An Origin-Destination Linked Approach to Measuring the Effect of Migration on Income in the Context of China*

(Preliminary Draft)

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Abstract (148 words)

This study offers a new approach to measuring the effect of migration on individual income. Using a new dataset from the 2009 Study of China's Floating Population, we match migrants at destination with individuals back at their hometown community. This allows us to make systematic comparisons among active migrants, return migrants, and non-migrants, and helps us better understand how migration experience affects one's income in the context of contemporary Chinese geographic mobility and economic development. We confirmed that migration does predict increased income with duration in the destination. By contrast, once the migrants return home, their prior migration experience does not necessarily benefit them in the hometown labor market. We argue the lack of labor market success for some returnees can be attributable to two factors: (1) the mismatch between returnees' human capital and expectation and their hometown labor market conditions, and (2) the family demand on returnees.

INTRODUCTION

Since China launched its economic reform more than 30 years ago, an inevitable outcome has been the rise of geographic mobility. Today China's internal migration, typically rural-to-urban labor mobility, has reached an unprecedented level, even now described as "the largest in human history" (Roberts 1998; Chan 2008). Such an upsurge in migration has, in turn, stimulated considerable interest among scholars and generated several lines of research on China's population redistribution: general patterns and trends over time (Goodkind and West 2002; Liang and Ma 2004; Chan forthcoming), migrants' adaptation in the urban labor market (Meng and Zhang 2001; Wang et al 2002; Knights and Yueh 2004), migrants' housing and settlement in destination cities (Wu 2002; 2005), and the experiences of migrant women (Fan 2004) and migrant children (Liang, Guo, and Duan 2009).

Scholars of internal migration in China usually rely on two kinds of data sources for their investigation: one is conventional census/survey data (the decennial census itself or intermittent national population sample surveys), which allow researchers to derive estimates of the migrant population and capture the general trend of migratory movement; the other is a specialized survey conducted in either selected migration destinations or certain migration origin communities, which enables researchers to study the characteristics of individuals with a specific migration status. However, very few efforts have been made to study migration by linking the migration origin and destination areas together and making systematic comparisons among the people from the same community but in different migration statuses.

In this study we adopt an innovative approach to investigating the impact of migration on individual outcomes. We take advantage of a new dataset on China's floating population, which

allows us to link the information on migrants in the destination and the people in their hometown community. Our data include three key population sub-groups: (1) migrants who stay in the destination; (2) return migrants; and (3) non-movers. We are mainly concerned with the economic consequences of migration in the form of changes in individual income and labor force mobility, and we seek to answer the following research questions: (1) Does migration increase one's income all else equal? (2) Does additional migration experience lead to higher income for migrants? And (3) does one's prior migration experience contribute positively to the migrant's income when s/he returns to the hometown community?

THEORIES AND HYPOTHESES

Economic Consequences of Migration

Conventional theories of migration generally suggest that there should be an economic gain for migrants and their household members. The neo-classical economic model posits that migration is primarily an individual act driven by differentials in wages or expected incomes between sectors and places but negatively affected by the migration cost, thus expecting the migrants from the agricultural sector to experience an income gain in the higher-wage urban sector (Lewis 1954; Schultz 1964; Todaro 1969). The new economics of labor migration, on the other hand, argues that migration decision is not merely an individual act, but the result of collective deliberation at household level, to diversify income sources and overcome constraints and possible failure in the local capital and insurance markets. Besides the absolute monetary gain, the households sending migrants also seek to enhance their economic standing relative to others in the community, thus reducing their sense of relative deprivation (Stark 1991).

Although these theories were initially developed out of non-China settings, scholars have successfully used them to describe and explain the labor migration movement in China. For example, Chan (forthcoming) perceives the labor migration flow between rural and urban sectors and between regions in China as a typical enactment of the Lewis' model; based on Todaro's paradigm, Rozelle et al (1999) develops a cost-benefit analytical framework to explain the nationwide variation in the rural labor's participation in long-term migration; to explain the migration behavior at micro-level, Roberts (1998) argues that migration serves as a household strategy to generate and diversify incomes.

Despite the divergence in the assumptions and propositions of these different theoretical perspectives, there is a uniform expectation that migration should lead to higher incomes for individuals and households. However, so far there has been limited empirical evidence directly supporting this view for China (Wang et al 2002). This is partly due to the lack of microdata with which one could more closely examine returns to migration, adjusting for other personal characteristics. In addition to the literature on migrant determinants, the literature on migrant adjustment or assimilation argues that after relocation and with time, migrants will experience increased income and other measures of status and well-being (White and Lindstrom, 2005) Furthermore, assessing the earnings consequence of migration on individuals would require the availability of data that enables the comparison of migrants and non-migrants with all the other characteristics being controlled for. To achieve this purpose, an origin-destination linked approach would be most appropriate.

An Origin-Destination Linked Approach

By the origin-destination linked approach, we refer to the method in which the origin community and the main destination of an established migrant flow are identified and data are collected at *both* the sending and the receiving areas. This linked strategy allows researchers to make a series of comparisons about the people and households in those two places, they are migrants or not. There are several benefits associated with this approach. Technically, it can serve to isolate a very specific migrant group and context, which can help to eliminate the confusion introduced by pooling migrants of diverse origins or destinations. After all, the migrants from one sending area may go to different places, while the migrants in a given destination may have diverse origins. One immediately utility of this origin-destination linked approach is that researchers can make a comparison between the non-migrants ("stayers") at the origin and the migrants at the destination, and then make an assessment about the effect that is solely attributable to the migration process.

This approach is especially useful in the Chinese context, as China's internal migration is characterized by a vast diversity of origins and destinations. Yet the pairing of migrant origin and destination is certainly not random, but follows distinct patterns. White and Jiang (2008) point out that China's internal migration is a largely stepwise upward movement along the urban hierarchy with the municipalities being at the top and the rural area at the bottom. Typically, migrants from rural areas tend to go to towns instead of cities and municipalities, and it is mainly those from towns that head for the cities, etc. Furthermore, the linkage between migrant origin and destination is not static, but evolves over time. Statistics from the 1990 Census, 1995 1% Population Sample Survey, and 2000 Census indicate that since the 1990s inter-provincial migration has become the dominant force of inter-county migration in China (Liang and Ma 2004; Chan forthcoming). In addition, Chan (forthcoming) also finds that while there has been a

convergence (between 1990 and 2005) of inter-provincial migration destinations into Guangdong and Zhejiang provinces, the origins have become far more diverse. Given such complex and dynamic development of migration origins and destinations, it would be necessary to isolate the migration origins and destinations in pairs when analyzing the net effects of migration.

Despite its value, few studies take the origin-destination linked approach. Most migration research tends to be conducted at either the migrant destination or the origin alone. Research conducted at destinations usually focus on the migrants' incorporation outcomes, typically by making comparisons between migrants and the local residents of the receiving area, but can tell us neither about the migrants' left-behind family members nor the migrants who have already returned home. Research conducted at the place of origin, through comparing migrants and non-migrants, can help to identify the determinants of outmigration and also assess the effects of return migration, but generally is inadequate in capturing certain key information on active migrants who are currently away from home. (This design would also miss the households in which all members have out-migrated.) To our knowledge, the only study that has taken an origin-destination linked approach in the Chinese context is Liang and Chen's (2004) work, which investigates how women have benefited from migration from other parts of Guangdong province to Shenzhen compared to men. But this study also has its limitations. First, the migrant origin-destination linkage is restricted to moves within Guangdong province, which may not be generalizable to other migrant groups given the increasing prevalence of interprovincial migration. Second, the researchers did not identify the migrants' specific origin communities and consider the differences among those communities; instead, they simply lumped together all the migrants who came from other parts of Guangdong outside the Shenzhen destination.

Accordingly, it would be very useful if we can identify an established migrant flow that crosses provincial boundaries and pinpoint both the specific community of origin and destination city. This is exactly what our study wants to accomplish. We investigate three established inter-provincial migration streams, and for each stream the specific origin community and destination city have been identified. Following the preceding discussion on the economic impact of migration, we hypothesize that—

H1: migrants shall have higher income than origin-community residents who do not migrate, all else equal

Migrants in the Urban Labor Market

Besides the effect of migration on individuals' earnings, we are also interested in the specific mechanism of income determination for migrants in the urban destination. The literature has already established that the rural migrants tend to be disadvantaged, at least initially, in the urban labor market compared to the local residents; that is, compared to the urban residents with the same background characteristics, the rural migrants usually have the less desirable blue-collar jobs, make less money, and are more likely to experience job changes. And scholars have argued that such disparity is mostly attributable to factors like institutional exclusion, labor market exploitation, segregated social networks, as well as cultural discrimination (Yang and Guo 1996; Solinger 1999; Meng and Zhang 2001; Wang et al 2002; Knights and Yueh 2004).

Besides the comparison between migrants and local residents in the receiving area, extant research also offers insights about the dynamics of income differentiation among the migrants themselves. For example, Wang and his colleagues (2002) used a representative sample of rural migrants to Shanghai and conducted a systematic analysis of the migrants' occupational

attainment and income. They found that after adjustment for the effects of gender and age, within the migrant population, significant benefits also accrue to having more education, experiencing migration to other cities, and extending their stay in the current destination. Meng and Zhang's (2001) study, also of rural migrants in Shanghai, suggests that the rate of income return to job tenure and education is actually higher for rural-origin migrants than for urban residents, because the migrants are more concentrated in the market sector where individual productivity is most valued. Knight and Yueh's (2004) study of migrants in 13 cities of 6 provinces also confirms that migrants tend to do better in the private market sector than in the state sector. In addition to the positive effects of education and job tenure on migrants' income, their research also demonstrates that these two factors can increase the migrants' job mobility, which is mostly voluntary and presumably can lead to better job search and match outcomes.

As a whole, although the rural migrants tend to be treated differently than their urban counterparts, their internal differentiation largely follows market expectations. Therefore, in this study we hypothesize that the migrants' human capital shall have a positive effect on their earnings in the urban destination. Specifically we consider two forms of human capital. One is the migrants' educational attainment. The other is their migration experience, which can be further operationalized as (a) the migration experience (duration) in the current destination and (b) the migration experience in places other than the current destination city. We argue that additional migration experience can help migrants become more informed about the urban labor market and also gain more job related skills, both of which can ultimately contribute to higher earnings. Such a view is in accordance with the general assimilation perspective. Thus, we make the following hypotheses—

H2: the duration of stay in the current destination shall have a positive effect on a migrant's income;

H3: a migrant's cumulative prior experience in other destinations shall have a positive effect on her/his income in the current destination;

Economic Consequences on Return Migrants

Another research issue we seek to engage concerns the effect of migration on return migrants' labor market outcomes back at home. Return migration is a relatively new topic in the studies of internal migration in China, and the existing research usually focuses on investigating the determinants and consequences of this phenomenon.

Regarding the determinants, a general consensus in the literature is that return migration is mostly attributable to two factors - the migrants' failure in the labor market of the urban destination and family demands back at home (Zhao 2001; Bai and Song 2002; Wang and Fan 2006).

However, there is less consensus when it comes to the consequences of return migration. Some scholars hold a very positive view about return migration. For example, Ma's (2001) study of return migrants in 119 villages of 9 provinces finds that the skills and entrepreneurial experience accrued to the migrants in the urban labor market could facilitate their occupational transition back at home from subsistence farming to commercial production. Ma also finds that the labor migration experience (form the time in destination) could also enhance the domestic decision power and autonomy of female returnees; furthermore, return migrants could play a leading role in the development of their natal communities. Murphy (2002) also documents the

active role played by returnee entrepreneurs in transferring information, boosting economic development, and building a local state corporatism in the rural communities of southern Jiangxi.

However, such positive assessment of return migration tends to be based on selective observations or selective comparison. For example, Murphy's (2002) study just focuses on returnee entrepreneurs, and Ma's (2001) examination of migration experience on returnees' occupational outcome does not make comparison with non-migrants' experience. After all, the literature suggests that return migrants tend to be negatively selected with respect to socio-demographic characteristics, and sometimes they may not be very different from the non-migrants (Wang and Fan 2006; Liang et al 2011). In particular, the returnee entrepreneurs, presumably the most successful and heralded group of return migrants, are actually quite rare, at least among the return migrants in Sichuan and Anhui provinces (Bai and Song 2002; Wang and Fan 2006). In a direct examination of the return migrants' labor market outcomes back at home, Zhao (2001) finds that although return migrants tend to invest more in productive farm machines, they are yet not more likely to have non-farm employment, nor are they more likely to be self-employed. Given such mixed views on the return migrants' labor market outcome back at hometown community, we aim to engage the debate with more empirical evidence. For this study, we hypothesis that—

H4: return migrants shall have higher income than origin-community residents who never migrated, all else equal.

DATA AND METHODS

For this paper we use the data from the 2009 Study of China's Floating Population (hereafter referred to as "the 2009 Study"). The 2009 Study was conducted by a survey team in the Renmin University of China in 2009. Funded by China's Ministry of Education, the 2009 Study was designed to investigate a series of characteristics and attitudes of migrants and their family members, including their demographic characteristics, employment, housing, health condition, family and social lives, as well as personal attitudes towards a number of issues. And the data were collected in both the migrant-sending and receiving areas.

An Origin-Destination Linked Approach to Site Selection

The 2009 Study selected three pairs of migrant-sending and receiving areas for investigation, hence six places in total (Figure 1). First, the survey team selected three major migrant-sending places. Based on the 2000 China Census, the 2005 1% Population Sample Survey, and the 2009 estimates of the emigrant population, the survey team chose three top migrant-sending provinces: Henan, Guizhou, and Hunan (also see Table 1). Then within each of the three chosen provinces, the survey team picked the top migrant-sending counties as the target migration origin area for investigation. Accordingly, they chose Hua County in Henan Province, Zunyi County in Guizhou Province, and Jiahe County in Hunan Province.

Given the fact that migrants of shared origin tend to concentrate in a few select destination places through the operation of migrant networks, the survey team chose to use the primary destination city for each aforementioned migration origin area for investigation. Based on the emigration data from the Office of Population and Family Planning in each chosen origin county, the survey team picked the following destination cities: Beijing, the capital of China, as the primary destination for migrants from Hua; Zhuji City in Zhejiang Province for migrants

from Zunyi; and Dongguan City in Guangdong Province for migrants from Jiahe. The summary data in Table 1 also confirms that Beijing, Zhejiang Province, and Guangdong Province have been the top migrant-receiving provinces in the past decade.

As Figure 1 shows, all the migrant-sending areas in this study are located in the central or western region of China, which is mainly of rural areas and dominated by agricultural production. In contrast, all the destination areas are industrial cities in the relatively more-developed eastern or coastal region: Beijing is the capital city of China; Zhuji is located to the south of Hangzhou, the capital city of Zhejiang Province, and has very developed private enterprises specializing in hardware and textile production; Dongguan is a major manufacturing center in the Pearl River Delta of Guangzhou Province, well-known for its export oriented manufacturing industries. Table 2 also shows that the sending counties are all in provinces with lower urbanization levels, while the destination cities are all in very urbanized provinces. More notably, there is a huge income gap between the sending and receiving areas—the income level of every receiving area is more than double that of the corresponding sending area. Therefore, it is almost certain that migrants leave their natal communities due to the attraction of higher wages in the destination places, which is in accordance with the neo-classical economic model.

Data Collection

Between May and July of 2009, the survey team went to the six chosen migrant origin and destination places for data collection. This was done first in the migration destination cities. In each of the three chosen destination cities, the survey teams interviewed about 600 migrants, out of which approximately 400 were from the target sending area and the other 200 were from other origin places. The migrant respondents were recruited in several steps. The first step was to

pick several major migrant neighborhoods in the city that had a concentration of the migrants from the target sending area; such neighborhoods were selected based on the estimates of migrant population by the local authorities. Then within the chosen migrant neighborhoods the survey teams relied on the assistance of local volunteers to reach adult migrants who were from the target sending area. If the selected migrants were not available or declined to participate in the study, the interviewers would pick the next available migrant to fill in. In addition to contacting the migrants at their residence, the interviewers also recruited migrants from the target sending area at the bus stops or subway stations near the chosen migrant neighborhoods. Lastly, the survey team used snowball sampling to recruit new respondents through the prior interviewees' referrals. Besides the migrants from the target sending area, the survey teams also interviewed migrants who came from other places of origin but were residing near the selected migrant neighborhoods. The respondents chosen for the study were all from different households so that each person could answer questions on behalf of the entire household without having any overlap with another person's response.

Once the data collection in the destination cities was complete, the survey teams went on to track down the migrants' family members back in their hometown, using the names and contact information (home addresses and telephone number) provided by the migrant respondents. Tracing of migrant families in their hometown was conducted mainly in the villages that sent the most migrants who had been interviewed by the survey team in the destination cities. Local officials and informants in the migrants' hometown provided crucial help to the survey team in locating the migrant households. In case a migrant household could not be located or refused to participate in the study, the survey team would pick a nearby migrant household for substitution.

In addition, the local officials and informants also helped the survey team find a number of non-migrant households for comparison purpose. Because there was only a small number of households in the selected villages that did not send family members away from home at the time of the survey, the survey team tried to find all such households and treated them as comparison group households.

The survey conducted in the target sending areas was designed to address three types of individuals: migrants' left-behind parents, migrants' left-behind spouses, and "comparison group". The first two types of individuals, "left-behind parents" and "left-behind spouses", were the family members of individuals who were away from home at the time of survey. The last type of individuals, the "comparison group" people, were persons 18 years and over and were staying in the hometown at the time of survey. They either never migrated (i.e., non-migrants) or had prior migration experience but had returned and stayed at home for at least 3 months (i.e., return migrants). Like in the destination survey, all the individuals selected for the study in the origin areas were also from different households so that each of them could also answer questions for the entire household without overlapping with other respondents.

Each of the three subject groups at the target origin areas received a different questionnaire, which contained questions targeted towards each respective group. But these questionnaires shared some common basic questions regarding the main demographics, social economic status, family relationship, and family living arrangement. In the end, the sample in each target sending area contained about 500-600 respondents, including 250 migrants' left-behind parents, 120 migrant' left-behind spouses, and about 200 individuals belonging to the "comparison group". In each sample at least 80 migrants' parents and 30 migrants' spouses can be matched to the migrants interviewed in the destination cities.

Pooled Dataset

The data used for this study is pooled from both the destination dataset (i.e., information on active migrants, those persons currently residing in a location other than their place of birth) and the origin dataset. For this study we restrict the analysis to the active migrants from the target sending areas and individuals in the comparison group only, which in turn allows us to conduct a series of comparisons among the individuals from the same origin community but with different migration status. The destination dataset contains information on 1,085 active migrants from the three target sending areas. The comparison group dataset contains information on 601 individuals from the same areas who were not active migrants at the time of survey; however, it should be noted that 338 of these individuals were return migrants who had prior migration experience, and only a minority (601-338=263) were individuals who had never migrated. This shows that members of these communities have been intensively involved in the out-migration and return migration movements. This gives us the justification to focus our analysis on the comparison of these three types of individuals from the same origin community: active migrants, return migrants, and non-migrants.

RESULTS

Descriptive Information

Table 3 provides systematic descriptive information on the active migrants, return migrants, and non-migrants from the target sending areas, comparing their major demographic and socio-economic characteristics. These migrants, both active and return, consist mainly of

men, with only 40% of the migrant population being female. Active migrants tend to be younger than return migrants and non-migrants, and thus are more likely to be single (27.3%) than the other two groups (16.3% and 15.2% respectively). Young and single migrants naturally face less pressure for family reunion and so are less likely to return home, and of course, younger migrants have had less exposure to the probability of return migration. As to the educational attainment, interestingly the active migrants appear to be the least educated group if measured by the percentage having college education. This very likely reflects the fact that the migrants who remain at the destination are mainly those who are employed in the secondary sector, which does not require advanced education. Indeed, the occupation and self-employment status distribution confirms that the active migrants are predominantly hired labor, working as manufacturing or service workers. Almost by definition, the number of active migrants engaged in agricultural work is minimum, which represents the biggest distinction from those who reside in the origin communities.

In contrast, the return migrants are actually quite well-educated, with more than 20% of them having some kind of post-secondary education; in fact, the return migrants have the largest share of people with secondary and post-secondary education. This directly contradicts the findings in existing studies that return migrants are negative selected. The fact that so many well-educated migrants came back home suggests that either there are other obstacles than educational credential requirement that hinder these migrants' long-term settlement in the destination cities or there are other non-labor market factors that pull these migrants back home. Indeed, the tabulation of these returnees' report of major reasons for return migration indicates that more than 40% of all the return migrants came home primarily because of some kind of family demand, which is consistent with existing studies (Zhao 2001; Wang and Fan 2006). Specifically

among them, 22.2% reported that they needed to come home to take care of other family members, typically the elderly and children, 7.7% came home to get married or to give birth to babies, another 7.7% returned to help with the family's farmwork, and 4.1% came back to build houses. Of course, there were also many returnees who reported labor market factors as their primary reason for return. For example, 17.5% reported that they came back because it was difficult to find work in the destination; 8.9% reported that the pay was low in the destination and another 3.3% complained that work in the destination was too strenuous; 9.2% wanted to become self-employed back at home, and another 3.6% believed it was more convenient to work near home; 4.1% came home due to sickness or injury, and 1.8% came home because they felt they were getting old. As a whole, although some of the returnees can be regarded as a result of negative selection, the majority identified non-economic reasons or their preference to work near home.

When we look at the return migrants' labor market performance in the hometown community, the situation is also quite complex. On the one hand, we can see that many return migrants are doing better than their non-migrant counterpart in the local community, being more likely to be self-employed or have the more prestigious white-collar and skilled jobs. This probably can be attributable to the work experience they acquired in the cities or the financial capital they accumulated there. On the other hand, however, the return migrants also have the highest unemployment rate at 12.43%. We argue that there can be two possible scenarios. One is the mismatch between the returnees' skill and aspiration and the available jobs in the hometown labor market. For example, among all the unemployed returnees, 45.2% of them came back mainly because they had some kinds of complaints about the work in the destination or because they had other work ambition back home. Apparently, these people were hoping to do better by

coming home but fail to do so. It is possible that these return migrants, after taking higher-wage non-farm jobs in the cities, become unwilling to go back to farm work or accept other lower-wage jobs in the hometown labor market. Indeed, we can see that the percentage of return migrants who engage farm work is less than half of the number among the non-migrants in the same communities. The other scenario can be related to their obligation to family demand. For example, 19% of the unemployed returnees came home in order to take care of other family members and another 9.5% came home to have babies. It is possible that these people are not actively looking for work while fulfilling their family obligations. As a whole, the return migrants seem to have a mixed composition of both apparently successful and apparently unsuccessful individuals.

In terms of personal income, active migrants in the destination cities tend to earn the most, with more than 60% of them making more than 1200 Yuan per month, while for the return migrants and non-migrants the corresponding percentages are only 28% and 25%, respectively. Therefore, it seems certain that migration has a very positive impact on individual income, which is consistent with our expectation. This observation can also be corroborated by the respondents' report of their primary reasons for migration. Among the active migrants, the overwhelming majority reported that they came to the city mainly for economic gains. Specifically, 48.3% of all active migrants mentioned they migrated primarily to increase their income, 17.3% said they came here because their hometown was too poor, and another 12.6% reported that they left home mainly because there wasn't enough farmland to support their living. On the other hand, we do not observe much difference between the return migrants' income and non-migrants' income from the summary tabulations. We turn to multivariate analysis to study the income dynamics of these migrants.

Statistical Models

To assess the net effect of migration on income, we applied a series of Ordinary Least Square (OLS) regression models to predict income for individuals with different migration status. The dependent variable is log-transformed individual monthly income. Because some respondents reported zero monthly income, we add one Yuan to all the original reported income numbers before the log transformation is executed. The key independent variable is migration status (active migrants, return migrants, and non-migrants). Other socio-demographic factors are also included in the models as control variables. As shown in Table 4, we first estimate the most basic model containing only the migration status variable. Then we estimate the main effect model controlling for covariates that were predetermined before any migration activity (lessening the chance of endogeneity bias in estimates). These variables include gender, age and its squared term, education, *hukou* status, household size, and area dummy variable denoting the specific migrant stream. Model 3 includes an interaction term between migration status and origin area, which produces a group *p* value less than 0.1. Model 4 adds new variables that are less likely to be exogenous to migration status, including marital status, self-employment status, and occupation. Model 5 is the extended model of Model 4 by adding significant interaction terms (group *p* value < 0.1) between these variables and migration status. Out of the total 1,686 persons in the pooled dataset, 329 have at least one missing value, most likely on income (128 observations) and family farmland size (194 observations). Multiple imputation using the MCMC (Markov Chain Monte Carlo) method under the assumption of missing at random (MAR) was applied in order to preserve statistical power and also to avoid the biases in complete case analysis.

As to the results of these OLS regression models, first of all, we can see that migration is associated with an increase in one's income in four out of five models, as active migrants earn significantly more money than return migrants and non-migrants. And this main effect is quite robust with or without controlling for other socio-demographic covariates and is sustained even when we include interaction effects involving migration status. However, migration does not seem to benefit those who have returned to their origin communities. In fact, the negative coefficients in most models (Models 1-4) suggest that those who had prior migration experience tend to earn less than even the non-migrants. As discussed in the descriptive result section, this is likely to be attributable to presence of many unemployed returnees and returnees who have family demand to fulfill. Indeed, once the interaction between migration status and occupation is introduced into the model (Model 5), the main effect of return migration is no longer statistically significant but remains negative.

Another notable finding is the regional (or stream) difference in migrant income. The effect of interaction between migration status and migrant stream identifier in Models 3-5 indicates that active migrants from Jiahe thus working in Dongguan tend to have the highest income. This is consistent with the fact that Dongguan is a very developed industrial city and boasts the highest per capita income among all the three destination cities. We have evidence, then of migrants gathering information about differential opportunities and directing themselves to cities with the highest prevailing wages. It is also of interest to note that return migrants in Jiahe also tend to have relatively higher income (Models 3-4). A closer look at the occupation composition of the return migrants in Jiahe reveals that very few of them actually engage in agricultural production, and compared to other sending areas the return migrants in Jiahe are more likely to work as skilled workers or white-collar workers.

Among other variables, gender, education, and occupation also have significant effects on income, mostly in expected ways. Men tend to earn more than women; individuals having high school education or above also tend to have higher income although the advantage of those college-educated is not statistically significant. The occupation variable's main effect indicates that people in managerial positions are likely to have higher income, but the interaction effects suggest that the migrants who work as entrepreneurs or mangers or skilled workers in the destination cities tend to be disadvantaged in their earnings. This seems to imply that these may not be the migrants' niche jobs in the cities; instead, migrants are more likely to be economically successful at manual laborer's jobs. This further underscores the labor market segregation in the cities.

In a separate analysis as shown in Table 5, we have also run OLS regression models predicting individual income for active migrants only, as we want to test whether additional migration experience can contribute positively to one's income. And we have found some evidence that migrants who have stayed in the current destination city for a longer period of time tend to have higher earnings. This suggests that by spending additional time in the destination the migrants are likely to have acquired new skills or have become more familiar with the labor market condition in the destination so that s/he can try to improve her/his economic situation accordingly. But it should be noted that this positive effect of additional stay is non-monotonic, as migrants tend to reach their highest earning capacity during their 6^{th} – 10^{th} year in the destination, but further stay would not bring more income. It should also be noted that the number of job changes experienced by the migrants in the current destination city does not produce any significant effect on their income. This implies that the positive effect of additional stay in the current destination is unlikely to be attributable to migrants' cumulative job transition

movements but is more likely to be associated with migrants' accumulation of experience or acquisition of new skills from the same job they have worked. Finally, we find that the migrants' prior experience in other destination places does not affect their income in the current destination. This suggests that the migration-related human capital acquired by the migrants tend to be location specific and is not easily transferrable to a different place, which implies that the migrants' prospect of social mobility tend to be geographically restricted.

CONCLUSION

In this study we seek to answer the question of how migration can affect one's economic well-being within the context of China, and we adopt an innovative method in assessing the impact of migration experience on individual incomes. By collecting and analyzing data from both the origin community and the destination city for three established interprovincial migration streams in China, we are able to make a series of systematic comparisons, between non-migrants and migrants, between non-migrants and return migrants, and among the migrants themselves, which allows us to make a reliable estimate of the migration effect.

The primary finding of this study, which affirms the prevailing assumption and expectation, is that migration does increase one's income, and this is observed for all the three migrant groups under this study. Besides the substantial wage differentials between the sending and receiving areas of migration, the migrants also gained higher status employment, moving from agricultural jobs into the better-paying non-farm jobs, typically in manufacturing and services.

In addition, we have found that extended stay in the current destination also tends to increase the migrants' income, up to a certain duration, an effect that's largely consistent with the assimilation perspective. However, the benefit of having additional experience in the city appears to be geographically constrained, as the migrants' prior experience in other destinations have no impact on their income in the current destination city, suggesting that the inter-regional disparities pose additional obstacles for migrants' economic mobility in urban China.

We have also sought to assess the effect of migration on the return migrants' labor market outcomes back in their hometown communities. This question can be a very important one at the present time, because return migration in China has been on the rise and in the migrant-sending areas under this study the return migrants almost have a dominant presence in the natal community. However, despite the generally positive effect of migration on active migrants' income, we find that such effect is not necessarily felt by those who return home. Our multivariate models suggest that return migrants tend to have lower income than those who never migrated, after controlling for other factors. One tempting explanation for this discrepancy from the extant literature would be that return migrants tend to be negative selected among those who have migrated and they are likely to be disadvantaged in their socio-demographic characteristics. But we find this explanation does not hold for our study, because in the areas we investigate the return migrants actually have higher educational attainment than the non-migrants and active migrants. This leads us to suspect that the lower income among the return migrants is attributable to factors other than their human capital.

The return migrants' occupational attainment is of particular interest. It appears that the return migrants' occupations have a bifurcated composition: many return migrants are actually quite successful, being self-employed or having white-collar and skilled jobs, but some return

migrants turn out to be jobless. In fact, the return migrants in our study, despite their higher educational attainment, have higher unemployment rates than both the active migrants and non-migrants. One plausible explanation is a mismatch between the return migrants' skills and aspirations and the available jobs in their natal community. That is, having gained work experience in the cities and enjoyed the higher wages there, the return migrants may no longer be willing to go back to farm work or accept other low-wage jobs in their hometown. The other possible factor is the family demand imposed on the return migrants. Given the fact that these migrants are drawn back home almost as much by family demand as by labor market consideration, it is possible that the return migrants' labor market performance becomes significantly restricted by their family obligations, which in some cases may even preclude them from participating in the labor force at all. In that sense, the income disadvantage accrued to return migrants could be attributable to a different kind of selectivity, not of human capital or labor market aspiration, but of family demand.

Accordingly, we argue that the returnee population may be viewed as a collection of three selective groups: the "success" returnees who are able to translate their migration related experience into labor market progress back in their hometown community; the "failure" returnees who have difficulty adapting to the labor market at home; and family-driven returnees whose labor market performance is more or less constrained.

Our finding can have significant policy implications for both the migrant-sending and receiving areas. In the migrant-sending communities, given the sheer magnitude of return migration, an increasingly pressing issue is the deployment of these migrants in the local labor market. Clearly it would be unrealistic to expect them all to go back to farm work. In fact, recent studies suggest that the new-generation migrants might never have any agricultural work

experience before they leave their home. Given such reality, local governments might consider policies that would enhance the growth of alternative job opportunities, jobs that would put returnees' skills and experience into good use. Extant studies suggest that entrepreneurship should be encouraged with support from the local government, because that would create new job opportunities for both return migrants and non-migrants. At the same time, local governments should also pay attention to the issue of family care and support for the left-behind family members of those who migrate to the cities. It would be certainly be very helpful and reassuring for the migrants if a comprehensive support system were put in place in the sending community so that their left-behind family members and farm land could be taken good care of.

From the perspective of the migrant-receiving destination areas, it should be recognized that many migrants, after working in the city for a period of time and receiving exposure to the urban life style, might aspire to settle down in the city permanently rather than going back to their hometown community. In that sense, the city governments might consider policies designed to accommodate the needs of these migrants and accepting them as full members of the urban community rather than treating them as labor in demand only.

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Figure 1. The 2009 Study Sites

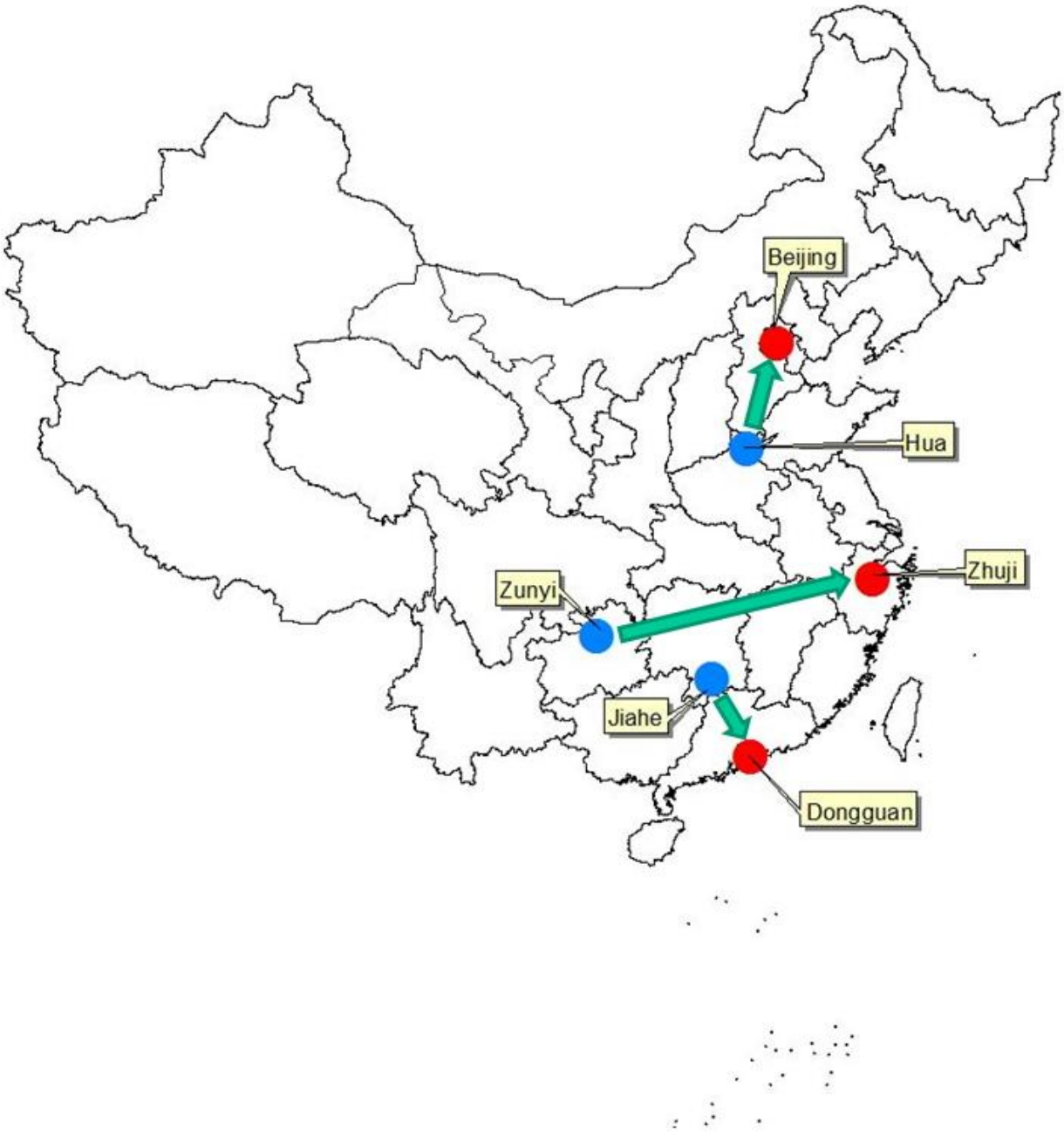

Table 1. China Population Size and Proportion (%) by Province, Based on Data from Census 2000, 2005 1% Population Sample Survey, and Census 2010[1]

Province	Census 2000		2005 1% Population Sample Survey	Census 2010		Proportion Difference between 2010 and 2000[3]
	Population size[2]	Proportion (%)	Proportion (%)	Population size	Proportion (%)	
Guangdong	85.23	**6.83**	**7.16**	104.30	**7.79**	**0.96**
Shanghai	16.41	1.32	1.39	23.02	1.72	0.40
Beijing	13.57	**1.09**	**1.20**	19.61	**1.46**	**0.37**
Zhejiang	45.93	**3.69**	**3.82**	54.43	**4.06**	**0.37**
Tianjin	9.85	0.79	0.81	12.94	0.97	0.18
Xinjiang	18.46	1.52	1.56	21.81	1.63	0.11
Shanxi	32.47	2.60	2.61	35.71	2.67	0.07
Jiangxi	40.40	3.27	3.36	44.57	3.33	0.06
Yunnan	42.36	3.39	3.47	45.97	3.43	0.04
Hebei	66.68	5.33	5.34	71.85	5.36	0.03
Hainan	7.56	0.62	0.65	8.67	0.65	0.03
Ningxia	5.49	0.44	0.46	6.30	0.47	0.03
Xizang	2.62	0.21	0.22	3.00	0.22	0.01
Qinghai	4.82	0.41	0.42	5.63	0.42	0.01
Fujian	34.10	2.74	2.75	36.89	2.75	0.01
Jiangsu	73.04	5.88	5.83	78.66	5.87	-0.01
Shandong	89.97	7.17	7.21	95.79	7.15	-0.02
Neimenggu	23.32	1.88	1.86	24.71	1.84	-0.04
Heilongjiang	36.24	2.91	2.98	38.31	2.86	-0.05
Shaanxi	35.37	2.85	2.90	37.33	2.79	-0.06
Liaoning	41.82	3.35	3.29	43.75	3.27	-0.08
Guangxi	43.85	3.55	3.63	46.03	3.44	-0.11
Gansu	25.12	2.02	2.02	25.58	1.91	-0.11
Jilin	26.80	2.16	2.12	27.46	2.05	-0.11
Hunan	63.27	**5.09**	**4.93**	65.68	**4.90**	**-0.19**
Guizhou	35.25	**2.78**	**2.91**	34.75	**2.59**	**-0.19**
Anhui	59.00	4.73	4.77	59.50	4.44	-0.29
Henan	91.24	**7.31**	**7.31**	94.02	**7.02**	**-0.29**
Chongqing	30.51	2.44	2.18	28.85	2.15	-0.29
Hubei	59.51	4.76	4.45	57.24	4.27	-0.49
Sichuan	82.35	6.58	6.40	80.42	6.00	-0.58
Total	1242.61	100	100	1339.72	100	

1: Data sources: column 1 is from "2000 Population Census", National Bureau of Statistics of China. The population size in 2000 is preliminary data. Columns 2, 4, and 5 are from "2010 China's Sixth Census Main Data Reports", http://www.stats.gov.cn/tjgb/rkpcgb/qgrkpcgb/t20110429_402722510.htm. Column 3 is the estimate from "2005 1% Population Sample Survey Data".
2: in millions.
3: The change in proportion is mostly due to migration based on stable birth and death rates in each province.

Table 2. Urbanization Level and Per Capita Income in Migrant-Sending and Receiving Areas

Migrant-Sending Areas				Migrant-Receiving Areas			
Origin County	Provincial Urbanization Level (%)[1]	Per Capita Income [2]		Destination City	Provincial Urbanization Level (%)[1]	Per Capita Income [2]	
		Urban	Rural			Urban	Rural
Hua[3]	37.70	11,489	4,766	Beijing	85.00	26,738	11,986
Zunyi	29.89	13,806	3,661	Zhuji	57.90	27,897	12,762
Jiahe	43.20	12,319	4,942	Dongguan	63.40	33,045	13,064

1: Data Sources: 2010 China Statistics Yearbook，
http://www.stats.gov.cn/tjsj/ndsj/2010/indexch.htm
2: Data Source: “2009 Economic and Social Development Statistics Report” (Electronic Version).
3: Data source: “2010 Hua County Government Work Report”.

Table 3. Descriptive Information about Active Migrants, Return Migrants and Non-Migrants in the 2009 Study Dataset

Variables	Active migrants in destination cities (percentage)	Return migrants in sending areas (percentage)	Non-migrants in sending areas (percentage)	Row total
Migration stream				
Hua → Beijing	31.43	24.85	51.71	33.27
Jiahe → Dongguan	37.51	41.12	19.39	35.41
Zunyi → Zhuji	31.06	34.02	28.90	31.32
Numbers of observations	1085	338	263	1686
Age group				
15-19	9.59	2.96	3.80	7.36
20-29	31.73	27.22	17.11	28.55
30-39	27.68	33.73	24.71	28.43
40-49	24.82	26.63	38.02	27.24
50-59	5.72	9.47	14.83	7.89
60+	0.46	0.00	1.52	0.53
Numbers of observations	1084	338	263	1685
Gender				
Male	63.59	57.40	46.77	59.73
Female	36.41	42.60	53.23	40.27
Total	1085	338	263	1686
Education level				
Elementary school or less	3.97	3.25	5.70	4.09
Junior middle school	25.83	21.89	27.38	25.28
Senior high school	58.86	51.48	39.92	54.42
Junior college	9.96	17.75	18.63	12.88
College and above	1.38	5.62	8.37	3.32
Numbers of observations	1084	338	263	1685
Household registration status (*hukou*)				
Rural	95.93	92.58	92.37	94.70
Urban	4.07	7.42	7.63	5.30
Numbers of observations	1081	337	262	1680
Marital status				
Single	27.28	16.27	15.21	23.19
Married	70.60	80.77	80.99	74.26
Divorced or widowed	2.12	2.96	3.80	2.55
Numbers of observations	1085	338	263	1686
Occupation				
Managerial	2.95	14.20	11.03	6.47
Clerical	1.11	4.73	3.04	2.14
Skilled worker	35.42	8.28)	3.80	25.04
Un-skilled worker	33.39	40.24	33.84	34.84
Services	16.42	4.44	9.51	12.94
Peasants and other employed	0.46	15.68	34.22	8.78
Unemployed	10.24	12.43	4.56	9.79
Numbers of observations	1084	338	263	1685
Self-employment status				
Self-employed with employees	3.13	3.55	2.28	3.06
Self-employed without employees	3.50	50.59	41.44	18.86
Not self-employed	93.36	45.86	56.27	78.05
Numbers of observations	1085	338	263	1686
Household size				
<=2	4.55	6.25	9.13	5.63
3	13.28	17.26	17.87	14.82
4	31.40	36.31	31.18	32.37
5	24.48	22.02	20.53	23.35
6	15.18	11.01	14.45	14.22
>=7	11.10	7.14	6.84	9.62
Numbers of observations	1054	336	263	1653
Individual monthly income (Yuan)				
0-600	10.99	47.42	46.27	24.45
600-1200	24.44	24.32	29.02	25.16
1200-1800	33.57	15.20	13.33	26.38
1800-60000	31.01	13.07	11.37	24.01
Numbers of observations	974	329	255	1558

Table 4. Coefficients of OLS Regression Models Predicting Income for Individuals with Different Migration Status

Variables	Coefficients				
	Model 1	Model 2	Model 3	Model 4	Model 5
Migration status (Ref: non-migrants)					
Active migrants	1.7585****	1.8147****	1.2839****	0.4370	1.8269**
Return migrants	-0.6694****	-0.6641***	-1.0080***	-0.9500**	-0.7455
Male		0.6586****	0.7132****	0.5732****	0.5519****
Age		0.1240***	0.1152**	0.0943*	0.1039*
Age squared		-0.0019****	-0.0017***	-0.0014*	-0.0015**
Education (Ref: Elementary school or less)					
Junior middle school		0.0953	0.1161	0.0535	0.0504
Senior high school		0.6112**	0.6319***	0.5867**	0.6361***
College or above		0.6093	0.6234	0.4519	0.5960
Hukou status (Ref: rural)					
Urban		0.3895	0.3325	0.1905	0.1822
Log-transformed family farm size		0.0632	0.1004	0.1275	0.1199
Household size		-0.0249	-0.0317	-0.0368	-0.0259
Migration stream (Reference: Hua → Beijing)					
Jiahe → Dongguan		-0.5590**	-2.2477****	-2.7584****	-2.9317****
Zunyi → Zhuji		0.1320	0.0828	-0.4348	-0.6309
Interactions between migration status and other predetermined covariates					
With sending areas					
Active migrants *Jiahe			2.0417****	2.8274****	2.7569****
Active migrants *Zunyi			0.2325	0.9207*	1.0110*
Return migrants*Jiahe			1.8065****	1.6680****	0.9906
Return migrants*Zunyi			-0.0579	-0.1446	-0.7776
Marital status (Ref: single)					
Married				0.0379	0.4737
Divorced or widowed				-0.0649	-1.0836
Self-employment status (Ref: not self-employed)					
Self-employed with employees				0.3298	2.4164**
Self-employed without employees				-0.2239	0.3528
Occupation (ref: unskilled worker)					
Managerial				1.2539****	1.7175**
Clerical				1.0669**	1.0555
Skilled worker				0.3390*	2.6525**
Services				0.4435*	1.2084*

Others				-1.0823***	-0.4866
Interactions between migration status and endogenous variables					
With marital status					
Active migrants*married					-0.6048
Active migrants*widow					1.0211
Return migrants*married					0.2934
Return migrants*widow					2.5301*
With self-employment status					
Active migrants*self-employed with employees					-2.5025*
Active migrants*self-employed without employees					-0.8576
Return migrants*self-employed with employees					-0.8719
Return migrants*self-employed without employees					0.1946
With occupation					
Active migrants*managerial					-1.3061*
Active migrants*clerical					-1.0473
Active migrants*skilled worker					-2.6654**
Active migrants*service worker					-1.0101
Active migrants*others					-0.1296
Return migrants*managerial					0.1755
Return migrants*clerical					1.8236
Return migrants*skilled worker					-0.0255
Return migrants*service worker					0.0036
Return migrants*Others					-0.8440
Constant term	5.1271****	2.8798****	3.3004****	4.2980****	3.1045**
N	1686	1686	1686	1686	1686

****: p=0.0000
***: p<=0.001
**:p<=0.01
*p:<=0.05
†p<=0.10

Table 5. Coefficients of OLS Regression Models Predicting Income for Active Migrants

Variables	Coefficients		
	Model 1	**Model 2**	**Model 3**
Male	0.4223****	0.4298****	0.4222***
Age	0.0380	0.0385	0.0510
Age squared	-0.0006	-0.0006	-0.0008
Education (Ref: Elementary school or less)			
Junior middle school	0.0760	0.0809	0.0847
Senior high school	0.3625*	0.3635*	0.3381†
College or above	0.6427	0.6436	0.5147
Hukou status (Ref: rural)			
Urban	0.0609	0.0612	0.0425
Migration stream (Ref: Hua → Beijing)			
Jiahe → Dongguan	-0.3296*	-0.3266*	-0.2926†
Zunyi → Zhuji	0.2057	0.2286†	0.2782*
Length of stay in the current destination (Ref: less than 6 months)			
6 months – 2 years	0.1852	0.1937	0.1910
3 - 5 years	0.2915†	0.3094†	0.3012†
6 - 10 years	0.2923†	0.3301*	0.3315*
10+ years	0.0434	0.0887	0.0962
Number of job changes in the destination (Ref: no job change)			
1 - 2 job changes		-0.0216	-0.0250
3+ job changes		-0.1433	-0.1424
Previously migrated to other destinations	0.0778	0.0821	0.0686
Marital status (Ref: single)			
Married			-0.0461
Divorced or widowed			-0.0005
Self-employment status (Ref: not self-employed)			
Self-employed with employees			-0.0743
Self-employed without employees			-0.4833†
Occupation (ref: unskilled worker)			
Managerial			0.1606
Clerical			0.4781
Skilled worker			0.0330
Services			0.2544†
Others			0.6477
Constant term	5.9076****	5.8960****	5.6364****
N	935	935	935

****: p=0.0000
***: p<=0.001
**:p<=0.01
*p:<=0.05
†p<=0.10