

# **Family Migration Decisions: Evidence from Rural China**

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**February 2, 2007**

## **Abstract**

In the past two decades, China's labor market experienced dramatic growth in rural-to-urban migration and nonagricultural employment has brought about a significant improvement on the standard of living to rural migrants. While labor migration has been the subject of considerable attention, much of the literature focuses on individual migration and studies on family migration are scarce. This paper examines the determination of family migration and explores the gender implications of the patterns of migration using data derived from the China Health and Nutrition Survey for the period from 1997 to 2004.

The data reveal that the incidence of family migration (defined as both spouses migrating together) and one spouse migrating alone are both on a steady increase and that when only one spouse migrates, it is often the wife who is left behind. Using multivariate regression analysis, we investigate the underlying determinants of the cases that husband and wife migrate together and that wife migrates alone. The results show that of all the households which have at least one spouse migrates, the probability of both spouses migrating together increases in wife's education attainment and decreases in husband's age and is negatively correlated with the presence of young children. We also find that of all the households which have only one spouse migrates, the probability that the wife migrates is positively correlated with wife's education and male elderly health status and negatively with the presence of young children. These results suggest that gender inequality in domestic responsibilities is an important factor that contributes to the gendered patterns of migration.

**Key Words:** Migration    Family decision

## **I. Introduction**

During the 1990s, China's labor market experienced dramatic growth in the volume of rural migrants moving to urban areas for the employments. Estimates using the one percent sample from the 1990 and 2000 rounds of the Population Census and the 1995 one percent population survey show that the inter-county migrant population grew from just over 20 million in 1990 to 45 million in 1995 and 79 million by 2000 (Liang and Ma, 2004). Moreover, surveys conducted by the National Bureau of statistics (NBS) and the Ministry of Agriculture include more detailed retrospective information on past short-term migration, and suggest even higher levels of labor migration than those reported in the census (Cai, Park and Zhao, 2006). Although the above data differ in statistical caliber, scope, methodology and attendant results, they all reflected on fact that the migrant labor force from rural areas is enormous and increasing significantly every year.

Considerable researches on labor migration in rural China have been carried out. For example, using household survey data conducted in six provinces of China in 1999 by the Ministry of Agriculture, Zhao Yaohui(2001) investigates determinants of labor migration, paying special attention to the role of migrant networks. Migration of female labor force is also the subject of many scholars' researches, such as Tan Shen (1997) . Family migration, however, has been studied by very limited number of researches. Using survey on migrant workers in Jinan, Cai Fang(1997) analyzed the role of family and the gender characteristics in migration decision and found family decision played a critical role in individual migration. The author, however, did not take into the consideration of possibility that both spouses might migrate simultaneously.

Compared to their female counterparts, male labor force is more prone to migrate, but female migrant workers account for remarkable percentage of the total migrant labor force. Some studies have revealed that 28.0% of male labor force and 15.4% of female labor force are migrants or ex-migrants (Bai Nansheng and He Yupeng, 2003). So when considering the migration of rural labor force in terms of family, we will find many families that both spouses work as migrants simultaneously.

This paper discusses the impact of family decision on migration of rural labor force. The following three topics will be then presented for discussion and study.

- 1) Of all households, does any of the spouse migrate?
- 2) Of all households that have at least one spouse migrating, do husbands and wives migrate

simultaneously?

3) Of all households that have only one spouse migrating, who does?

The paper is organized as follows. Section II describes the measurement of key variables and the description of the data; Section III presents the results obtained; Section IV draws the conclusions and discusses implications of the study.

## **II .Key Variables and Data Description**

The data from the China Health and Nutrition Survey (CHNS) are used for this study. The CHNS was first made in 1989. The multi-stage, random cluster approach was used to draw the sample. The CHNS is a longitudinal survey that covers urban and rural areas of nine provinces that vary substantially in geography, economic development and public resources. There are six waves of the survey (1989, 1991, 1993, 1997, 2000 and 2004). The CHNS ask respondents if the family member is still in the home in the current round of the survey, if the response is “yes”, the family member is defined as a non-migrant worker, and if the response is “sought employment else where”, the family member is defined as a migrant worker.

We use the CHNS from the three waves spanning 1997 to 2004 and the sample is confined to rural families,<sup>1</sup> including 2226 households in 1997, 2418 households in 2000 and 2298 households in 2004. On the hypothesis that the presence of dependent children and children’s age are the important determinant of migration, the children’s age is stratified into various levels, and the dummy variables are adopted.

The CHNS data contains observations on different measures of health status. This is particularly valuable for the task of studying the effects of the elderly on the migration of adult children. With the aging population, the reduced likelihood of co-residence and the improved living standard in rural areas, the well-being of the elderly in rural China has draw more and more attention. On one hand, under the influences of the traditional ethics, the majority of the elderly people are cared by their own families. Therefore, an adult child who cares about the well-being of his (her) parent will be less likely to participate in the migrant labor market. John Giles and Ren Mu(2006) have studied how participation in migrant labor markets is affected by elder parent health. They find that younger adults are less likely to work as migrants when a parent is ill. On the other hand, with the industrialization

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<sup>1</sup> Single parent families were excluded from this study.

and urbanization, the migration of labor force from rural areas to urban areas is inevitable, which has weakened the support to the elderly to some extent and has given rise to the conflicts between the values of market- economy and the traditional family support and ethics. More and more adults do not co-reside with their parents and it has been much weakened to support the elderly in the rural families on the basis of the traditional ethics. For example, Benjamin, Brandt and Rozelle (2000) note that in Northern China over 85 percent of elderly lived in extended households in 1935, but that this figure had dropped to just over 60 percent by 1995. The CHNS also shows that 70 percent of rural elderly lived with an adult child in 1991, but by 2000 this share had fallen to 60 percent ( John Giles and Ren Mu,2006).

In order to show the potential effect of the health of the elderly<sup>2</sup> on the migration of their married children, we use self-report health status (SRHS) variables in this paper. The CHNS question on self-report health status which asks respondents to rate their health relative to other people their age and the responses are coded on a scale of one (excellent), two(good), three(fair) and four (poor).<sup>3</sup> We make a gender division and transform the SRHS of all elderly into four discrete indicator, poor health for the male elderly, good health for the male elderly, poor health for the female elderly, good health for the female elderly.

Table 1 presents some statistic description on the migrant families (MFs, a family is defined as a migrant family if any of the spouse in the family migrated) and the non-migrant families (NMFs). It is shown in Table 1 that the total rural migrant families have annually increased. The percentage of migrant families of all households is 5% in 1997, 8.4% in 2000, and 15% in 2004. The mean age of both husbands and wives in the MFs is much younger than that of their counterparts in the NMFs. This shows that most of migrants are the young or the middle-aged. In fact, most employers have made their requirements for the employment ages, which have limited the migration of the people above the middle ages.

The average years of schooling of husbands is extensively longer than that of their wives; The years of schooling of husbands and wives in the MFs are longer than that of their counterparts in the NMFs. The difference in years of schooling between the husbands and the wives in the MFs is not as

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<sup>2</sup> People of 65 and above are defined to be the elderly.

<sup>3</sup> We may also use BMI indices, that is, the ratio between the body weight and the body height. Costa(1996) shows a plot of the relationship between BMI and self-reported health in her historical study of older male labor force participation.

big as the difference in years of schooling between their counterparts in the NMFs.

The land per labor in a migrant family is far less than that in a non-migrant family, which is one of the determinants of migration. The ratio of MFs without children is higher than that of NMFs without children. In 1997, families without children account for 14% and 11.3% in the MFs and NMFs, respectively. Yet in 2004, the same percentage increased to 47% and 31%, respectively. In addition, the number of children per migrant family is fewer than that per non-migrant family. We have made a gender division of the elderly in the study but the difference between two groups is insignificant.

Let's place our study only on the migrant families. Table 2 divides the migrant families into those of husband-wife migrating simultaneously (HWM families called hereafter) and those of only one spouse migrating (OM families called hereafter). It is noted that HWM families have annually increased. Of all the migrant families, HWM families accounted for 18.4% in 1997, 22.6% in 2000 and 23.1% in 2004. The husbands and wives in the HWM families are younger than their counterparts in the OM families. In 2004, the average ages of the husbands and wives in the HWM families were 32.81 and 33.56 years old, respectively; and those of the husbands and wives in the OM families were 39.19 and 40.83 years old, respectively. The education level of either husbands or wives in the HWM families is far higher than that of their counterparts in the OM families. In addition, the difference in education level between the husbands and the wives in the HWM families is smaller than the difference in education between their counterparts in the OM families. On the other hand, the education level of husbands or wives in the HWM families has annually decreased, which indicated more and more husbands and wives from families of low education level worked as migrants, simultaneously.

Compared with farmland per labor in the OM family, farmland per labor in the HWM family is smaller. Of the HWM families, the percentage of those without children is very high and the percentage is 19% in 1997, 34% in 2000, and 94% in 2004, respectively. But of the OM families, the percentage of those without children is much smaller and the percentage is 13% in 1997, 12% in 2000 and 35% in 2004. In addition, the number of children per HWM family is obviously smaller than that per OM family. It hasn't been found in the statistic description that there is any obvious difference between the health of the elderly in the HWM families and that in the OM families.

Table 3 discusses whether husband or wife migrates in an OM family. It is noted in the table that husband is usually chosen to migrate if only one spouse is allowed to. There two reasons behind such phenomenon. First, the income of a male migrant is usually higher than that of a female migrant (Cai Fang,1997). If merely one spouse is allowed to migrate, the husband is usually chosen to migrate for the maximum benefits of the family. Second, the Chinese tradition of husband working and wife house-keeping is a common practice in the rural families. In addition, females are expected to be responsible for child-bearing, children's education and housework.

The age difference in spouses in a OM family where the wife is selected to migrate (WM) is smaller than that in an OM family where the husband is selected to migrate (HM). But the education level of the wives in the WM families is slightly higher than that of their counterparts in the HM families. In addition, of the WM families, the percentage of the families without children is very high. In 2004, such percentage was up to nearly 100%. This shows that females would have little possibility to migrate alone if they have children.

### **III. Empirical results**

We set linear probability models to answer above three questions. Variables used to explain the migration behavior include: personal characteristics (ages of husband and wife, education of husband and wife), household characteristics (land per labor, age of children of the family and health status of the elderly). We use discrete schooling and continuous schooling as explanatory variables in models, respectively. Of variables of the health of the elderly, we made a gender division. The age range used in this study is 16 - 64 years old. See Tables 4, 5, 6 for the regression results.

Table 4 analyzes of all households, if any of the spouse migrate. In general, regression results are as expected. It is noted that age coefficients are negative. Given other things, the likelihood that a family participates in migration (here means at least one spouse in the family working as migrants) would decrease by 0.5 percentage points when the wife is one year older. The average percentage of migrant families of all the households is about 10 percent in our sample, so these effects are large in magnitude. The coefficient before husband age is insignificant but negative. In fact, as shown in existing studies such as Zhao Yaohui(2001), age variable is found to have significant and negative effect on migration.

We now turn to the education variable. Education variable is insignificant whether we use

discrete schooling or continuous schooling as explanatory variables in the model. With the senior high school being the reference group, the coefficient of husband with junior high school is positive and significant at 5% level, but all other categories of education are statistically insignificant (regression not shown here). The above conclusion correlates with the viewpoint that that junior high school education is most effective in promoting labor migration (Zhao Yao Hui 2001).

Among variables of household characteristics, the farmland per labor is statistically significant. The probability of a family participating in migration would decrease by 0.4% when the farmland per labor in a family increases by one mu<sup>4</sup>. The increase of the farmland would require more rural labors for farming so as to reduce the probability of migration of the rural families.

All Children age dummies are negative and statistically significant. This shows that children's age has a significant impact on the migration of their parents. The younger the child is, the less likely the family participates in the migration. Given other things, compared with a family without children, the probability of migration for families with a child of 0~4 years, 5-6 years, would be reduced by 10.7%, 3.3%, respectively.

The gender of the rural elderly has different magnitude in affecting their adult children's family migration decisions, but such affection is not statistically significant. If we do not make a gender division to regress, the elderly health variable is insignificant too (regression not shown here). This is somewhat different from what John Giles and Ren Mu (2006) found using CHNS data. There, they found younger adults are less likely to work as migrants when a parent is ill.

Table 5 analyzes of all households that have at least one spouse migrating, do husbands and wives migrate simultaneously? Of all the variables, the coefficients before children age dummies (absolute values) are very large. This shows that the presence of dependent children and children's age are of critical importance to husbands and wives migrating simultaneously. It is found in Table 4 that children hinder their parents participating in the migration, and with the increase of the children age, such effect would be greatly reduced; and it is also found in Table 5 that children would hinder their parents from working as migrants simultaneously but the difference between the impacts of children in different age ranges on the migration is small. In all the rural migrant families, compared with a family without children, the probability of husbands and wives migrating simultaneously with a child of 0-4

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<sup>4</sup> Mu is a Chinese unit of farmland, less than an acre.

years, 5-6 years, would reduced by 21.4% and 26.3%, respectively. With the increase of the ages of the children, the impact of children's age still would be large although it may gradually become less and less.

The age variable of husband is negative and statistically significant, but age variable of wife is not statistically significant. One possible reason is that the age of wife is positively related to that of her children. Variable of continuous schooling of wives is positive and statistically significant at 10% level, and this shows that higher education level of wives contributed to both husbands and wives working as migrants. If wife with primary-school education is taken for the base (regression not shown here), it is noted that all other categories of education are statistically significant (except for wife illiterate). The education level of wife higher, the larger probability of husband and wife migrating simultaneously is. But we did not find that education level of husband has significant impact on husband and wife migrating simultaneously.

Husbands and wives from less land endowments are more likely to participate in labor migration simultaneously. If farmland per rural labor increases by one mu, the probability of husbands and wives participating in the migration simultaneously would decrease by 1.2%. Compared to a family without the male elderly, the good health of the male elderly would have positive impact on HWM, but such impact is not statistically significant. However, looking more carefully, we see that the difference between the impacts of the male elderly in good health and in poor health is quite large. Using poor health as base (regression not shown here), the male elderly health variable is statistically significant at 10%. The regression shows that given other things, compared with a family with a male elderly in poor health, the probability of wife and husband migrating simultaneously with a male elderly in good health and without the elderly, would be increased by 15.2% and 30%, respectively. On other hand, the health of the female elderly is found to be unrelated to HWM.

Table 6 discusses in case of only one spouse would migrate (OM families), who does? The regression shows that the older the wife is, the less likely she would migrate alone, but the situation for the husband is just the opposite. This shows that the age of a married female is an important factor for her migration. The higher education level the wife acquires, the more opportunities she will migrate alone. Given other things, the probability of working as migrants alone for the married females with senior high school education would be 18.8% higher than that for the illiterate married females.



The presence of dependent children's age have an essential impact on determining if a married female migrating alone. In addition, such impact would vary with the variation of children's age. Given other things, of all households that has only one spouse migrating, compared with families without children, the probability of wife migrating with the children of 0~4 years and 4-5 years would be reduced by 18% , 19.7%, respectively, and such impact will reduce gradually with the increase in the children's age.

If the elderly in a family were in good health, the wife would have more opportunities to migrate; and vice versa. Such consequence is conformable to what we expect, but the elderly health variable is not statistically significant.

#### **IV. Summery and Conclusion**

With the pooled CHNS data of 1997, 2000 and 2004, this paper discusses the impact of family decision on migration of rural labor force in terms of family and focus on three topics:

(1) Of all households, considering at least one spouse in the family working as migrants, it is revealed that the presence of dependent children and their age are the primary factors in determining if at least one spouse in the family works as a migrant; dependent children hinder the migration and their age has different magnitude. The health status of the elderly in the families has insignificant impact on the migration.

(2) Children would hinder both husbands and wives from working as migrants simultaneously, and the difference between the impacts of children in different age ranges on the migration is small. The poor health of the male elderly greatly reduces the probability of both spouse working as migrants but the health of the female elderly is found to be unrelated to both spouses in the families working as migrants

(3) When considering the employment migratory pattern of one spouse, the presence of dependent children reduces the probability of migration of the wife. The older the wife is, the less likely she would migrate alone, but the situation for the husband is just the opposite. The higher education level the wife acquires, the more opportunities she will migrate alone.

In conclusion, we find the presence of dependent children and children's age are the important factors in determining family migration. Having children reduces the probability that husbands and wives will participate in the migrant labor market and the impact of children would vary with their

growth. The health of the elderly has insignificant impact on a migrant family but the poor health of the male elderly in a family would greatly reduce the probability of husbands and wives migrating simultaneously. This shows that the adherence to the traditional practice of caring for the elderly is on the decrease, however under the influence of conventional ethics, families in rural areas still take main responsibilities for the elderly people. Why only the health status of the male elderly rather than the health status of the female elderly has impact on such decision is remain to be clarified.

Our results may have important policy implications for the development of social safety nets in rural China. With the migration of labor force from rural areas to urban areas, the increased social competition pressure and the declining ethics, the rural families function of caring for the elderly would be weakened significantly. In such a context, a suitable system to insure the well-being's of the elderly in rural China is very much needed.

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Table 1. Characteristics of non-migrant families and migrant families.

	non-migrant families			Migrant families		
	1997	2000	2004	1997	2000	2004
Number	2112	2214	1954	114	204	344
Age of wife	40.29	41.6	43.63	35.11	35.9	38.1
Age of husband	41.78	43.12	44.99	36.59	37.07	39.56
Schooling years of wife	4.98	5.62	5.59	6.39	6.04	6.09
Schooling years of husband	7.02	7.38	7.45	7.59	7.88	7.88
Illiterate wife (%)	24.20	18.65	21.14	10.53	12.25	10.76
Wife with primary school education (%)	0.41	39.79	45.09	35.09	39.71	37.50
Wife with junior high school education (%)	0.29	33.60	38.08	42.11	35.29	37.79
Wife with senior high school education (%)	0.05	6.59	7.47	8.77	5.88	4.36
Wife with technical school education or above (%)	0.00	0.68	0.77	0.00	0.98	0.87
Illiterate husband (%)	0.07	3.93	4.45	2.63	0.98	1.45
Husband with primary school education (%)	0.36	35.23	39.92	31.58	27.94	25.29
Husband with junior high school education (%)	0.43	46.43	52.61	53.51	53.43	52.62
Husband with senior high school education (%)	0.12	11.97	13.56	9.65	9.31	8.72
Husband with technical school education or above (%)	0.02	1.81	2.05	0.00	2.45	2.33
# Laborers (persons)	3.5	3.44	4.16	3.74	3.55	3.94
Land per labor(mu)	2.57	2.63	2.18	1.46	1.9	1.31
Without children (%)	11.32	16.76	30.96	14.04	16.67	47.38
Child 0-4 years (%)	13.78	10.84	10.70	14.91	17.16	8.43
Child 5-6 years (%)	7.86	5.51	5.42	14.91	5.39	4.36
Child 7-12 years (%)	34.38	26.38	17.71	33.33	31.37	15.99
Child 13-15 years (%)	18.99	21.86	16.07	21.05	20.10	13.66
Number of children	1.86	1.75	1.84	1.76	1.67	1.71
Without the elderly (%)	88.12	91.87	90.94	85.09	88.24	83.43
Male elderly in poor health (%)	2.32	2.21	2.51	1.75	1.47	5.81
Male elderly in good health (%)	2.79	1.58	1.54	5.26	1.96	2.03
Female elderly in poor health (%)	3.74	4.07	5.27	5.26	3.43	6.69
Female elderly in good health (%)	4.59	1.72	1.79	4.39	1.47	2.91

Table 2.

	Wife and husband migrating simultaneously			Only one spouse migrating		
	1997	2000	2004	1997	2000	2004
Number	21	44	78	93	151	259
Age of wife	26.81	29.18	32.81	36.99	37.44	39.19
Age of husband	26.95	30.66	33.56	38.76	38.98	40.83
Schooling years of wife	8.15	7.52	6.88	6	5.69	6
Schooling years of husband	8.43	8.47	7.96	7.39	7.83	7.93
Illiterate wife	4.76	4.55	3.85	11.83	15.23	13.13
Wife with primary school education	9.52	29.55	34.62	40.86	45.03	39.38
Wife with junior high school education	71.43	50.00	42.31	35.48	33.11	37.45
Wife with senior high school education	9.52	6.82	2.56	8.60	5.96	5.02
Wife with technical school education or above	0.00	4.55	2.56	0.00	0.00	0.39
Illiterate husband	0.00	0.00	0.00	3.23	1.32	1.93
Husband with primary school education	14.29	20.45	30.77	35.48	31.79	24.32
Husband with junior high school education	76.19	68.18	56.41	48.39	52.32	52.90
Husband with senior high school education	9.52	4.55	5.13	9.68	11.26	10.04
Husband with technical school education or above	0.00	4.55	5.13	0.00	1.99	1.54
# Laborers (persons)	4.76	4.41	4.1	3.5	3.3	3.89
Land per labor(mu)	1.01	1.16	1.26	1.59	2.08	1.33
Without children	19.05	34.09	93.59	12.90	12.58	34.75
Child 0-4 years	42.86	27.27	0.00	8.60	15.23	11.20
Child 5-6 years	23.81	2.27	1.28	12.90	6.62	5.41
Child 7-12 years	14.29	27.27	2.56	37.63	34.44	20.46
Child 13-15 years	4.76	11.36	2.56	24.73	15.23	17.37
Number of children	1.24	1.55	1.2	1.86	1.7	1.72
Without the elderly	80.95	93.18	71.79	86.02	92.05	89.19
Male elderly in poor health	0.00	2.27	8.97	2.15	1.32	5.02
Male elderly in good health	4.76	0.00	3.85	5.38	2.65	1.54
Female elderly in poor health	14.29	6.82	14.10	3.23	2.65	4.63
Female elderly in good health	0.00	0.00	6.41	5.38	1.99	1.93

Table 3

	Only wife migrating			Only husband migrating		
	1997	2000	2004	1997	2000	2004
Number	13	19	56	80	132	203
Age of wife	33.23	39.26	36.09	37.6	37.18	40.04
Age of husband	37.46	41.32	39.46	38.98	38.64	41.2
Schooling years of wife	5.73	6.42	6.43	6.04	5.58	5.9
Schooling years of husband	7.23	7.32	8.09	7.42	7.91	7.88
Illiterate wife (%)	7.69	10.53	5.36	12.50	15.91	15.27
Wife with primary school education (%)	53.85	47.37	39.29	38.75	44.70	39.41
Wife with junior high school education (%)	15.38	26.32	28.57	38.75	34.09	39.90
Wife with senior high school education (%)	7.69	15.79	5.36	8.75	4.55	4.93
Wife with technical school education or above (%)	0.00	0.00	0.00	0.00	0.00	0.49
Illiterate husband (%)	7.69	0.00	1.79	2.50	1.52	1.97
Husband with primary school education (%)	30.77	42.11	25.00	36.25	30.30	24.14
Husband with junior high school education (%)	46.15	42.11	57.14	48.75	53.79	51.72
Husband with senior high school education (%)	15.38	15.79	12.50	8.75	10.61	9.36
Husband with technical school education or above (%)	0.00	0.00	3.57	0.00	2.27	0.99
# Laborers (persons)	3.61	3.05	3.77	3.48	3.33	3.93
Land per labor(mu)	1.49	1.86	1.08	1.6	2.11	1.39
Without children (%)	15.38	5.26	98.21	12.50	13.64	17.24
Child 0-4 years (%)	23.08	10.53	0.00	6.25	15.91	14.29
Child 5-6 years (%)	15.38	0.00	0.00	12.50	7.58	6.90
Child 7-12 years (%)	30.77	42.11	1.79	38.75	31.06	25.62
Child 13-15 years (%)	0.00	47.37	0.00	28.75	20.45	22.17
Without the elderly (%)	69.23	89.47	87.50	96.25	92.42	89.66
Male elderly in poor health (%)	7.69	0.00	5.36	1.25	1.52	4.93
Male elderly in good health (%)	23.08	5.26	0.00	2.50	2.27	1.97
Female elderly in poor health (%)	0.00	0.00	7.14	3.75	3.03	3.94
Female elderly in good health (%)	7.69	5.26	3.57	5.00	1.52	1.48

Table 4

Of all households, does any of the spouse migrate?

(Dependent variable: either husband or wife migrate or both do =1, none migrates=0)

Variables	Coefficient	Standard error	Coefficient	Standard error	
Age of wife	-0.005***	0.001	-0.005 ***	0.001	
Age of husband	-0.001	0.001	-0.001	0.001	
Schooling years of wife			-0.001	0.001	
Wife with primary school education	0.000	0.011			Reference: Illiterate wife
Wife with junior high school education	-0.006	0.013			
Wife with senior high school education	0.004	0.021			
Wife with technical school education or above	-0.071	0.074			
Schooling years of husband			0.001	0.001	
Husband with primary school education	0.002	0.019			Reference: Illiterate husband
Husband with junior high school education	0.009	0.020			
Husband with senior high school education	-0.018	0.022			
Husband with technical school education or above	0.024	0.038			
Land per labor(mu)	-0.004***	0.001	-0.005***	0.001	
Child 0-4 years	-0.107***	0.015	-0.107***	0.015	
Child 5-6 years	-0.033**	0.016	-0.033**	0.016	
Child 7-12 years	-0.038***	0.010	-0.039***	0.010	Reference: without children
Child 13-15 years	-0.016*	0.010	-0.017*	0.010	
Male elderly in poor health	0.009	0.026	0.008	0.026	
Male elderly in good health	-0.003	0.029	-0.004	0.029	Reference: without the elderly
Female elderly in poor health	-0.010	0.021	-0.012	0.021	
Female elderly in good health	0.013	0.024	0.014	0.024	
Year 2000	0.039***	0.010	0.040***	0.010	
Year 2004	0.089***	0.010	0.089***	0.010	Reference: year 1997
Intercept	0.347***	0.034	0.348	0.031	
N	5025		5025		
N=1	646		646		
Adjust R <sup>2</sup>	0.05		0.05		

Note: \*, \*\*, \*\*\*: Coefficient different from zero at 10, 5, 1 percent significance levels, respectively.

Table 5

Of all households that have at least one spouse migrating, do husbands and wives migrate together?  
 (Dependent variable: husband and wife migrate simultaneously=1, only one spouse migrates =0)

Variables	Coefficient	Standard error	Coefficient	Standard error	
Age of wife	0.004	0.0042	0.003	0.004	
Age of husband	-0.021***	0.0040	-0.020***	0.004	
Schooling years of wife			0.009*	0.005	
Wife with primary school education	-0.057	0.0513			Reference: Illiterate wife
Wife with junior high school education	0.047	0.0549			
Wife with senior high school education	0.067	0.0855			
Wife with technical school education or above	0.692*	0.3572			
Schooling years of husband			-0.008	0.007	
Husband with primary school education	0.003	0.1121			Reference: Illiterate
Husband with junior high school education	-0.020	0.1124			
Husband with senior high school education	-0.097	0.1241			
Husband with technical school education or above	-0.029	0.1691			
Land per labor(mu)	-0.012**	0.0058	-0.010*	0.006	
Child 0-4 years	-0.214***	0.0558	-0.195***	0.055	
Child 5-6 years	-0.263***	0.0593	-0.265***	0.060	Reference: without children
Child 7-12 years	-0.219***	0.0381	-0.222***	0.038	
Child 13-15 years	-0.161***	0.0423	-0.160***	0.042	
Male elderly in poor health	-0.153*	0.0950	-0.150	0.095	Reference: without the elderly
Male elderly in good health	0.117	0.1130	0.117	0.113	
Female elderly in poor health	0.088	0.0803	0.109	0.079	
Female elderly in good health	-0.074	0.0953	-0.085	0.095	
Year 2000	0.001	0.0473	0.003	0.047	
Year 2004	-0.014	0.0447	-0.017	0.045	Reference: year 1997
Intercept	1.079***	0.1598	1.066***	0.118	
N	443		443		
N=1	143		143		
Adjust R <sup>2</sup>	0.3		0.3		

Note: \*, \*\*, \*\*\*: Coefficient different from zero at 10, 5, 1 percent significance levels, respectively.

Table 6

Of all households that has only one spouse migrate, who does?

(Dependent variable: wife migrate only in a family =1, husband migrate only in a family=0)

Variables	Coefficient	Standard error	Coefficient	Standard error	
Age of wife	-0.016***	0.005	-0.014***	0.00458	
Age of husband	0.013***	0.004	0.011*	0.00445	
Schooling years of wife			0.008	0.00570	
Wife with primary school education	0.083*	0.053			Reference: Illiterate wife
Wife with junior high school education	0.032	0.058			
Wife with senior high school education	0.188**	0.091			
Schooling years of husband			-0.012*	0.00713	
Husband with primary school education	-0.033	0.111			
Husband with junior high school education	-0.051	0.112			Reference: Illiterate husband
Husband with senior high school education	-0.028	0.124			
Husband with technical school education or above	-0.269	0.182			
Land per labor(mu)	-0.003	0.006	-0.001	0.00260	
Child 0-4 years	-0.180***	0.068	-0.202***	0.06666	
Child 5-6 years	-0.197***	0.065	-0.198***	0.06520	
Child 7-12 years	-0.119***	0.041	-0.117***	0.04089	Reference: without children
Child 13-15 years	-0.113	0.044	-0.114***	0.04331	
Male elderly in poor health	-0.117	0.102	-0.105	0.10144	
Male elderly in good health	0.220*	0.128	0.228*	0.12736	Reference: no male elderly
Female elderly in poor health	-0.046	0.099	-0.084	0.09705	Reference: no male elderly
Female elderly in good health	0.053	0.104	0.069	0.10303	Reference: no male elderly
Year 2000	0.038	0.052	0.034	0.05181	
Year 2004	0.103**	0.049	0.100**	0.04865	Reference: year 1997
Intercept	0.348**	0.173	0.415***	0.13762	
N	359		359		
N=1	88		88		
Adjust R <sup>2</sup>	0.14		0.14		

Note: \*, \*\*, \*\*\*: Coefficient different from zero at 10, 5, 1 percent significance levels, respectively.