

Education Selectivity in the Internal Migrations of Mainland China[†]

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I. Introduction

The fluidity of various forms of population movement such as permanent and temporary migrations and commuting is an essential aspect of successful economic development (Liu, 1991). Without this fluidity, the spatial mismatch between the supply of and the demand for labor remains to be a persistent cause of low economic productivity and high unemployment and underemployment. In our opinion, the impressive successes of Mainland China's neighboring economies (Japan, Taiwan and South Korea) in recent decades are all linked to the high fluidity of population movement.

High fluidity of population movement has many serious side effects as well. This is particularly true at the early and middle stages of economic development when the migration process is so highly asymmetric that the people in a few large metropolitan areas have to suffer the consequences of extremely rapid population growth such as pollution and congestion, while the economic vitality in many parts of the country is threatened or

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undermined by a large net outflow of young adults, particularly those who are better educated.

In order to avoid the negative effects of migration, the government of Mainland China started using the population registration system to control and direct the migration process since the 1950s (Maeda, 1993). As a consequence, the migration level became extremely low, and the age pattern of migration became greatly distorted, although the asymmetry of migration towards the upper strata of the urban/rural settlement system remained unexpectedly strong even in the mid-1980s (Ma, et al., 1993).

During the Cultural Revolution (1966-1976), the migration control was even used in Mainland China for ideological and strategic reasons. About twenty million school graduates, cadres, and intellectuals (including university professors) were sent from cities to rural areas during that period (Hayase, 1990) in the name of "learning from peasants". Many Han people were sent to areas of minority ethnic groups for the stated purpose of promoting socioeconomic development, although the prevention of political independence in the minority areas was most likely to be a major concern.

The rapid economic growth of Mainland China following the move toward market economy since the late 1970s has been accompanied by an increased level of population mobility (Hayase, 1990). In common with the situation in other countries, the locations of rapid economic growth in Mainland China are limited to only a few places where the economies of agglomeration and scale help maintain and strengthen the upward spiral. The economic growth is fuelled by foreign and domestic capital investment and cannot be easily sustained without labor migration. It is also accompanied by increased income disparities.

Being very large and poorly integrated, Mainland China has much greater interregional and urban/rural income disparities than what were experienced by its neighboring economies at the similar stage of their economic development. The huge income disparities cannot only strengthen

the migration potential but also threaten the unity of the country. Whether different parts of the country can be held together in the future depends crucially on whether the migration process becomes an equilibrating or dis-equilibrating mechanism.

For the migration process to serve as an equilibrating (or not too dis-equilibrating) mechanism in Mainland China, it should at least be not too selective with respect to the level of education. Otherwise, the migration process would decrease the quality of the human capital in rural areas and less well developed regions so that the reduction in the urban/rural and interregional economic disparities becomes exceedingly difficult to achieve.

The purpose of this paper is to study the selectivity in the internal migrations in Mainland China with respect to the level of education, based on a sample of young adults (aged 17-29) taken from the micro data of the 1987 one-percent National Population Survey (NPS87). Since 57 percent of migrations in Mainland China were concentrated in the 17-29 age interval, our chosen sample would allow us to focus on the most critical part of the migration phenomenon (Ma, et al., 1993). Furthermore, the relatively large number of migrants observed in this age interval can enhance the reliability of the computed migration indicators.

The organization of the paper is as follows. Section 2 describes the data and the definition of migration. Section 3 examines the effect of education on the migration propensity and shows how this effect varies with three other important personal factors (gender, age and marital status). Section 4 is focused on the education selectivity in the migrations among the city, town and rural strata of the urban/rural hierarchy. In section 5, the focus is shifted to the education selectivity in the migrations among Metropolitan, Coastal and Interior Regions. Section 6 provides a concluding discussion.

II. The Data and Definition of Migration

NPS87 is the first micro data file in Mainland China that contains nationwide information on migrations. The file contains 665,123 usable records, with 531,745 individual records nested under 123,378 household records. Each individual record contains information on major personal attributes such as level of education, current age, marital status, age at first marriage, duration of residence, current and previous residences, and reason for migration, whereas each household record contains a very detailed geographical coding and information on household size and type.

In NPS87, a migration is defined as a movement from other city, town or rural county during the 1982-87 period in terms of (1) a registered change to current address or (2) absence from the address of the registered household for at least six months. Since the migration information is based on the question on only the most recent move, no more than one migration for each person during the five-year period can be revealed in this file. In other words, the actual migration level is somewhat under-represented due to the problem of left censorship. Of course, this problem is less serious in the later part than in the early part of the 1982-87 period.

To minimize the left censorship problem and to avoid the complications due to the 1984 reclassification of urban places, we omit the first two years and concentrate on the migrations that were recorded in each of the remaining three complete and non-overlapping years: 1985 (from July 1, 1984 to June 30, 1985), 1986 and 1987. Each of these three years is called the "migration period" (i.e. the period used to observe migrations).

NPS87 was based on a stratified sampling design with different strata having different sampling intensities. In order to avoid yielding biased migration measures, each person in the data file must be assigned a weight which is inversely related to the sampling intensity. Since such

weights were missing in the original micro file, we regenerated them according to a procedure described in Ma, et al. (1993).

The outmigration (departure) rates used to represent the migration propensities in this paper are computed according to a proper match between the weights of the migrants observed in each of the one-year periods and the weights of the corresponding at-risk population. All other measures are also based on the weights rather than the actual numbers of individuals in the sample. Since the weights are not integers, certain values such as the net migration volumes may appear to be slightly inconsistent after the values are rounded to integers.

Compared with the migration questions used in American and Canadian censuses, the migration question in NPS87 is better in the sense that it can yield highly precise information on the age at the time when migration actually took place. Thus, the age pattern of migration established in this study can be more closely related to the life-cycle stages than can those constructed from the American or Canadian censuses. To correspond well to the life-cycle stages, we group the young adults into three age groups: 17-19, 20-23, and 24-29.

To study the effects of education on migration, we use the information on the education status of each person at the time of the survey, because the survey did not collect the information on personal background at the time of migration. Three levels of education are defined in this study: (1) best educated (high school graduate and over), (2) middle educated (middle school graduate), and (3) poorly educated (primary school graduate and below). There are too few college and university graduates to justify the specification of an additional level.

The impossibility of defining the education levels as of the beginning of the migration period should not be a serious concern for the following reasons. First, since nobody's education level could decrease through time, those in the lowest education group at the time of the survey must all be in the lowest education group at the beginning of the migration period. Second, we expect that the young adults who were already in

the better educated groups at the beginning of the migration period would be motivated to migrate in a similar direction (i.e. toward the upper level of the settlement hierarchy) as those who migrated for the reason of pursuing higher education and later became members of the better educated groups.

In studying the effect of education on migration, it is important to control for marital status. With respect to migration behaviour, the most important distinction is between the married status (i.e. being already married at the beginning of the migration period) and the wedded status (i.e. becoming married during the migration interval) (Ma, et al., 1993). The latter is usually associated with much higher propensity to migrate than is the former. In addition to these two statuses, we also specify the single status. There are very few divorced or widowed young adults. They are left in the married class for convenience.

III. Effect of Education on Outmigration Propensity and Its Variation by Marital Status and Age

There are strong theoretical reasons for expecting that the outmigration propensity be an increasing function of the level of education of the potential migrant. It is convenient to group these reasons under the following three headings.

Life-cycle Event Effect. For many better educated adults, migrations are triggered at their late teens and early 20s by the events of entering and leaving the higher levels of the education system.⁽¹⁾ In a developing

(1)The importance of the migrations due to pursuing higher education in a developed country is demonstrated by the following data on the compositions of the annual interprefectural out- and in-migration flows of the '15 and over' age group in Japan based on the 1970 census of Japan. More than 20 percent of the outmigration flows of four peripheral prefectures (Toyama, Nagano, Shizuoka and Tottori) were students. For Kyoto prefecture where many colleges and universities are concentrated, students represented 24.5 percent of the in-migration flow (Mikami, 1985, p. 95).

country like China, the education effect on these young adults should be particularly strong, because the institutions of higher education tend to be relatively few and highly concentrated in the big cities, and because the people who did not enter the school system or leave it at an early stage are most likely to be absorbed in the local agricultural sector and hence remain sedentary.

Information Effect. Better education can result in a broader and more informative information field. In other words, a better educated potential migrant tends to have more information on the opportunities at different locations and hence is more likely to outmigrate. Since the quantity and quality of the information on a potential destination tend to be better for better educated individuals, the willingness to take the risk of migration tends to increase with the level of education. This willingness is further enhanced by the fact that the better educated tend to be more capable of adjusting to new environments. For the potential migrants in rural areas, the effect of education is also enhanced by the fact that the gain in expected income due to migration is an increasing function of the level of education (Barnum and Sabot, 1976, pp. 29-35).

Cultural/psychological Effect. Improvement in education tends to weaken the importance of kinship ties and psychological attachment to the local area. By exposing the students to the Western ideas, modern education tends to undermine the traditional value system and result in an identification with peers in the school system or the place of employment rather than with kin. In other words, the better educated tend to have weaker roots and are hence more prone to migrate. For the potential migrants in rural areas, improvement in education may increase the preference for urban life and urban occupations and hence strengthen the migration tendency (Caldwell, 1969, pp. 60-69).

We found that the propensity for a young adult Chinese to migrate was indeed an increasing function of the level of education (Table 1). This is consistent with the general findings in many other countries such

Table 1. Departure Rates of Chinese Young Adults (Aged 17-29) by Education, Marital Status and Age, 1985-87

	Departure Rate (/1000*yr)			At-risk Population (persons)		
	Both sexes	Male	Female	Both sexes	Male	Female
Total	15.7	11.6	19.9	392247	198063	194184
Best Educated	28.5	28.8	28.2	73354	43318	30035
Middle Educated	14.5	8.2	23.2	161063	93358	67705
Poorly Educated	10.9	4.6	14.9	157831	61387	96444
MARITAL STATUS						
Single	12.9	14.8	10.4	196912	113680	83232
Best Educated	39.5	44.2	32.2	37047	22598	14448
Middle Educated	9.8	9.7	10.0	86073	53033	33040
Poorly Educated	3.2	4.3	2.0	73793	38048	35745
Wedded	96.9	16.3	167.7	29662	13889	15773
Best Educated	60.0	24.1	106.8	5810	3286	2524
Middle Educated	89.8	13.8	175.7	13546	7186	6361
Poorly Educated	126.8	14.2	182.7	10305	3417	6889
Married	4.4	5.5	3.6	165673	70495	95178
Best Educated	9.2	9.7	8.7	30497	17434	13063
Middle Educated	4.5	4.5	4.4	61444	33139	28305
Poorly Educated	2.4	3.4	2.0	73733	19922	53811
AGE GROUP						
17-19	14.9	12.3	17.5	107797	54100	53697
Best Educated	46.5	52.4	31.4	13219	7649	70832
Middle Educated	12.4	7.8	18.6	45414	25962	19452
Poorly Educated	8.7	3.1	12.8	49164	20489	28675
20-23	22.9	14.4	31.4	141677	70845	70832
Best Educated	36.9	36.0	38.1	25946	14997	10949
Middle Educated	20.6	10.1	34.0	65213	36546	28667
Poorly Educated	18.7	5.6	26.8	50518	19302	31217
24-29	9.1	8.3	9.9	142773	73118	69655
Best Educated	15.3	14.8	16.1	34188	20673	13516
Middle Educated	8.5	6.2	12.2	50436	30850	19586
Poorly Educated	5.9	5.0	6.4	58149	21595	36553

as Canada (Liaw, 1990), Japan (Kawabe and Liaw, 1992), and the United States (Long, 1988).⁽²⁾ For both sexes combined, the outmigration (departure) rates were 28.5, 14.5 and 10.9 per 1000 per year for the best educated, the middle educated and the poorly educated, respectively. The main difference is between the best educated on the one hand and the middle and poorly educated on the other.

Although males and females tend to play rather different roles and may migrate in rather different ways in the Chinese society, the outmigration propensities of both males and females were found to be an increasing function of education. The best educated females and males had almost the same outmigration propensity (28.2 per 1000 for females and 28.8 per 1000 for males). However, at the middle and low levels of education, the young adult females were about 3 times as migratory as their male counterparts: 23.2 versus 8.2 per 1000 for the middle educated, and 14.9 versus 4.6 per 1000 for the poorly educated. To know the reason for this large difference and to get better insights into the education selectivity, we now stratify the young adults by marital status and age.

3.1. Marital Status

For young adult females, the effect of education on the outmigration propensity differed markedly between the wedded status on the one hand and the single and married statuses on the other (Table 1). For the wedded females, the direction of the education effect was completely

(2)The positive effect of education on migration has also been observed in Taiwan. A survey of rural labor force (taken in the mid-1970s) revealed that the long-term outmigration rates were 6 percent for those with less than middle school education, 23 percent for those with at least middle school education (Liao, 1985, p. 131). A more recent labor force survey at the provincial level (taken in October 1987) showed that education has a positive effect on the propensity to make migrations between Hsiens (prefectures), but that the effect curiously disappeared when migrations among regions (larger than prefectures) were studied (Chen, 1990).

reversed: the lower the level of education, the higher the outmigration rate.⁽³⁾ Their outmigration rate was 106.8 per 1000 at the highest level of education but was as high as 175.7 and 182.7 per 1000 at the middle and low levels of education. This reversed relationship can be put in sharp contrast with the situation in Japan where the better educated females are much more migratory than the less educated females at the time of wedding (Kawabe and Liaw, 1992).

A plausible explanation for this exception is that in rural areas of Mainland China, the education of the daughters tends to be ignored in poor families, and that the poor families are more likely to arrange their daughters' marriages to other villages and small towns to smooth the fluctuations in household consumption (Rosenzweig and Stark, 1991).⁽⁴⁾ An examination of the reported reasons for the migrations of the young adult females reveals that marriage accounted for only 28.1 percent of the migrations of the best educated but as high as 68.8 and 86.9 percent for the middle and poorly educated.

For single and married young adult females in Mainland China, the education effect was normal: the higher the level of education, the higher the outmigration rate. The main contrast is between the higher rate of the best educated (single: 32.5 per 1000; married: 8.7 per 1000) on the one hand and the lower rates of the middle educated (single: 10.0 per 1000; married: 4.4 per 1000) and the poorly educated (single: 2.0 per 1000; married: 2.0 per 1000) on the other.

(3) Another surprising exception to the positive relationship between education level and migration propensity is found among the daughters (aged 12-25) in a sample of rural households in Ecuador who had the choice of making an 'economic' (i.e. not due to pursuing education or getting married) migration to urban areas. The partial explanations are (1) 'that urban employment opportunities for women were concentrated at the lower end of the service sector (e.g., domestic service or household servants)', and (2) that the 'more educated daughters (and sons) may relocate more often for non-work-related reasons (e.g., to further their education)' (Bilsborrow, etc., 1987).

(4) Rural family income is low and is likely to be reduced to below subsistence level in some occasions due to unpredictable factors such as drought, flood and pests or crop diseases. By marrying daughters to other villages or towns, rural families may obtain essential help from the families of the son-in-laws in times of serious economic hardship.

For young adult males, the normal education effect prevailed in all marital groups, with a minor exception of the wedded group in which the outmigration rates of the middle and poorly educated were almost identical (about 14 per 1000, compared with 24 per 1000 of the best educated).

3.2. Age Groups

An indirect way of testing the validity of both "life-cycle event effect" and "information effect" of education is to compare the variation in outmigration rate by the level of education among the 17-19, 20-23 and 24-29 age groups. The former effect is most likely to dominate the first age group and becomes essentially irrelevant in the last age group, whereas the latter effect tends to be most important in the last age group.

For both males and females, we found that the normal relationship between outmigration rate and the level of education was quite strong in both 17-19 and 24-29 age groups, implying the strength of both "life-cycle event effect" and "information effect" (Table 1). Omitting gender distinction, the outmigration rates of the 17-19 age group were 46.5 (highly educated), 12.4 (middle educated), and 8.7 (poorly educated) per 1000, whereas the corresponding figures of the 24-29 age group were 15.3, 8.5, and 5.9 per 1000.

In the 20-23 (transitional) age group, the normal relationship was strong for males (36.0, 10.1, and 5.6 per 1000 for best educated, middle educated and poorly educated, respectively). However, it was quite weak for females (38.1, 34.0 and 26.8 per 1000, correspondingly), due to the overwhelming importance of marriage migrations in this age group. For females in the 20-23 age group, marriage accounts for 76.8 percent of the migrations. The corresponding figures are 51.5 percent in the 17-19 age group and 54.5 percent in the 24-29 age group.

IV. Education Selectivity in the Migrations within the Urban/Rural Hierarchical System

For Mainland China, the study of the migrations within the urban/rural hierarchical system is particularly important, because the government policy on migration control is based on the strata within this system. The policy is designed to suppress the upward movements, particularly those towards cities, and to encourage downward movements. The main purpose of this section is to see how education selectivity works in the hierarchical system and whether it interacts with government control. For simplicity, our analysis is based on the division of the system into three strata: cities, towns, and rural counties. The distribution of the young adult population among the three strata was 19 percent in city stratum, 19 percent in town stratum, and 62 percent in the rural stratum.

We found that the positive effect of education on outmigration rate prevailed in every stratum for each sex, with only one minor exception (Table 2). The exception involved the females in city stratum whose outmigration rate turned out to be slightly lower for the middle educated group (6.2 per 1000) than for the poorly educated group (6.9 per 1000), although it was much higher for the best educated group (17.2 per 1000). This exception is probably related to that a higher proportion of the outmigrations of poorly educated females was due to marriages.

With an outmigration rate of only 1.8 per 1000, the poorly educated males in towns were by far the most sedentary. It seems that the government control on migration was particularly effective for this group of males for the following two reasons. First, the poorly educated immigrants of cities are mostly excluded from the job rationing system so that the poorly educated town residents have little opportunity to be accepted in cities as migrants.

Table 2. Out-, In- and Net Migration Rates of Chinese Young Adults
(Aged 17-29) by Urban/Rural Type, Sex and Education, 1985-87

	Outmig.		Inmig. Net Mig.				Stock		Composition			
	Rate (/1000)	Dest. Share (%)			Rate (/1000)	Rate (/1000)	Net Migration Volume (person)			(persons)	(%)	
		to si	to zn	to xg			Total	with si	with zn	with xg		
BOTH SEXES												
City (si)	13.4	58.1	24.5	17.4	28.8	15.4	1143	0	-33	1176	74143	100.0
Best Educated	23.3	68.9	24.5	6.6	40.7	17.4	517	0	-48	564	29743	40.1
Middle Educated	7.2	35.8	25.7	38.5	19.3	12.1	385	0	13	372	31801	42.9
Poorly Educated	5.7	24.6	20.5	54.9	24.9	19.2	242	0	2	240	12599	17.0
Town (zn)	11.4	24.9	43.1	32.0	28.9	17.4	1290	33	0	1256	74058	100.0
Best Educated	18.4	42.2	43.9	13.9	44.5	26.1	411	48	0	363	15745	21.3
Middle Educated	11.1	20.0	45.3	34.7	27.8	16.7	541	-13	0	554	32459	43.8
Poorly Educated	7.6	8.3	38.0	53.7	20.7	13.0	337	-2	0	339	25854	34.9
Rural County (xg)	17.6	31.3	35.5	33.2	7.7	-10.0	-2433	-1176	-1256	0	244046	100.0
Best Educated	39.8	55.0	36.4	8.7	6.5	-33.3	-928	-564	-363	0	27865	11.4
Middle Educated	18.1	26.3	38.8	34.9	8.5	-9.6	-926	-372	-554	0	96803	39.7
Poorly Educated	12.1	19.3	30.8	49.9	7.3	-4.9	-579	-240	-339	0	119378	48.9
MALE												
City (si)	16.0	57.6	25.6	16.8	30.5	14.5	547	0	-40	587	37800	100.0
Best Educated	29.0	66.4	26.1	7.5	48.9	19.9	306	0	-47	353	15354	40.6
Middle Educated	8.1	32.9	26.7	40.4	16.3	8.2	142	0	6	137	17243	45.6
Poorly Educated	4.0	34.1	8.7	57.1	23.0	18.9	99	0	1	98	5203	13.8
Town (zn)	7.9	39.0	43.7	17.3	20.7	12.8	473	40	0	432	36988	100.0
Best Educated	17.4	44.2	41.9	13.9	45.0	27.7	250	47	0	203	9039	24.4
Middle Educated	6.6	36.2	43.4	20.4	16.6	9.9	176	-6	0	182	17760	48.0
Poorly Educated	1.8	13.4	59.9	26.7	6.3	4.5	46	-1	0	47	10189	27.5
Rural County (xg)	11.3	49.5	34.7	15.7	3.0	-8.3	-1019	-587	-432	0	123276	100.0
Best Educated	34.0	60.1	35.0	4.9	4.6	-29.4	-556	-353	-203	0	18926	15.4
Middle Educated	8.7	38.0	40.6	21.4	3.2	-5.5	-319	-137	-182	0	58356	47.3
Poorly Educated	5.2	45.8	21.5	32.7	2.1	-3.1	-144	-98	-47	0	45994	37.3
FEMALE												
City (si)	10.7	58.8	22.8	18.4	27.1	16.4	597	0	8	589	36344	100.0
Best Educated	17.2	73.3	21.8	4.9	31.9	14.6	210	0	-1	212	14389	39.6
Middle Educated	6.2	40.3	24.2	35.5	22.8	16.7	242	0	8	235	14559	40.1
Poorly Educated	6.9	20.7	25.3	54.0	26.3	19.4	144	0	1	143	7396	20.3
Town (zn)	14.9	17.4	42.8	39.8	37.0	22.0	817	-8	0	824	37071	100.0
Best Educated	19.8	39.9	46.1	13.9	43.8	24.0	161	1	0	160	6707	18.1
Middle Educated	16.5	12.1	46.3	41.6	41.3	24.8	365	-8	0	372	14699	39.7
Poorly Educated	11.4	7.8	35.7	56.6	30.0	18.6	291	-1	0	292	15665	42.3
Rural County (xg)	24.1	22.7	35.9	41.5	12.4	-11.7	-1413	-589	-824	0	120770	100.0
Best Educated	52.2	48.0	38.2	13.8	10.6	-41.5	-371	-212	-160	0	8939	7.4
Middle Educated	32.3	21.5	38.1	40.4	16.5	-15.8	-607	-235	-372	0	38447	31.8
Poorly Educated	16.4	14.1	32.6	53.3	10.5	-5.9	-435	-143	-292	0	73384	60.8

Note: (1) A migrant is defined as a person migrating between sub-provincial administrative areas.

(2) Immigration Rate = Number of Immigrants * 1000 / Population at Destination.

Second, the opportunity cost of moving down to the rural stratum (all the urban benefits such as pension and subsidized food and services provided by the government to urban residents) is too high for the poorly educated town residents.

In contrast, with a high outmigration rate of 52.2 per 1000, the best educated females in rural counties were highly migratory. These were the females who were most effective in using not only the pursuit of education but also other means to migrate to cities. Consequently, the percentage of them selecting cities as their destination (48.0) was much higher than the corresponding figures for the middle and poorly educated rural females (21.5 and 14.1).

The destination choice patterns of the outmigrants in all three urban/rural strata displayed a common trend: the attraction of the rural strata was a decreasing function of the level of education. The decrease was particularly sharp between the middle and the best levels of education. For example, among the outmigrants of cities, the proportions choosing the rural stratum as the destination were 6.6 percent for the best educated, 38.5 percent for the middle educated, and 54.9 percent for the poorly educated.

The likelihood that the outmigrants from cities would also end up in cities is much stronger for the best educated than for the middle and poorly educated. The percentage of the male outmigrants from cities who ended up in cities was 66.4 percent for the best educated, 32.9 percent for the middle educated, and 34.1 for the poorly educated. The figures for the corresponding females were 73.3, 40.3, and 20.7 percent. Thus, among the outmigrants from cities, the females were even more likely to remain in the city stratum than were males.

The best educated migrants were clearly more capable of moving up the urban/rural hierarchy than were the less well educated. This was true for both males and females. For example, the proportions of the outmigrants from towns choosing cities as the destinations were 42.2

percent for the best educated, 20.0 percent for the middle educated, and only 8.3 percent for the poorly educated. Similarly, the proportions of the outmigrants from rural counties choosing cities as destinations were 55.0 percent for the best educated, 26.3 percent for the middle educated, and 19.3 percent for the poorly educated. Since the standard of living is higher at the higher level of the urban/rural hierarchy, the best educated individuals clearly had a better chance of improving their living standard through migration.

What are the implications of the education selectivity in migration on the qualities of human capital in the three strata? At the rural stratum, the net outmigration rates of both sexes were much higher for the best educated (males: 29.4 per 1000; females: 41.5 per 1000) than for the middle educated (male: 5.5 per 1000; female: 15.5 per 1000) and the poorly educated (male: 3.1 per 1000; female: 5.9 per 1000). Thus, the education selectivity resulted in a decrease of the quality of human capital in the rural stratum.

The net migration gains of the city and town strata were almost exclusively from the rural stratum, because there were very small net transfers between the two upper strata. For males, the net transfers from the rural stratum to the city and town strata were nearly equal. For females, the net transfer to the town stratum was about twice the net transfer to the city stratum.

It is an interesting paradox that the education selectivity in migration did not improve the human capital in the city stratum, although it clearly resulted in the deterioration of the human capital in the rural stratum. Actually, for females, the net immigration rates of the city stratum were 14.6 per 1000 for the best educated, 16.7 for the middle educated, and 19.4 for the poorly educated. Behind this paradox was the big difference in the educational composition of population between the city and rural stratum at the beginning of the migration interval.⁽⁵⁾ In the population of the city stratum, the composition was 40.1 percent best

educated, 42.9 percent middle educated, and 17.0 percent poorly educated. In the population of the rural stratum, the corresponding percentages were 11.4, 39.7 and 48.9. When the populations are disaggregated by sex, the contrast is sharper for females than for males.

For the male population of the town stratum, we found that the net gain of migrants was accompanied by a substantial improvement in the quality of human capital. Its net immigration rates were 27.7 per 1000 of the best educated, 9.9 per 1000 of the middle educated, and 4.5 per 1000 of the poorly educated.

An interesting but small part of the net migration picture is the net transfer of the best educated male migrants from the city stratum to the town stratum. This is interesting because it is an exception to the general upward orientation of the selectivity with respect to education. A plausible explanation is the return migrations immediately after the completion of the higher education. The government has a policy of sending most of the college and university graduates, who went to study in cities from towns and rural counties, back to their place of origin.

For the female population of the town stratum, the net gain of migrants was accompanied by a moderate improvement in human capital. Its net migration rates were 24.0 percent for the best educated, 24.8 percent for the middle educated, and 18.6 percent for the poorly educated.

(5) This paradox is also related to the commonly observed pattern in other countries that the quality of migrants is on the average higher than that of the origin population but less than that of the destination population (Liao, p. 129). It was suggested by a referee that among the laborers, the average level of education of the immigrants may be higher than that of the city residents so that the immigrants may have improved the quality of the laborers of cities.

V. Education Selectivity in the Migrations within A Three-Region System

Whether the different parts of the extensive territory of China can remain united depends partly on the avoidance of excessive interregional economic disparities. Education selectivity in migration undoubtedly plays an important role in influencing such disparities. For simplicity, we divide the territory of Mainland China into three regions: (1) Metropolitan Region, including Beijing, Tianjing and Shanghai; (2) Coastal Region, including all coastal provinces from Liaoning on the north to Guandong on the south; and (3) Interior Region, including all the remain provinces. Note that Tibet is excluded, because it was not covered by the survey. The distribution of the young adult population among the three regions is 3 percent in the Metropolitan Region, 35 percent in the Coastal Region, and 62 percent in the Interior Region.

In all three types of regions, the level of education had a strong positive effect on the outmigration rate (Table 3). The effect was stronger for males than for females. Except for the females in the Interior Region, the main contrast was between the high outmigration rates of the best educated individuals (ranging from 23 per 1000 for the females in the Metropolitan Region to 32 per 1000 for males in Coastal Region) on the one hand, and the very low rates of the poorly educated males in all three types or regions (about 4 or 5 per 1000) on the other.

With respect to the destination choice patterns, the education selectivity was particularly strong for the outmigrants of the Metropolitan Region: the best educated (79.6 percent) and the middle educated (93.2 percent) were much more likely to remain in the Metropolitan Region than were the poorly educated (56.8 percent). Most of the poorly educated outmigrants who left the Metropolitan Region did not go very far: they

Table 3. Out-, In- and Net Migration Rates of Chinese Young Adults
(Aged 17-29) by Region, Sex and Education, 1985-87

	Outmig.	Dest. Share (%)			Inmig.	Net Mig.	Net Migration Volume (person)				Stock	Comp
	Rate (/1000)	to 3M	to CP	to IP	Rate (/1000)	Rate (/1000)	Total	with 3M	with CP	with IP	(persons)	
BOTH SEXES												
Three Metropolitan Areas (3M)	17.5	82.6	9.6	7.9	25.9	8.4	98	0	68	30	11645	
Best Educated	24.8	79.6	9.5	10.9	34.5	9.7	53	0	30	23	5448	
Middle Educated	11.8	93.2	5.4	1.4	18.3	6.5	33	0	26	7	5028	
Poorly Educated	7.6	56.8	38.4	4.8	18.5	11.0	13	0	12	1	1168	
Coastal Provinces (CP)	15.5	4.1	86.8	9.2	15.5	-0.0	-5	-68	0	63	138094	
Best Educated	31.6	5.2	85.7	9.0	30.0	-1.6	-42	-30	0	-12	25867	
Middle Educated	13.7	3.5	85.8	10.7	13.5	-0.2	-13	-26	0	13	61538	
Poorly Educated	9.5	3.2	90.2	6.6	10.5	1.0	50	-12	0	62	50689	
Interior Provinces (IP)	15.7	1.2	6.8	92.0	15.3	-0.4	-93	-31	-63	0	242508	
Best Educated	27.1	3.3	5.4	91.3	26.9	-0.3	-11	-23	12	0	42038	
Middle Educated	15.2	0.5	7.2	92.3	15.0	-0.2	-19	-7	-13	0	94497	
Poorly Educated	11.6	0.1	7.7	92.2	11.0	-0.6	-63	-1	-62	0	105973	
MALE												
Three Metropolitan Areas (3M)	16.6	74.3	11.4	14.2	27.3	10.7	63	0	42	21	5873	
Best Educated	27.0	71.4	10.9	17.8	41.6	14.6	40	0	22	17	2720	
Middle Educated	8.3	88.0	10.0	2.0	14.7	6.4	17	0	13	4	2628	
Poorly Educated	4.6	41.0	41.3	17.7	16.5	11.9	6	0	7	-0	525	
Coastal Provinces (CP)	12.5	6.1	78.0	15.9	11.2	-1.4	-96	-42	0	-54	69444	
Best Educated	32.2	6.0	83.0	11.0	29.0	-3.2	-50	-22	0	-27	15702	
Middle Educated	8.3	5.2	71.3	23.5	7.0	-1.2	-42	-13	0	-29	35098	
Poorly Educated	4.0	10.2	70.6	19.3	3.8	-0.2	-4	-7	0	3	18644	
Interior Provinces (IP)	10.8	2.6	6.4	91.0	11.0	0.3	33	-21	54	0	122746	
Best Educated	26.8	4.6	4.3	91.2	27.2	0.4	10	-17	27	0	24897	
Middle Educated	8.1	1.0	8.5	90.5	8.6	0.5	25	-4	29	0	55632	
Poorly Educated	4.8	0.0	8.5	91.5	4.7	-0.1	-2	0	-3	0	42218	
FEMALE												
Three Metropolitan Areas (3M)	18.3	90.2	7.8	2.0	24.5	6.1	35	0	26	9	5772	
Best Educated	22.6	89.4	7.9	2.7	27.5	4.8	13	0	8	6	2729	
Middle Educated	15.6	96.2	2.7	1.1	22.1	6.5	16	0	13	2	2400	
Poorly Educated	10.0	62.7	37.3	0.0	20.2	10.2	7	0	5	1	644	
Coastal Provinces (CP)	18.5	2.7	92.7	4.6	19.8	1.3	91	-26	0	117	68651	
Best Educated	30.7	4.0	90.2	5.8	31.4	0.8	8	-8	0	15	10165	
Middle Educated	20.9	2.6	93.4	4.1	22.0	1.1	29	-13	0	42	26441	
Poorly Educated	12.6	1.9	93.8	4.3	14.3	1.7	54	-5	0	59	32045	
Interior Provinces (IP)	20.7	0.5	7.0	92.5	19.7	-1.1	-126	-9	-117	0	119762	
Best Educated	27.6	1.5	7.1	91.4	26.4	-1.2	-21	-6	-15	0	17141	
Middle Educated	25.3	0.3	6.6	93.1	24.1	-1.2	-45	-2	-42	0	38864	
Poorly Educated	16.1	0.1	7.5	92.4	15.1	-1.0	-61	-1	-59	0	63756	

Note: (1) A migrant is defined as a person migrating between sub-provincial administrative areas
(2) Immigration Rate = Number of Immigrants * 1000 / Population at Destination.

mostly ended up in the Coastal Region. For the outmigrants of the Metropolitan Region, the education selectivity in destination choice pattern was basically the same between the two sexes.

Education selectivity in the destination choice pattern was also quite strong for the male outmigrants of the Coastal Region: the best educated (83.0 percent) were more likely to remain in the Coastal Region than were the middle educated (71.3 percent) and the poorly educated (70.6 percent). The less well educated males who left the Coastal Region mostly went to the Interior Region. For the female outmigrants of the Coastal Region, education selectivity in destination choice pattern was relatively weak. However, among the outmigrants who left the Coastal Region, the best educated were in general more prone to go to the Metropolitan Region than were the middle and poorly educated. This was particularly true for females.

It appeared that there was little education selectivity in the destination choice pattern of the outmigrants of the Interior Region. At every level of education, about 90 percent of them ended up within the Interior Region. However, among the migrants who left the Interior Region, the best educated were much more likely to end up in the Metropolitan Region than were the middle and poorly educated. For example, despite the fact that the Metropolitan Region's population share (3 percent) was much less than that of the Coastal Region (35 percent), the Metropolitan Region attracted somewhat more (4.6 percent) male outmigrants of the best educated group of the Interior Region than did the Coastal Region (4.3 percent).

In general, the education selectivity in the migrants' destination choice pattern was weaker for females than for males. Irrespective of the level of education, the Metropolitan and Coastal Regions retained substantially higher proportions of their female migrants than male migrants, whereas the Interior Region showed the same capacity to retain its male and female migrants.

The net transfers of migrants among the three regions differed markedly between the two sexes. Although the Metropolitan Region experienced net gains of both male and female migrants, the Coastal Region was a net loser of male migrants and a net gainer of female migrants, whereas the Interior Region was a net gainer of male migrants and a net loser of female migrants.

At every level of education, the net transfers of female migrants followed a simple and reasonable pattern: from lower income regions to higher income regions. The net transfers of the male migrants also tended to display this pattern, with two major exceptions: the net transfers of the best and middle educated migrants from the Coastal Region to the Interior Region. These exceptions were helpful to the prevention of the relative decline of the quality of the human capital in the Interior Region.

Because education selectivity in the net transfer of migrants among the three regions was in general rather weak for females and somewhat irregular for males, the impact of migration on the interregional disparities in the quality of human capital appeared to be rather weak. With the net outmigration rates being higher for the poorly educated than for the middle and best educated, the Interior Region experienced some improvement in human capital. In contrast, the quality of human capital in the Coastal Region declined.

Although the best educated migrants from the other regions were more prone to choose the Metropolitan Region as the destination than were their middle and poorly educated counterparts, the existing interregional difference in the quality of human capital was so large that the education selectivity in migration propensity was not strong enough to further improve the quality of the Metropolitan Region's human capital.

VI. Concluding Discussion

We have found that the level of education had a positive effect on the propensity to migrate in Mainland China. This is a very general and robust finding. A major exception, however, occurred to the females who got married during the migration interval: the poorly and middle educated were extremely migratory (183 and 176 per 1000 per year), whereas the best educated had a much lower migration rate (106.8 per 1000 per year).

Interestingly, this exception is in sharp contrast to the situation in Japan where the best educated females were much more migratory than the less well educated at the time of marriage. A plausible explanation for this exception is that in the rural areas of Mainland China, the education of the daughters tends to be ignored in poor families, and that the poor families are more likely to arrange their daughters' marriages to other villages and small towns to smooth the fluctuations in household consumption. Consistently, we found that among females, the dependency on marriage as a reason for migration was much greater for the less educated than for the better educated.

The education selectivity had a strong effect of decreasing the quality of the human capital in the rural areas of Mainland China. This is an unavoidable side effect of the migration decisions made by numerous individuals who are interested in improving their socioeconomic circumstances. As demonstrated by the experiences of Japan and other economically successful countries, the proper way to deal with this problem is not to control migration. Rather, it should be in the form of transferring tax revenues from urban to rural areas so that the basic infrastructures in the rural areas can be maintained or even improved. An important and helpful aspect of the rural-urban migration in many Asian countries is that large amounts of the earnings of the migrants are sent back to the parental families. Such remittance has helped make the

rural areas in Taiwan remain economically viable and, in some cases, prosperous. Since the family system remains quite strong in Mainland China, the negative effect of the education selectivity on the rural areas of China can be at least partially neutralized by the remittance sent back by the outmigrants. It can be further neutralized by the role model effect. A successful migration by a well educated person (e.g. going to an university and then getting a good job) may induce more family investment in children's human capital in the migrant's previous rural community.

Despite an overall net loss of migrants, the Interior Region of China did not suffer a decrease in the quality of its human capital as a consequence of the migration process. Actually, due to the larger net outmigration rate of the less well educated, the Interior Region experienced an improvement in human capital. The smaller net losses of the best and middle educated migrants by the Interior Region were due to its net gains of the best and middle educated male migrants from the Coastal Region. Such a net transfer from high wage to low wage region is apparently counter-intuitive. However, it would be quite understandable if we incorporate urbanization process into interregional population redistribution. The 'invasion' of urban areas in interior land by the better educated rural migrants from the much more commercialized Coastal Region is not a surprise. For example, the well organized construction teams from the rural areas of some coastal provinces have entered into the urban areas in various part of the country, with a large proportion entering into the Interior Region. As early as 1983, the number of migrants exported from only one coastal province (Jiangsu) in this form amounted to about 160,000 persons (Luo, 1990). Zhejiang is another coastal province which has the tradition to 'export' labor from its rural areas to other parts of the country (even to Xinjiang in Northwest).

If the investment capital continues to concentrate in the Metropolitan and Coastal Region, it is quite likely that the migration process will soon

result in the decrease of the quality of human capital in the Interior Region. If this indeed happens, we would also suggest that transfer of tax revenues to the Interior Region, rather than another scheme of migration control, be seriously considered.

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中國大陸年輕人遷移中 教育的選擇性

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(中文摘要)

教育程度高的個人通常有較高的遷移率。這種選擇性在某些時候會導致較落後地區的人才素質的下降，進而對這些地區的發展產生不利的影響。

本文的目的是分析和探討目前中國大陸年輕人（17~29歲）遷移中教育的選擇性及其影響。分析資料來自1987年中國大陸人口抽樣調查。

我們發現大陸年輕人中，教育程度高的個人有較高的遷移率。除了女性因婚遷而有變異，這種相關性對不同性別、不同年齡組（17~19，20~23，24~29），及不同婚姻狀況（單身、已婚）都成立。教育選擇性造成了城鄉交流中農村地區的人才素質的下降。在較發達的沿海省份與內地省份的交流中，這種選擇性的影響並不顯著。

關於由遷移中教育選擇性及其他原因所造成的各地所得不均的持續與擴大的對策，我們認為與其採用人口流動的控制政策，倒不如採用對低所得地區經費分配優惠的政策。

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