 (together with the growth over the 1975-80 period and the 1980-85 interval). The main advantage of factor analysis in this situation is that it: (a) facilitates the identification of broad trends in the sectoral evolution of these economies, and (b) enables us to determine which sectors in the exporting countries have been affected the most as a result of

the loss of labor to emigration, and the resultant gains in labor importing countries from inflow of workers. A second advantage of factor analysis is that it enables us to a unique index for each sector from alternative measures. This property eliminates in part the potential problems associated with arbitrarily using one measure or another.

The sectors examined were (a) construction, (b) oil/minerals, (a) manufacturing, (d) services, and (e) distribution. Because the oil countries usually have a very low share of agriculture in output and or expenditures together with a large shares of oil and construction, the three sectors tend to be highly correlated. Hence agriculture was omitted from this portion of the analysis. To avoid the distortions caused by the oil sector's large share of Gross Domestic Product in many of the sample countries, sectoral output was defined in terms of non-oil/mineral Gross Domestic Product. Undoubtedly, other measures of sectoral output would produce somewhat different results. Hence an additional measure, the share of each sector in total domestic expenditures (absorption), was also used.

In addition to the sectoral measures, two other macro-economic measures were included. Previous analysis (Looney 1988/89; 1989) has indicated that the Dutch Disease effect (appreciation of the real exchange rate) has had a considerable effect on the sectoral composition of output in the labor-importing Gulf States. Since the big wave of labor migration to the Gulf States took place at the time when local currencies were appreciating the fastest, the Dutch Disease effect was included to control for this potential bias.

One of the major differences in expenditure patterns between exporters and importers of labor is the relatively high ratio of absorption (expenditures) to GDP found in the labor exporting countries (Table 4). The labor exporting countries spend considerably more than they produce, with the difference reflected in chronic balance of payments deficits. The weakening of their currencies and/or rationing of foreign exchange during periods of particularly large balance of payments deficits provides a natural tariff protection.

The net result is a stimulus to the production of internationally traded goods. This phenomenon usually occurs during periods of stepped up out-migration of workers (due to the lowering of their cost in the currencies of the labor importing countries). Since this effect masks the reduction in production produced by labor out-migration, it (the ratio of absorption to GDP) was added along with the Dutch Disease term to control for potential effects on the sectoral composition of output not associated with labor movements *per se*..

The computations were made for the structural composition of output at specific points in time: 1975, 1980, and 1985. The main presumption underlying this analysis was that a gradual sectoral evolution in the relative shares of domestic output in the labor exporting countries has been associated with past out-migration of labor.

Computations were made in two steps:

1. Compositional Effects. The percent of each country's labor force working abroad was factor analyzed along with the shares of output accounted for by the major economic sectors. This labor force measure attempts to assess the degree to which sectoral output has evolved as a consequence of relatively high proportions of the labor force being physically absent from the domestic economy.

2. Size Effects. Each country's overseas labor force as a percentage of the total Arab world foreign workforce was introduced into the factor analysis in place of the proportion of its national workers employed abroad. This measure of out-migration attempts to determine whether and to what extent the absolute size of the national workforce working abroad affects the domestic structure of production.

Each set of computations focuses on a different aspect of the deviations from the normal structure of production which the exportation of labor has caused. Is it the loss of labor *per se* that has the greatest impact on domestic production? Or instead, are the exporters of large amounts of labor affected to a greater extent than the countries where the outflow of labor represents a small share of the total Arab expatriate labor?

Several distinct patterns have characterized the changes in the composition of sectoral output associated with the exportation of labor. Tables 5 and 6 are related to the 1975 period:

1. Increased proportions (Table 5) of the labor exporters' labor force working in foreign countries were generally associated with lower relative output from the distribution sector, as well as (to a lesser extent) construction and manufacturing/services.

2. In terms of the impact of out-migration on individual countries (based on the difference in factor scores between those obtained with the proportion of national labor working outside the country and those with this variable omitted from the analyis), both Yemen Arab Republic and Sudan have experienced relatively large contractions of their construction and manufacturing/service setors due to the loss of labor to other countries.

Table 5:

Impact of Out-migration on Arab
World Labor Exporters: Composition Effects, 1975

(Standardized Regression Coefficients)

	Factor 1 Oil/Construct	Factor 2 Manuf/Servi	Factor 3 Absorption	Factor 4 Distrib
oil/absorption	0.96*	0.16	- 0.09	-0.11
construction/abs	0.93*	-0.09	0.23	0.00
oil/gdp	0.88*	0.07	-0.36	-0.10
construction/gdp	0.86*	-0.28	-0.08	0.02
services/absorption	0.15	0.92*	-0.02	0.05
manufacturing/gdp	-0.14	0.88*	-0.00	-0.08
manufacturing/abs	-0.15	0.85*	0.26	-0.09
distribution/abs	0.14	0.24	0.90*	0.39
absorption/GDP	-0.17	0.34	0.81*	-0.22
services/gdp	0.21	0.56*	-0.77*	0.18
distribution/gdp	0.32	-0.12	0.32	0.80*
Dutch Disease	-0.51*	0.17	-0.27	0.67*
% Labor Force Abr	-0.49	-0.29	-0.06	-0.54
(factor scores)				
Labor Exporters With Exportation of Labor				
Jordan	-0.78	-0.11	-0.17	1.04
PDRY	-0.69	-0.43	-0.06	0.38
Yemen Arab Rep	-1.11	-1.24	0.40	-0.15
Egyp	-1.05	0.39	0.31	-0.34
Algeria	-0.26	-0.38	-0.08	-0.55
Tunisia	-0.57	0.12	0.45	-0.71
Sudan	-0.74	-0.68	1.22	-1.46
Morocco	-0.68	1.13	0.02	-0.30
Labor Exporters Without Exportation of Labor				
Jordan	-0.80	0.09	-0.60	1.07
PDRY	-0.67	-0.33	-0.17	0.32
Yemen Arab Rep	-0.84	-0.97	0.64	-0.10
Egyp	-1.06	0.50	0.35	0.13
Algeria	-0.17	-0.31	0.01	-0.07
Tunisia	-0.46	0.23	0.62	-0.15
Sudan	-0.42	-0.34	1.70	-0.48
Morocco	-0.72	1.17	0.01	0.05

Note: See Appendix A for a discussion of factor analysis and the procedures used to derive the values reported above. These results were obtained through an oblique factor analysis rotation. Employment figures are in terms of a share of Arab world endowment. Dutch Disease is the appreciation in real exchange rate relative to 1974. gdp = non-oil gross domestic product.

GDP = Gross Domestic Product. abs = absorption.

3. Distributional activities in Egypt, Algeria, Tunisia, Sudan, and Morocco also experienced considerable contraction as a result of prior out-migration of workers.

4. In terms of expenditures (the absorption/GDP) ratio, Jordan appears to have had the greatest expansion in over-all expenditures. In part, this pattern stems from the large volume of remittances sent back to that country by its foreign work force.

5. In 1975 (Table 6), the size effects were largely concentrated in the distribution sector, with sizeable decreases in the relative share of this sector occurring with out-migration from Yemen Arab Republic, Egypt, Tunisia, Sudan and Morocco.

6. The size effect also worked to reduce the relative amount of manufacturing/services in Yemen Arab Republic, Egypt, and Sudan. However, the relative share of manufacturing in output in Morocco showed considerable expansion with out-migration. This increase may, however, be related simply to large reductions associated with labor outflow from other sectors.

7. Again, Jordan had a large increase in domestic absorption associated with the exportation of labor. Egypt also displayed a pattern of increased absorption, given the size of its foreign workforce.

By 1980, several structural changes had occurred:

1. In terms of the composition (Table 7) of the labor force, manufacturing and services had evolved in ways unique enough so that each sector was now a separate dimension in the analysis.

2. Increased exportation of workers was largely associated with depressed rates of manufacturing output along with a relative decline in the importance of the construction sector in total output.

3. In terms of individual countries, Yemen Arab Republic and the People's Democratic of Yemen would have had a fairly large increase in the relative importance of manufacturing in their economies in the absence of labor exportation. Jordan, Egypt, and Algeria would have experienced similar but lesser gains in this regard.

Table 6:

Impact of Out-migration on Arab
World Labor Exporters: Size Effects, 1975

(Standardized Regression Coefficients)

	Factor 1 Oil/Construct	Factor 2 Manuf/Servi	Factor 3 Absorption	Factor 4 Distrib
oil/absorption	0.94*	0.19	-0.10	0.03
construction/abs	0.85*	-0.08	0.22	0.23
oil/gdp	0.83*	0.09	-0.37	0.00
construction/gdp	0.75*	-0.28	-0.09	0.19
Ductch Disease	-0.80	0.06	-0.33	0.51*
services/absorption	0.12	0.93*	-0.06	0.07
manufacturing/gdp	-0.07	0.89*	-0.01	-0.14
manufacturing/abs	-0.07	0.86*	0.26	-0.11
distribution/abs	0.04	0.24	0.87*	0.56*
absorption/GDP	-0.01	0.37	0.84*	-0.14
services/gdp	0.07	0.54*	-0.82*	0.12
distribution/gdp	0.01	-0.16	0.25	0.92*
% Arab World Expatriate Labor (factor scores)	**-0.17**	**-0.01**	**0.21**	**-0.62***
Labor Exporters With Exportation of Labor				
Jordan	-0.88	0.07	-0.21	1.14
PDRY	-0.73	-0.41	-0.08	0.30
Yemen Arab Rep	-0.85	-1.12	0.54	-0.48
Egypt	-1.15	0.29	0.71	-1.35
Algeria	-0.24	-0.46	0.02	-0.57
Tunisia	-0.47	0.13	0.50	-0.48
Sudan	-0.44	-0.64	1.41	-1.30
Morocco	-0.78	1.77	0.15	-0.56
Labor Exporters Without Exportation of Labor				
Jordan	-0.80	0.09	-0.60	1.07
PDRY	-0.67	-0.33	-0.17	0.32
Yemen Arab Rep	-0.84	-0.97	0.64	-0.10
Egypt	-1.06	0.50	0.35	0.13
Algeria	-0.17	-0.31	0.01	-0.07
Tunisia	-0.46	0.23	0.62	-0.15
Sudan	-0.42	-0.34	1.70	-0.48
Morocco	-0.72	1.17	0.01	0.05

Note: See Appendix A for a discussion of factor analysis and the procedures used to derive the values reported above. These results were obtained through an oblique factor analysis rotation. Employment figures are in terms of a share of Arab world endowment. Dutch Disease is the appreciation in real exchange rate relative to 1974. gdp = non-oil gross domestic product.
GDP = Gross Domestic Product. abs = absorption.

Table 7:

Impact of Out-migration on Arab
World Labor Exporters: Composition Effects, 1980

(Standardized Regression Coefficients)

	Factor 1 Manufact	Factor 2 Construct/oil	Factor 3 Services	Factor 4 Distribution
manufacturing/abs	0.93*	0.00	0.13	-0.04
manufacturing/gdp	0.86*	0.12	0.10	-0.16
absorption/GDP	0.78*	-0.19	0.03	0.15
Dutch Disease	0.63*	-0.02	-0.36	0.18
construction/abs	0.10	1.01*	-0.11	-0.05
construction/gdp	-0.14	0.97*	-0.15	-0.11
oil/gdp	-0.23	0.67*	0.31	0.24
oil/absorption	-0.13	0.63*	0.39	0.28
% Labor Force Abr	**-0.63**	**-0.74***	**0.00**	**0.07**
services/gdp	-0.11	0.02	0.99*	-0.11
services/absorption	0.39	-0.10	0.89*	-0.01
distribution/gdp	-0.17	0.06	-0.08	0.96*
distribution/abs	0.46	-0.06	-0.03	0.82*
(factor scores)				
Labor Exporters With Exportation of Labor				
Jordan	-0.67	0.02	-0.64	0.12
PDRY	-0.90	-1.17	-0.52	-1.50
Yemen Arab Rep	-1.35	-1.21	-1.05	-1.26
Egypt	-0.60	0.52	-0.98	0.08
Algeria	-0.53	0.41	1.80	-0.21
Tunisia	-0.58	0.95	-0.91	-0.56
Sudan	-1.45	0.21	-0.76	1.72
Morocco	-0.16	2.10	-0.89	-1.06
Labor Exporters Without Exportation of Labor				
Jordan	-0.56	0.04	-0.57	0.12
PDRY	-0.51	-0.92	-0.17	-1.21
Yemen Arab Rep	-0.96	-0.80	-0.69	-0.87
Egypt	-0.42	0.63	-0.83	0.22
Algeria	-0.44	0.45	1.89	-0.22
Tunisia	-0.48	1.09	-0.86	-0.57
Sudan	-1.42	0.34	-0.73	1.84
Morocco	-0.09	2.28	-0.84	-1.12

Note: See Appendix A for a discussion of factor analysis and the procedures used to derive the values reported above. These results were obtained through an oblique factor analysis rotation. Employment figures are in terms of a share of Arab world endowment. Dutch Disease is the appreciation in real exchange rate relative to 1974. gdp = non-oil gross domestic product.
GDP = Gross Domestic Product. abs = absorption.

4. The construction sector, in PDR Yemen, Yemen Arab Republic and, to a lesser extent, Tunisia and Morocco appears to have suffered the most from the loss of workers to other countries during this period.

5. Again, distributional activities were adversely affected to the greatest degree in PDR Yemen and Yemen Arab Republic, although Egypt and to a much lesser extent Sudan suffered a decline in the relative importance of this sector as a result of out-migration of workers.

6. In general, the effects associated with the size dimension were for all practical purposes close enough to those associated with the composition of the labor force, so that they need not be repeated here.

Finally, by 1985 (Table 8):

1. Looking at the factor analysis (top part of Table 8), it appears that the effects of increasing the proportion of the labor force outside the country resulted in declines in output in a number of sectors.

2. A closer examination of factor scores indicates, however, that these losses were concentrated in the PDR Yemen and Yemen Arab Republic. Both countries suffered fairly large declines in their service, manufacturing, construction and distributional sectors.

3. On a lesser scale, Egypt had a decline in its service sector, while Tunisia, Sudan and Morocco suffered relative contractions in their manufacturing as a result of out migration of labor.

4. As in 1980, the size effects (Table 9) associated with out-migration of workers are again roughly similar to the compositional effects.

5. There are, however, several subtle differences between the two measures of out-migration: (a) the contraction in output suffered by the Yemens appears less when examined in terms of the absolute number of workers leaving the country (as opposed to an increase in the proportion of the work force), and (b) the service sector in Algeria contracts due to the size effect, as does the construction sector in Egypt.

Summing up, it appears that the opportunity costs of labor emigration from the main Arab world labor exporters has shifted over time from concentration in the distribution sector to more dispersed sectoral impacts varying from country to country. In addition, it appears that a certain amount of convergence has occurred between the larger and smaller exporters so that the sectoral impacts experienced by both types of countries vary little, depending on whether one looks at the composition of the national labor force or the relative volume of workers leaving the country.

Table 8:

Impact of Out-migration on Arab
World Labor Exporters: Composition Effects, 1985

(Standardized Regression Coefficients)

	Factor 1 Services/oil	Factor 2 Manufact	Factor 3 Construction	Factor 4 Distribution
services/gdp	1.00*	0.00	-0.12	-0.24
oil/gdp	0.86*	-0.28	0.01	0.21
oil/absorption	0.84*	-0.11	0.13	0.19
services/absorption	0.81*	0.37	-0.01	-0.17
manufacturing/abs	0.01	0.97*	0.04	0.03
manufacturing/gdp	0.08	0.82*	-0.02	-0.07
Dutch Disease	-0.02	0.75*	-0.34	-0.08
absorption/GDP	-0.14	0.72*	0.12	0.19
% Labor Force Abr	**-0.39**	**-0.45***	**-0.21**	**-0.34**
construction/abs	-0.01*	0.11	1.00*	-0.05
construction/gdp	0.01	-0.16	0.97*	-0.13
distribution/gdp	0.06	-0.17	-0.15	0.98*
distribution/abs	-0.12	0.30	-0.01	0.88*
(factor scores)				
Labor Exporters With Exportation of Labor				
Jordan	-0.56	0.02	-0.64	0.12
PDRY	-0.90	-1.17	-0.52	-1.50
Yemen Arab Rep	-1.35	-1.21	-1.05	-1.26
Egypt	-0.60	0.52	-0.98	0.08
Algeria	-0.53	0.41	1.80	-0.21
Tunisia	-0.58	0.95	-0.91	-0.56
Sudan	-1.45	0.21	-0.76	1.72
Morocco	-0.16	2.10	-0.89	-1.06
Labor Exporters Without Exportation of Labor				
Jordan	-0.56	0.04	-0.57	0.12
PDRY	-0.50	-0.92	-0.17	-1.21
Yemen Arab Rep	-0.97	-0.80	-0.69	-0.87
Egypt	-0.42	0.63	-0.83	0.22
Algeria	-0.44	0.45	1.89	-0.22
Tunisia	-0.48	1.09	-0.86	-0.57
Sudan	-1.42	0.34	-0.73	1.84
Morocco	-0.09	2.28	-0.84	-1.12

Note: See Appendix A for a discussion of factor analysis and the procedures used to derive the values reported above. These results were obtained through an oblique factor analysis rotation. Employment figures are in terms of a share of Arab world endowment. Dutch Disease is the appreciation in real exchange rate relative to 1974. gdp = non-oil gross domestic product.
GDP = Gross Domestic Product. abs = absorption.

Table 9:

Impact of Out-migration on Arab world Labor Exporters: Size Effects, 1985

(Standardized Regression Coefficients)

	Factor 1 Services/oil	Factor 2 Manufact	Factor 3 Construction	Factor 4 Distribution
services/gdp	0.97**	0.02	-0.07	-0.23
oil/gdp	0.84*	-0.09	0.14	0.22
oil/absorption	0.84*	-0.26	0.03	0.20
services/absorption	0.83*	0.40	0.03	-0.11
manufacturing/abs	0.04	0.97*	0.06	0.06
manufacturing/gdp	0.08	0.81*	0.01	-0.07
absorption/GDP	-0.09	0.74*	0.11	0.26
Dutch Disease	-0.02	0.74*	-0.26	-0.11
construction/abs	-0.01	0.11	0.99*	-0.02
construction/gdp	-0.01	-0.16	0.96*	-0.12
% Arab World Expatriate Labor	-0.23	-0.05*	-0.50	-0.01
distribution/gdp	0.07	-0.16	-0.11	0.95*
distribution/abs	-0.07	0.33	0.01	0.90*
(factor scores)				
Labor Exporters With Exportation of Labor				
Jordan	-0.71	-0.05	-0.54	0.00
PDRY	-0.75	-1.00	-0.31	-1.35
Yemen Arab Rep	-1.15	-0.93	-1.03	-0.91
Egypt	-0.75	0.52	-1.61	0.07
Algeria	-0.65	0.33	1.74	-0.29
Tunisia	-0.57	0.98	-0.81	-0.57
Sudan	-1.46	0.21	-0.72	1.78
Morocco	-0.14	2.16	-0.70	-1.11
Labor Exporters Without Exportation of Labor				
Jordan	-0.56	0.04	-0.57	0.12
PDRY	-0.50	-0.92	-0.17	-1.21
Yemen Arab Rep	-0.97	-0.80	-0.69	-0.87
Egypt	-0.42	0.63	-0.83	0.22
Algeria	-0.44	0.45	1.89	-0.22
Tunisia	-0.48	1.09	-0.86	-0.57
Sudan	-1.42	0.34	-0.73	1.84
Morocco	-0.09	2.28	-0.84	-1.12

Note: See Appendix A for a discussion of factor analysis and the procedures used to derive the values reported above. These results were obtained through an oblique factor analysis rotation. Employment figures are in terms of a share of Arab world endowment. Dutch Disease is the appreciation in real exchange rate relative to 1974. gdp = non-oil gross domestic product.
GDP = Gross Domestic Product. abs = absorption.

CONCLUSIONS

Clearly, the migrants gain financially and their families enjoy higher standards of living. However, it is far less clear that the economies of the labor exporting countries derive a net gain. The departure of unskilled or semi-skilled, as well as some university graduates in surplus supply (such as Egypt), reduces the magnitude of unemployment, or what is more common, disguised unemployment. Initially, the main outflow of workers from the labor exporting countries was apparently comprised fairly heavily of this type of labor, with the net result being a reduction in the relative importance of distributional activities in these economies. In addition, the larger labor exporters were feeling these impacts to a much greater extent than their smaller counterparts.

Over time, it appears that out-migration of labor has slowed down to the extent that only relatively minor differences exist in the nature of sectoral changes between the two groups of countries. Having said this, it should be noted again that out-migration has most affected the productive structure of the Yemens, perhaps followed by Egypt, Sudan and Jordan in that order.

More importantly over time, the impacts of out-migration appear much less specific in distribution and seem to be concentrated more in the areas of skilled technicians, machinists, construction workers and certain professionals. The result has been to divert lost output away from distribution and in some cases towards manufacturing. Again, this effect has retarded the development of industry in countries such as the Yemens, but may also be a factor underlying the recent slow-down in industrial growth in Egypt, Sudan and Morocco.

Obviously, these losses must be weighed against the potential benefits stemming from remittances received by the labor exporting countries. While detailed studies of the industrial sectors of the labor exporters must be made before any definitive conclusions can be drawn, it appears from the results obtained here that sufficient losses occur in these countries as to warrant the development of a comprehensive policy toward emigration.

APPENDIX A
METHODOLOGY

The main statistical tool used in the analysis above was factor analysis, and in particular oblique rotation factor analysis.[7] This technique is often used in exploratory data analysis. It has three general objectives: (1) to study the correlations of a large number of variables by clustering the variables into factors such that variables within each factor are highly correlated; (2) to interpret each factor according to the variables belonging to it; and (3) to summarize many

variables by a few factors. The usual factor analysis model expresses each variable as a function of factors common to several variables and a factor unique to the variable:

$$z_j = a_{j1} F_1 + a_{j2} F_2 + ...+ a_{jm} F_m + U_j$$

Where:

z_j = the jth standardized variable
m = the number of factors *common* to all the variables
U_j = the factor unique to variable a_j
a_{ij} = *factor loadings*

The number of factors, m, should be small and the contributions of the unique factors should also be small. The individual factor loadings, a_{ji} for each variable should be either very large or very small so each variable is associated with a minimal number of factors.

Variables with high loadings on a factor tend to be highly correlated with each other, and variables that do not have the same loading patterns tend to be less highly correlated. Each factor is interpreted according to the magnitiudes of the loadings associated with it. The original variables can be replaced by the factors with little loss of information.

Each case receives a score for each factor; these *factor scores* are computed as:

$$F^*_i = b_{i1}z_1 = b_{i2}z_2 +...+ b_{ip}z_p$$

Where b_{ij} are the *factor score coefficients*. Factor scores can be used in later analysis, replacing the original variables. These scores usually have less error, and are therefore more reliable measure than the original variables. The scores express the degree to which each case possess the quality or property that the factor describes. The factor scores have a mean and standard deviation of one. As an example, in Table 7, Sudan has one of the larger shares of output devoted to distributional activities in the Arab world. On the other hand PDRY has one of the lowest.

In summary there are four main steps in factor analysis First, the correlation or covariance matrix is computed. Second the factor loadings are estimated (the initial factor extraction). Third, the factors are *rotated* to obtain a simple interpretation (making the loadings for each factor either large or small, not in between). Finally, *factor scores* are computed.

A key aspect of factor analysis is the concept of rotation. Factors are rotated to obtain a simple interpretation; in other words, the goal is to make the loadings for each factor either large or small, not intermediated. The common rotations are orthogonal and oblique. In orthogonal rotations, the factors are uncorrelated. In ablique rotation the scores can be correlated. However the advantage of this rotation there is a greater tendency for each variable to be associated with a single factor. That is in oblique rotations factors are formed that maximize the loadings of their component variables.

Computations were made using the BDDP Statistical Package (1990). The data set used for the analysis was from the Arab Monetary Fund (1987) and Serageldin et. al. (1983). The data set was comprised of the twenty Arab Monetary Fund Members. In the presentation of the results (Tables 5 through 9) the standardized regression coefficients for the sector variables and the factor scores for the countries are listed. Standardized regression coefficients are similar to the factor loadings noted above and reflect the strength of each variable--Ductch Disease etc. When regressed on the respective factor (Factors 1 through 4). As noted the factor scores reflect the relative attainment of each country of the respective factor i.e. which have large service sectors, low proportion of activity in distribution and so on.

NOTES

1. Cf. M.M. Kertz, C.B. Keely, and S.M. Tomasi, eds., (1981)

2. The 1985 figures were calculated by adjusting "low" labor forecasts presented in Ismail Serageldin, James A. Socknat, Stace Birks, Bob L. and Clive A. Sinclair (1983), Based on the GCC employment figures presented in Stace Birks and Clive Sinclair, *Saudi Arabia to the 90s* (1989). The 1985 forecast figures were then proportionalized downward to reflect the recent fall off in the regions's demand for foreign workers. The total labor forces (domestic plus foreign components) of the labor exporting countries were assumed unchanged, but there compositions were adjusted to reflect the lower foreign component. The figures for 1980 were calculated by interpolating the 1975 and 1985 figures.

3. As documented in: John C. Swanson (1989), Nabeel Abraham (1977), and Suzanne Paine (1974).

4. Shortages of construction workers have been documented for Egypt. cf. Choucri, Eckaus and Eldine (1978).

5. An excellent description of factor analysis and its applications is given in R.J. Rummel (1970).

6. Data is from Arab Monetary Fund (1987).

7. In addition to Rummel (1970) see James W. Frane and Mary Ann Hill, "Annotated Computer Output for Factor Analysis: A Supplement to the Writeup for Computer Program BMDP4M" *Technical Report ≠8* (Los Angeles: BMDP Statistical Software, 1987).

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ÖZET

Petrol üretmeyen ülkelerden göç eden işçiler daha yüksek yaşam standardına ulaşmakta ve mali açıdan kazançlı olabilmektedirler. Ancak, işçileri göç eden bu ülkelerin kazançları o kadar açık değildir. Bu etki Yemen gibi bazı ülkelerde sanayinin gelişmesini önlediği gibi, Mısır, Sudan ve Fas gibi ülkelerde de sanayideki büyümenin yavaşlamasını izah edebilecek önemli faktörlerden birisi olarak düşünülebilir. Bu kayıplar işçilerin ülkelerine göndermiş oldukları dövizlerle bir ölçüde dengelenebilmektedir. Bu konudaki kesin sonuç bu ülkelerin sektör bazındaki çalışmalarla ortaya çıkabilir. Ancak bu makalede elde edilen sonuçlar göç konusu için kapsamlı bir politikanın gerekliliğini ortaya koymaktadır.