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Gang, Ira N.; Bauer, Thomas

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NETWORKS AND THE DURATION OF TEMPORARY MIGRATION*

by

Thomas Bauer
IZA, Bonn and CEPR

and

Ira N. Gang
Rutgers University

July 15, 2002

Abstract

This paper analyzes the duration of temporary migration. Special attention is paid to the role of social and informational migration networks. We investigate the determinants of migration duration using a semiparametric proportional hazard model for discrete duration data. Our data consists of a sample of return migrants from six villages in Egypt. Controlling for human capital and demographic characteristics of the migrants and economic indicators of the host country, we show that social and informational networks have a statistically significant negative effect on migration duration.

JEL Classifications: J61
Keywords: return migrants, duration of migration

Thomas Bauer
IZA
P.O. Box 7240
53072 Bonn, Germany
Tel.: +49 228 38 94 305
Email: bauer@iza.org

Ira N. Gang
Economics Department
Rutgers University
New Brunswick NJ 08901-1248 USA
Tel.: +1 732 932-7405
Email: gang@economics.rutgers.edu

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1. Introduction

Egyptian migration is largely a temporary phenomenon. Most migrants return to Egypt after spending some time in a host country. We analyze the duration of temporary international migration by Egyptians. Though temporary, Egypt experienced large scale international emigration to oil rich countries in the Middle East in the 1970s and 1980s.

Both the theoretical and the empirical literature on temporary migration treat return migration as part of life-cycle planning. While the models differ in their nuances, return migration is an optimal decision-making phenomenon related to the savings behavior of immigrants, their investment in human capital acquisition in the host country, their preferences for home consumption over consumption abroad, and the relative real wage differences between the host and sending. The length of time abroad is related to the acquisition of these assets. The links, however, between the actual length of time abroad and life cycle considerations are tenuous and subject to a number of exogenous shocks. Employment and investment opportunities in the origin area, occupation, employment and legal status are some of the factors that have been shown to influence migration duration.

We emphasize the role of social and informational networks as determinants of migration duration. Ties of kinship, friendship, and village, link migrants, former migrants, and non-migrants in the home and host country. Beneficial network externalities arise when previous migrants provide shelter and work, assistance in obtaining credit, and/or generally reduce the stress of relocation to a foreign culture (Bauer, 1995). These personal connections provide potential migrants with information about the labor market in the host country. They offer important data that work to mitigate imperfect information about the labor market in the host country, enabling the migrant to obtain better paid and more stable jobs. Empirical investigations indicate that social networks have a positive effect on the wages of immigrants (Bauer and Zimmermann, 1997; Espinosa and Massey, 1997; Massey et. al., 1987; Phillips and Massey, 1999). Thus the stock of migrants in a certain location, or who have been to a certain location, directly affects the migrants' situation in the host country.

Since networks are expected to raise the return to migration the ultimate effect of bigger networks on the duration of migration depends on the relative magnitude of the income and substitution effects: Here,

the higher wage in the host country generates a positive substitution effect by increasing the opportunity costs of returning home. The substitution effect works to keep migrants abroad longer. At the same time there is a negative income effect of wages on duration abroad. The higher wage increases the consumption possibilities in the home country. The income effect works to shorten migration duration.

Our data is on individuals from six geographically and religiously diverse villages in Egypt, which contains detailed information on their migration histories. Our measure of length of a stay is the number of years abroad. Rather than assume that this represents a continuous variable, we think of the years abroad as corresponding to a conceptually continuous index. What we observe, i.e., the number of years abroad, corresponds to a specific range of the index. Thus, we estimate a semiparametric proportional hazard model for discrete duration data as proposed by Han and Hausman (1990). In essence, this model is an ordered logit model, where the threshold values are interpreted as the logs of the baseline hazard.

The next section describes our data and the representativeness of the sample we employ. In Section 3 we discuss our econometric framework and present the estimation results. Section 4 concludes.

2. Egyptians' Migration Experience and Description of Sample

Before 1973, Egypt was an immigration country rather than an emigration country.[1] Although systematic emigration began in the late 1930's within a program that sponsored the migration of teachers to Iraq and was extended to include other Arab countries after 1952, emigration was controlled through "exit visa" requirements. In the beginning of the 1970s migration policy liberalized. This change in immigration policy combined with an increased demand for skilled and unskilled labor in oil-rich countries after the world energy crisis in 1973 led to a dramatic increase in Egyptian emigration. The main receiving countries are Saudi Arabia, Kuwait, the United Emirates, Libya, Jordan and Iraq. There are two reasons why migration to these countries has been mainly temporary. First, most of the receiving countries discourage the permanent residence of migrants. Second, most Egyptian migrants have an intrinsic desire to return home

[1] See Aly and Shields (1996), Kandil and Metwally (1992), Richards (1994), and Sell (1988) for a description of the Egyptian migration experience and migration policy. See Adams (1994) for an excellent analysis of the determinants of international migration from rural Egypt.

after satisfying their financial or educational objectives (Kandil and Metwally, 1992, Sell, 1988).

The number of Egyptians working in oil-rich countries in 1975 is estimated to lie between 370,000 and 400,000 (see Kandil and Metwally, 1992, and Sell, 1988). In 1985 about 10% of the Egyptian labor force or between 2.5 and 3.5 million workers are estimated to have been working in a foreign country (Sell, 1988). This large-scale emigration had dramatic impacts on several labor markets in Egypt. Aly and Shields (1996) report that between 1970 and 1979 about 10% of the agricultural workers left Egypt and between 1973 and 1978 the construction sector lost about half of its labor force. Richards (1994) calculates that emigration flows account for roughly two-thirds of the reduction in the agricultural labor force by 1983.

We use a survey of randomly selected return migrants collected in May and July 1987 and May and July 1988 in six rural villages in three Egyptian provinces (Reichert, 1993). The data contains detailed information on the socioeconomic characteristics of the migrants. The villages covered by the surveys represent diverse religious and geographic distributions. Two of the villages are located in the western delta (Shanawan and Kafr Shanawan), two are in the eastern delta (Tambul el Kubra and Kafr Yussuf), and two are in upper Egypt (Abu Girg and Bani Wallims). The majority of the population in the smallest village, Kafr Yusuf, is Christian, unlike the other locations. All migrants in the sub-sample are male.

Table 1 provides descriptive statistics of the variables used in the analysis for the sample of returned migrants. Our sample consists of 477 individuals who visited either Iraq, Saudi Arabia, Jordan, or Libya. These are all migrants who have returned to their home country (i.e., a completed duration sample). Our analysis should be interpreted in this light. Migration in our sample begins no earlier than 1970 and ends no later than May 1988. **Table 1** shows that 48% of the migrants stay less than two years abroad, 24% stay between two and three years, and 28% stay more than three years. These numbers are similar to those of the 1987 CAPMAS Survey, which also addresses duration of a stay abroad (Richards, 1994). The 1987 CAPMAS survey found 59% of rural migrants had been out of Egypt for less than two years, 19% out of Egypt between two and three years, and 22% stay abroad for more than three years.

We are particularly interested in the relationship between migration networks and migration duration. We define migration networks by the number of fellow villagers who have previously migrated to the same

destination country at the time a person makes his migration decision. This variable has been constructed using information from the household survey and the survey of all migrants in the village: we counted the number of migrants from a village who migrated to a particular host country in the time before the year of the first migration of an individual in our sample to the same host country. We do not discount time since returning for those who have returned. Although their knowledge of current labor market conditions may deteriorate, they provide key links and support for the network which can affect migration duration.

Figure 1 shows how the network variable changes over time. In all of the villages the majority of migrants apparently choose one or at most two different receiving countries. Migrants from Shanawan go mainly to Iraq followed by Saudi Arabia, whereas people from the neighboring village Kafr Shanawan choose mainly Saudi Arabia as their destination followed by Iraq. Migrants from Abu Girg go predominantly to Saudi Arabia. Those from Bani Wallims, Tambul el Kubra, and Kafr Yussuf migrate almost exclusively to Iraq. This pattern is a clear indication of the importance of migration networks.

In order to control in the multivariate analysis for other factors that may affect the duration of time abroad, we include several variables capturing the economic and social conditions. The other variables we consider can be loosely broken into four groups. The first group describes the individual characteristics of a migrant, such as his educational level, his occupation in the host country, whether he is the head of the household, and whether he was a contract worker in the receiving country.[2] The educational level of the migrant and his occupation in the host country control for the earnings potential in the host country. **Table 1**, indicates a tendency of highly educated migrants and those migrants who find employment as skilled workers to stay abroad longer. The status of a migrant in the household affects migration through his potential contribution to the household's income.[3] One may expect, that household heads have a higher

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[2] Note that age is not contained in the analysis. Age is an important determinant of migration. Since everyone in our sample is a return migrant, and all were young at the time of their migration, there is little variation in age that helps explain duration of the stay abroad.

[3] One problem we face with the data is that we don't have information referring to the time when agents made their migration/return decisions. For two of our variables, head of the household and marital status, we are forced to use status at the time of the survey rather than at the time of migration. We use these two variables as proxies for the appropriate (unobserved) variables. Marital status may be capturing where the migrant was heading at the time of his period abroad and the incentives he had for returning,

incentive to stay shorter because of the administrative role he may play in the family. **Table 1** confirms this hypothesis. We also differentiate between contract workers, defined as those migrants who returned to Egypt because of the end of their work contract abroad, and non-contract workers who returned because of other reasons. **Table 1** shows that about 28% of the individuals in our sample returned because their work contract expired and that the share of contract workers among the return migrants increases with migration duration. It may be expected that those who emigrated with a fixed work contract are less dependent on demand shocks and have more stable jobs and wages.

The second group of variables describes the family situation of the migrant, including family size and dummy-variables indicating whether the migrant is married. One may expect that married migrants have an incentive to spend less time abroad than non married migrants. 91% of the return migrants are married, though we are not certain of their marital status at the time of migration. Household size controls for the family's labor supply. The greater the households size the more likely other adults in the household take over the household duties of those who migrate and the less likely the immigrant will return (Reyes, 1997).

The third group of variables tries to capture the labor market situation in the host country. Dummy variables indicating the host country of the migrant control for the political and economic situation in the receiving country. **Table 1** shows remarkable duration differences among different host countries. Whereas migrants tend to stay only a very short time in Iraq, the majority of migrants who stay longer than five years abroad migrate to Saudi Arabia. In addition, we include as a macroeconomic indicator the nominal oil price in the year before the migrant returned, which is highly positively correlated with other macroeconomic variables such as the GDP or exports. As did educational level and occupation in the host country, this variable controls for the overall earnings potential in the host country. We also consider a dummy variable indicating whether the migrant received less income abroad than he expected. Those migrants who expected more income show a slight tendency to stay abroad longer.

Due to the definition of our network variable it is possible that the estimated effect of this variable on migration duration is confounded by village effects and/or time effects. To mitigate these identification

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for example.

problems the fourth group of variables we include in our estimations are village and period dummies, the latter capturing the individual's year of emigration. **Figure 2** shows the emigration pattern by year for our sample. According to **Figure 2**, the emigration experience of the villages in our data set can be broadly divided into three phases. Between 1970 and 1978 emigration from our villages increased slightly. Starting in 1979, a dramatic increase in emigration can be observed, lasting until 1982. Within this period emigration decreased slightly in 1981, possibly a manifestation of the Camp David Accord and the resulting deterioration in the political relationship between Egypt and the other Arab countries (Kandil and Metwally, 1992). Since 1982 emigration from our villages decreases steadily, reaching a pre-1979 level in 1987. Following the three emigration periods identified in **Figure 2**, we defined three dummy variables to capture possible time effects on migration duration, i.e., those who emigrated between 1970 and 1978 who represent our reference group, those who emigrated between 1979 and 1982, and those who emigrated after 1982. Note however, that the estimated coefficients of these variables could be affected by the truncation of our sample described above. Finally, we interact the dummy variable indicating a contract worker with our network variable and the period of emigration dummies in order to study the interaction of the effects of expected earnings and uncertainty on migration duration.[4]

3. Econometric Model and Estimation Results

Our interest is in analyzing the determinants of duration abroad for Egyptian emigrants. Since Lancaster's (1979) seminal paper on the duration of unemployment, duration models have become a widely used econometric tool to analyze event histories.[5] Since the duration variable in our empirical analysis is discrete in nature, i.e., the number of years spent in a foreign country, we use a proportional hazard model for discrete duration data as proposed by Han and Hausman (1990). This model is semiparametric in the sense that the baseline hazard is nonparametric while the effect of the covariates takes a particular functional form. In essence, this model is an ordered logit model in which the threshold values are interpreted as the

[4] Interactions with the other variables are statistically insignificant.

[5] See Lancaster (1990), Kalbfleisch and Prentice (1980), and Kiefer (1988) for a survey of duration models.

logs of the baseline hazard.[6]

The results of the ordered logit are presented in column (2) of **Table 2**. Unfortunately, in the ordered logit model the estimated coefficients have no clear-cut interpretation for the event probabilities. Therefore, columns (3)-(6) of **Table 2** present the marginal effects of changes in the regressors on the probability of staying abroad another year.[7] These marginal effects are calculated at the sample means of the covariates using the estimated coefficients of the specification of column (1). The estimated hazard rates, reported at the bottom of **Table 2**, exhibit positive duration dependence. In other words, the longer emigrants are abroad, the more likely they are to return to Egypt. Referring to column (1) of **Table 2**, the estimated hazard rates show that the probability of returning within the first year is 6.2%. Conditional on staying abroad for at least two years this probability increases to 69.9% after two years.

Table 2 indicates that a large part of migration duration can be explained by the migrants' village of origin, the period they migrated, the oil price and the migration network.

The extent of the social and informational network of the migrant in the respective receiving countries decreases the length of staying abroad. This effect is illustrated in **Figure 3** for a representative individual[8], holding all other covariates at their sample means. The figure clearly shows that the first migrants to a particular country have a higher probability of staying there for a longer time. However, the probability of staying in the receiving country for less than one year sharply increases with the number of individuals from a village who have previously migrated to that particular receiving country. For example, if we compare the situation where no informational networks exist to a situation where 100 people from a village have previously migrated to a particular host country, the probability that a current migrant stays in the country

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[6] For details, see Han and Hausman (1990). For similar approaches, see Prentice and Gloeckler (1978), Moffitt (1985), and Meyer (1990). We use the implementation of this model available in the software package LIMDEP 7.0 (see Greene, 1995).

[7] See Greene (1993) for the exact formula used in calculating the marginal effects for the ordered logit model.

[8] This means an illiterate married non-contract migrant from Shanawan, who is the household head of a family with six members and who worked in Iraq as unskilled worker. The oil price in the year before this migrant returned was 56.55 Egypt £.

for less than one year increases from 2% to 13% and the probability of staying for two years conditional on staying at least for one year increases from to 18% to 48%. These results indicate that the income effect of a higher wage abroad dominates the substitution effect. Moreover, the negative effect of the migration network on migration duration is significantly lower for contract workers, indicating again that lower uncertainty increases migration duration. Note, however, that the combined effect of the network variable and the interaction between the network variable and the contract worker dummy is still negative and significant at a 5% significance level.

The estimated coefficients for the covariates show that there are significant differences in the migration duration of individuals from the different villages. In Abu Girg migrants stay significantly longer, while in Tambul el Kubra and the smallest village, Kafr Yussuf, significantly shorter periods abroad than in the other villages. In Abu Girg, for example, the probability that a migrant returns to his village within one year is about 68% smaller than in the reference village Shanawan. The probability of staying more than three years conditional on staying at least two years is about 17% higher in Abu Girg as compared with Shanawan. In Kafr Yussuf the probability of returning within one year is 14% higher and of returning in the second year conditional on staying at least one year is 44% higher than in Shanawan.

Migration duration is significantly affected neither by schooling level, by marital status nor by whether the migrant is the head of the household. Being employed as a skilled worker in the receiving country increases migration duration, but the estimated coefficient is only significant at a 10% level. According to the marginal effects the probability that a migrant stays less than a year abroad is 3.1% if he is employed as a skilled worker rather than as an unskilled worker. The probability of staying more than three years is 7.6% higher for skilled workers as compared with unskilled workers. If a higher occupational status abroad increases the earnings potential of migrants, these results indicate that the substitution effect of a higher expected wage rate abroad is larger than the income effect. Receiving more income abroad than expected does not have a significant impact on migration duration. Though this variable is insignificant, its positive coefficient indicates again that the substitution effect of a higher expected wage dominates the income effect. In contrast to our expectations, the size of the family shows a marginally significant negative effect on the time spend abroad. An additional household member increases the probability to return within

one year by 0.6% and decreases the probability of staying more than three years conditional on staying at least two years by 1.4%. As already expected from the discussion of the descriptive statistics, migrating to Saudi Arabia significantly increases the duration of staying abroad compared with migrating to Iraq and migrants to Libya stay shorter than those going to Iraq.

The oil price in the year before the migrant's return has a highly significant negative effect on the duration of staying abroad. A 1% increase in the oil price increases the probability of staying less than one year by 3.9%, whereas it decreases the probability of staying more than three years by about 9.8%. Interpreting the oil price as an indicator of the economic situation in the destination region, this result is consistent with the hypothesis that a higher oil price increases the wages of the migrants, who can then reach their migration goals in a shorter time. In terms of our theoretical model of section 2 this result means that in the case of an increasing expected wage abroad the income effect dominates the substitution effect. Note further that this effect is different from the one obtained for occupational status abroad. However, the effect of the oil price dominates the effect of the occupational status.

Contract workers stay significantly longer abroad than non-contract workers. Migrants who return due to the end of their contract abroad have a 7.1% lower probability of staying less than one year and a 17.5% higher probability of staying more than three years conditional on staying at least two years than migrants who returned due to other reasons. In terms of our theoretical model these results indicate that a lower uncertainty about the wage rate in the host country increases migration duration, i.e., the substitution effect dominates the income effect. The estimation results further show significant period effects. Over time migration duration decreases for both contract and non-contract workers; the decrease in migration duration is slightly stronger for contract workers. The probability of non-contract workers who migrated between 1979 and 1982 (after 1983) staying less than one year is 8.1% (21.1%) higher and staying more than three years (conditional on staying at least two years) is 20.2% (52.3%) lower than for migrants who emigrated before 1979. The respective numbers for contract workers are 11.3% (22.5%) and 28% (55.9%).

Note, that our sample is restricted to first migrants. We want to stress again, that our results have to be taken with care since our sample consists of only migrants who have already returned to their home-

country.

4. Summary

In the 1970s and 1980s Egypt experienced large-scale emigration to oil-rich countries, resulting in labor shortages and subsequent wage increases in specific Egyptian labor markets. A remarkable attribute of Egyptian emigration is its temporary nature. According to representative surveys, 59% of rural Egyptian migrants return within two years and 78% within three years. In this paper we analyze the duration of temporary migration, paying special attention to the role of social and informational migration networks. In an uncertain environment, these networks provide potential migrants with information about the labor market in the host country, increasing the expected wage rate abroad by increasing the probability of obtaining a better paid job.

Using a sample of return migrants from six different villages in Egypt we investigate the determinants of migration duration. The estimations were performed using a semiparametric proportional hazards model for discrete duration data. The estimation results imply that migration duration is positively related to the occupational status of the migrant. Egyptian migrants stay significantly longer in Saudi Arabia than in Libya, Iraq and Jordan. The oil-price in the year before a migrant's return, which we interpret as an indicator of the income possibilities in the host country, is negatively related to migration duration. The education of the migrant and whether or not he is a household head have no significant impact on migration duration. Contract workers, who should have less uncertainty about the wage in the host country, stay significantly longer than otherwise similar non-contract workers.

Social and informational networks may have an ambiguous effect on migration duration: we show that networks significantly shorten migration duration after controlling for migrants characteristics and the host country's economic situation. Our estimations imply that, if we compare the situation where no informational networks exist to a situation where 100 people from a village have previously migrated to a particular host country, the probability that a current migrant stays in the country for less than one year increases from 2% to 13%.

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Table 1: Descriptive Statistics by Migration Duration

			Duration in Years			
		Total	Less than 1	Between 1 and 2	Between 2 and 3	More than 3
Village (%):	Shanawan	30.2	14.6	36.9	28.3	35.1
	Kafr Shanawan	4.8	4.5	2.1	2.7	9.7
	Abu Girg	19.1	12.4	8.5	18.6	35.1
	Bani Wallims	16.1	12.4	17.7	26.5	8.2
	Tambul el Kubra	16.8	19.1	23.4	16.8	8.2
	Kafr Yussuf	13.0	37.1	11.3	7.1	3.7
Education (%):	Illiterate	40.7	52.8	41.8	42.5	29.9
	Literate	59.3	47.2	58.2	57.5	70.1
Occupation Abroad (%):	Unskilled Worker	71.7	83.2	76.6	75.2	56.0
	Skilled Worker	21.8	10.1	17.7	17.7	37.3
	Other	6.5	6.7	5.7	7.1	6.7
Married (in %)		91.0	95.5	86.5	87.6	95.5
Household Head (in %)		82.6	79.8	80.9	83.2	85.8
Family Members		5.50	6.06	5.29	5.30	5.40
		(2.17)	(2.23)	(2.26)	(2.07)	(2.17)
Host countries (%):	Iraq	59.3	74.2	70.9	63.7	33.6
	Saudi Arabia	29.6	15.7	19.9	27.4	50.7
	Jordan	4.2	6.7	4.3	2.7	3.7
	Libya	5.9	2.2	5.0	6.2	9.0
Oil price (in Egypt £)		56.44	62.38	55.59	56.13	53.67
		(28.67)	(27.29)	(30.09)	(26.22)	(29.76)
Expected less Income (in %)		11.1	5.6	9.9	13.3	14.2
Network		85.49	97.83	98.18	85.51	63.93
		(86.84)	(95.63)	(84.43)	(89.90)	(76.75)
Migrated before 1978 (in %)		9.2	1.1	5.0	5.3	22.4
Migrated between 1979 and 1982 (in %)		51.2	29.2	44.0	55.8	69.4
Migrated after 1982 (in %)		39.6	69.7	51.1	38.9	8.2
Contract Worker (in %)		27.9	22.5	22.0	26.5	38.8
Duration in Years		1.97	-	-	-	-
		(1.83)				
Observations		477	89	141	113	134

Source: Village Household Survey, Migrant sub-sample (N=477 return migrants for whom we have individual level data).

Table 2: Estimation Results from Ordered Logit Model (Dependent Variable: Years Spend Abroad)

Variables	Estimated Coefficients	Marginal Effects			
		Less than 1 year	Between 1 and 2 years	Between 2 and 3 years	More than 3 years
Kafr Shanawan	-1.027†† (0.496)	0.060	0.189	-0.100	-0.149
Abu Girg	1.161†† (0.363)	-0.679	-0.214	0.113	0.169
Bani Wallims	0.290 (0.357)	-0.017	-0.053	0.028	0.042
Tambul el Kubra	-0.761†† (0.352)	0.045	0.140	-0.074	-0.111
Kafr Yussuf	-2.385†† (0.409)	0.140	0.439	-0.232	-0.347
Illiterate	-0.167 (0.226)	0.010	0.031	-0.016	-0.024
Skilled Worker	0.522† (0.278)	-0.031	-0.096	0.051	0.076
Other Occupation	0.562 (0.440)	-0.033	-0.103	0.055	0.082
Married	0.252 (0.454)	-0.015	-0.046	0.025	0.037
Household Head	-0.454 (0.380)	0.027	0.084	-0.044	-0.066
Family Members	-0.099† (0.057)	0.006	0.018	-0.010	-0.014
Expected less Income	0.675 (0.440)	-0.040	-0.124	0.066	0.098
Saudi Arabia	1.249†† (0.331)	-0.073	-0.230	0.121	0.182
Jordan	-0.747 (0.550)	0.044	0.138	-0.073	-0.109
Libya	-0.760† (0.430)	0.044	0.140	-0.074	-0.110

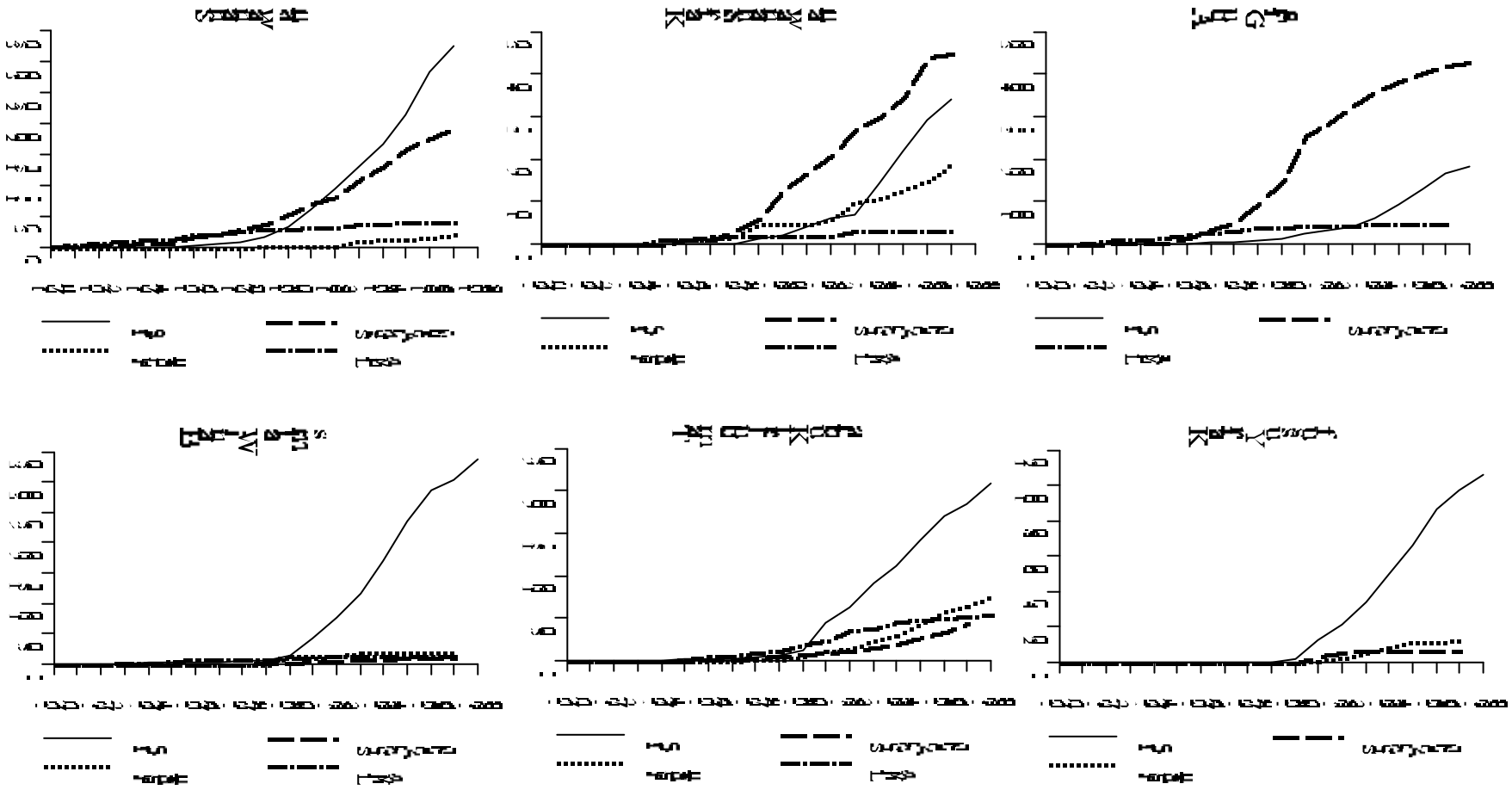
Table 2 continues on the next page.

Table 2: continued

Variables	Estimated Coefficients	Marginal Effects			
		Less than 1 year	Between 1 and 2 years	Between 2 and 3 years	More than 3 years
Oil price $*10^{-1}$	-0.674†† (0.048)	0.039	0.124	-0.066	-0.098
Contract Worker	1.206†† (0.532)	-0.071	-0.222	0.117	0.175
Emigrated between 1979 and 1982	-1.387†† (0.434)	0.081	0.255	-0.135	-0.202
Emigrated after 1983	-3.598†† (0.545)	0.211	0.662	-0.350	-0.523
Emigrated between 1979 and 1982 * Contract Worker	-1.923†† (0.669)	0.113	0.354	-0.187	-0.280
Emigrated after 1983 * Contract Worker	-3.848†† (0.784)	0.225	0.708	-0.374	-0.559
Network$*10^{-1}$	-0.182†† (0.024)	0.011	0.034	-0.018	-0.027
Network * Contract Worker$*10^{-1}$	0.120†† (0.028)	-0.007	-0.022	0.012	0.017
Constant	10.601†† (0.836)	-	-	-	-
μ_1	2.359†† (0.188)	-	-	-	-
μ_2	4.251†† (0.247)	-	-	-	-
h (t < 1)	0.062	-	-	-	-
h (1 < t < 2)	0.374	-	-	-	-
h (2 < t < 3)	0.699	-	-	-	-
Log-Likelihood	-464.00	-	-	-	-
χ^2	380.27	-	-	-	-

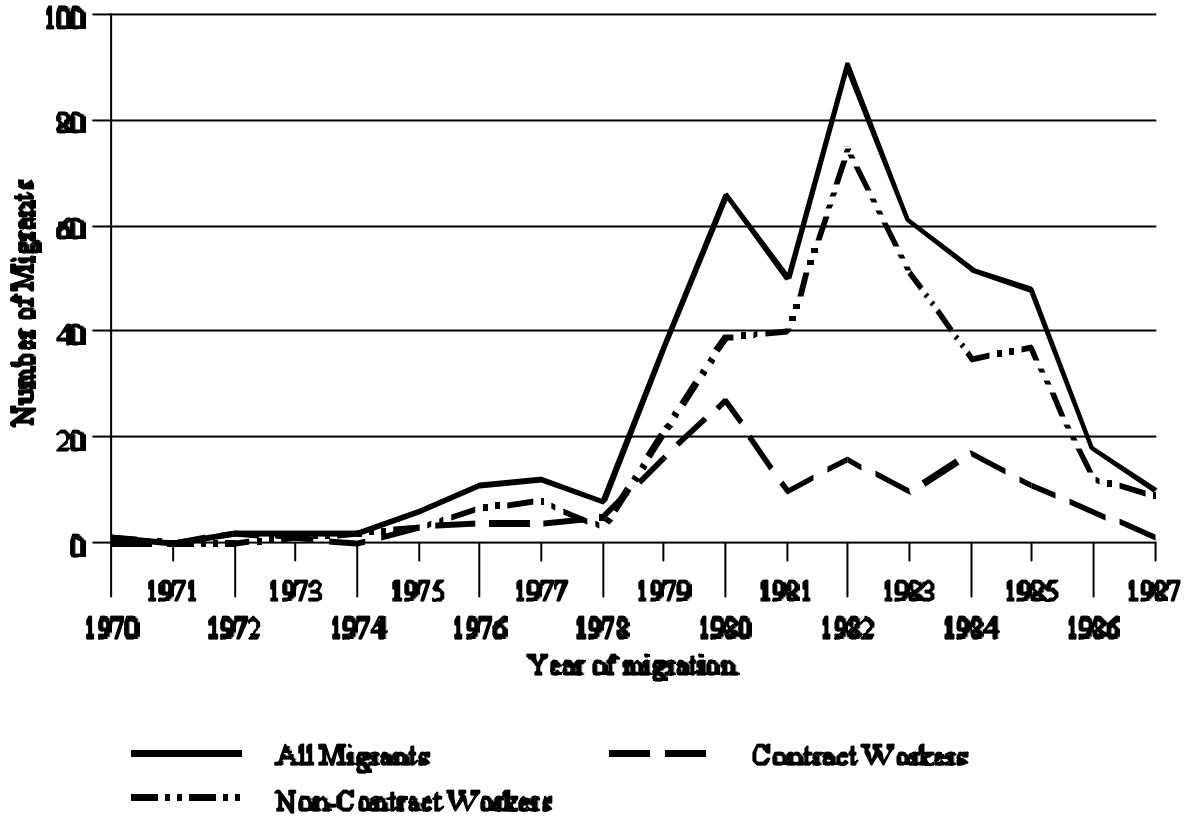
Note: Standard errors in parentheses. Number of Observations: 477. †: statistically significant at least at the 10%-level. ††: statistically significant at least at the 5%-level. Reference Group: Literate, unskilled workers from Shanawan going to Iraq, not married, not household head, expected less or the same income as received, migrated before 1980. The marginal effects are calculated at the sample means of the covariates using the estimated coefficients of column (4) from Table 2.

Figure 1: The Development of Migration Networks in Egyptian Villages



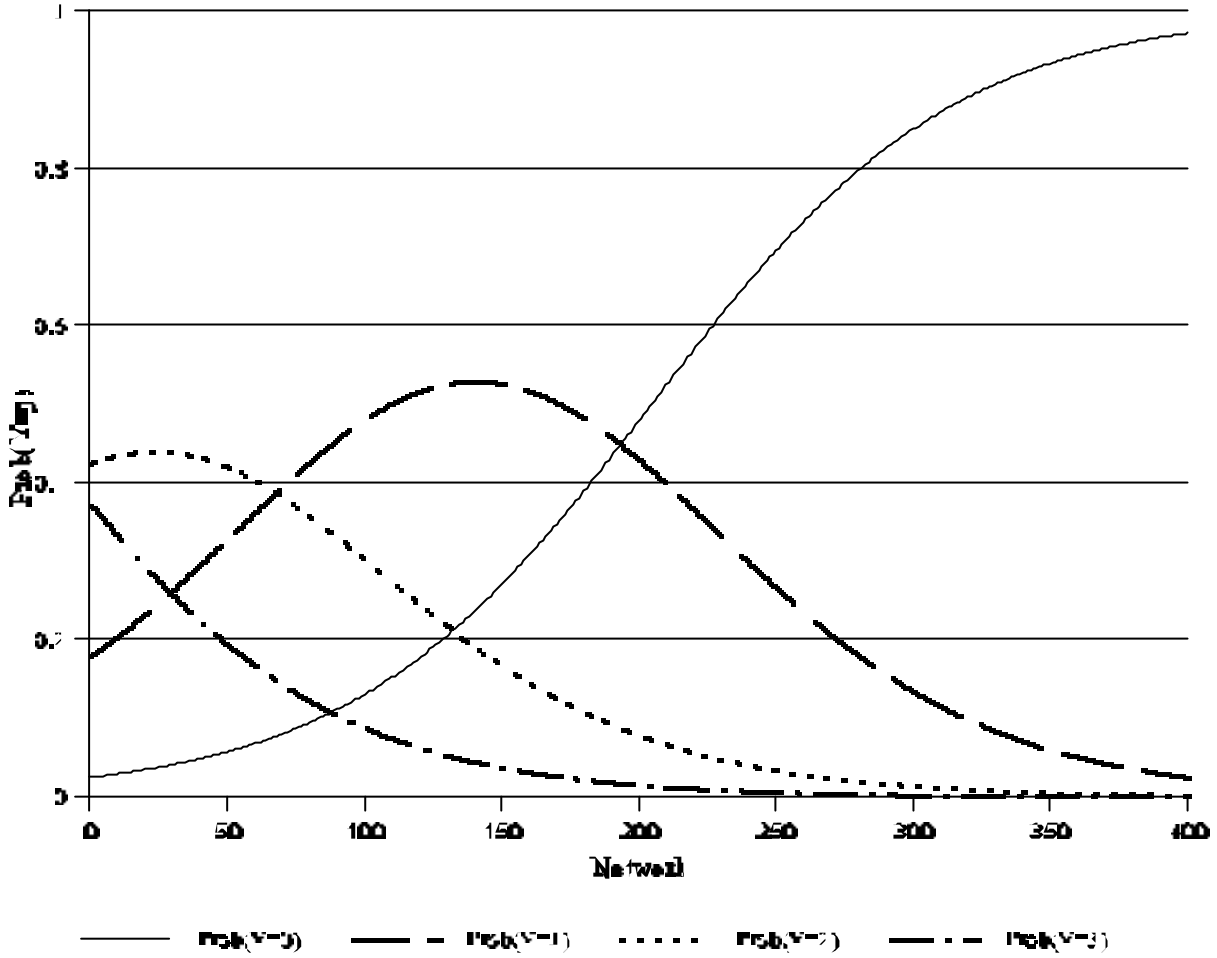
Source: Village Household Survey, Household sub-sample (N=8,620 households, N=2,483 migrants in households), own calculations.

Figure 2: Year of Migration



Source: Village Household Survey, Migrant sub-sample (N=474 return migrants for whom we have individual data).

Figure 3: Migration Networks and Migration Duration



Note: The probabilities are calculated at the sample means of all covariates (except the network variable) using the estimated coefficients from column (4) in Table 2. The reference person is an illiterate married non-contract migrant from Shanawan, who is the household head of a family with six members and who worked in Iraq as unskilled worker. The oil price in the year before this migrant returned was 56.55 Egypt £.