Chapter 5

Cities and Mobility of Talent in East Asia: A Literature Survey

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1. Introduction

The aim of this paper is as follows. I investigate the stylized facts about urbanization and urban systems in East Asia. I investigate the facts about rural-urban migration and urban primacy in East Asia. I investigate the facts relating international migration in East Asia. I investigate the facts about ethnic networks in commerce and business in East Asia. Based on a first look at the data, this paper provides the simple framework (1) to understand the domestic and international migration mechanisms in the presence of communication and transport costs; (2) to understand the mechanisms of migrants' ethnic network formation in the presence of communication and transport costs. This framework is useful to build a theoretical model of heterogeneous workers/heterogeneous employers that can address the relationship between the different situations of urban labor market and costs of international migration. Such class of theoretical model is also useful to build an empirical model studying the role of moving costs and match frictions in the different immigration policy that can guide policy making and policy evaluation. I provide an example to shape our theoretical framework; the process of Chinatown formation in East Asia. Case studies are drawn from Singapore, Penang, Bangkok, and Jakarta. In conclusion, we aim to summarize the facts about urbanization and migration in several cities in East Asia and explain the facts utilizing the urban economics, dynamic model of knowledge linkages, and labor market networks utilizing the comparison of Chinatowns.

Labor mobility is an important element of the processes of job creation and destruction at the micro and macro economic level. Labor market structure has been measured and investigated in terms of its job flows including job and worker reallocation. Labor mobility analysis plays an important role in modern labor and macro economics because we can shape a public policy to cultivate youth labor market. Most such analyses have focused on friction or mismatches based on individual and market characteristics. Locations, timing, and ways of meeting are critical elements. These are apparent problems especially in developing economies. Recently, there has been wide and renewed interest in the relationship between

local labor market conditions and job flows. Understanding the location and timing of available jobs is crucial to assess the impacts of labor market conditions of entry, exit, and staying. However, equilibrium search frictions and model of mismatch suggest that the aggregate level of job flows determines urban labor market conditions. Empirical labor economic studies have centered upon the role of cities in the job search – matching process. Cities with more residents are considered to be the main venues of job search activities, especially for new immigrants, new graduates, and newly displaced job-seekers. Cities with more residents attract both more skilled workers and work establishments. In addition, these large cities seem to host concentrations of unskilled workers. The role of cities with larger populations in the transition from non-employment to employment or the transition from lower wages to higher wages remains controversial.

Evidences on job and worker flows have been changed the labor market perspective. Economists' focus has shifted out the determination of establishments' opening, closure, expansion, and contraction from everything we have understood the labor market. However, we have also focused to the determination of labor turnover from job to job as well as transition from non-employment to employment and from employment to non-employment. Public policy to the labor market should be changed from understanding the level of unemployment/vacancy into studying the process of mobility. In particular, studying the labor mobility between employment and non-employment is a center for an active labor market policy. However, since macroeconomic theory does not suggest how we can design public policy about active labor market into evidence based policy making. One hopeful approach is to learn from micro econometric study. Active labor market policy based on micro econometric evidence changes the way we think about job and worker heterogeneity, that is, location of available jobs and the way to available jobs.

The organization of this paper is as follows. Section 2 presents the source of urban wage premium to consider the determinants of rural-urban migration. Section 3 shows the effect of recession on labor mobility to examine the determinants of rural-urban and international migration from declining to booming regions. These sections analyze the location choice for immigrants. On the other hand, section 4 describes the second stage for immigrants, that is, the process of job search and matching in the new place. Based on these frameworks to understand immigrants' transition and catching-up process, section 5 presents an appropriate comparative case study about Chinatown in East Asia. Finally, I conclude this literature

survey in section 6. Remaining and future research issues are shown in this section.

2. Urban as the Magnet of Immigration

2.1 Pooling People and Knowledge Spillovers

Recently, the causal relationship between the returns to unobserved heterogeneity and location decisions in the cities has been examined. Duranton and Puga (2004) and Moretti (2004a) survey several models that is consistent with the positive relationship between skills and choice of locations. One approach is to detect the improvement of the productivity through the pecuniary externalities between the workers-firms matching. This effect is resulting from matching and agglomeration economies in the cities. This is sticky, city-specific, and difficult to move. Helsley and Strange (1990) studies matching between horizontally differentiated skills and firm technologies. The gap between skills and technologies becomes smaller and smaller due to agglomeration economies based on their “circle model.” Thanks to the larger market, the productivity of the matches between skills and technologies achieve extensive improvement. This effect reinforces agglomeration of the workers and firms in the specific city. On the other hand, Wheeler (2001) focuses on vertically differentiated skills and technologies. He showed that agglomeration economies foster earnings inequality in the cities between workers with vertically differentiated skills. Acemoglu (1996) develops the model for complementarities between investment in education of workers and investment in physical capital of firms. The optimal level of physical capital investment for firms depends on the level of available human capital of workers in each city because he assumed the complementarities and high moving costs between the cities. Rauch (1993) shows the correlation between local average level of human capital in each city and earnings for workers using U.S. data. Acemoglu and Angrist (2000) and Moretti (2004a, b, c) are recent empirical examinations of human capital externalities in the cities due to complementarities between skilled and unskilled workers in U.S. cities. They use wage equations that includes upward bias of the human capital externalities, and thus concluded that increase in skilled worker's share in the cities may positively affect productivity of unskilled workers. Alternatively, Ciccone and Peri (2006) shows there is no evidence of significant average-schooling externalities between 1970 and 1990 in U.S. cities and states.

It is also important to note the productivity spillovers through the technological

externalities between individuals in the cities. This type of spillovers often occurs in non-market interactions between skills and locations. Lucas (1988) refers to the denser areas like New York City as the engine of growth based on Jane Jacobs' seminal works on Manhattan, New York City. Glaeser and Scheinkman (2002) overviews the models of non-market interactions in labor and public economics. Economists have been studied the role of the learning from others and the game-theoretic aspects of the informational transmissions between individuals. The representative and fundamental works of this research line is made by Bikhchandani, Hirsleifer, and Welch (1992), Banerjee (1992), Banerjee (1993), and Ellison and Fudenberg (1993). They show that the number of equilibrium can be characterized the information spillovers among agents. Empirical studies also have been affected by modeling the information spillovers. Case and Katz (1991) studied the effects of family background and neighborhood peers on the behaviors of low-income Boston inner-city youths. They found that the behaviors of neighborhood peers appear to substantially affect youth behaviors, for crime, drug and alcohol use, church attendance, and the propensity of youths to be out of school and out of work. Contagion models of neighborhood effects were suggested. The basic references are Besley and Case (1994), Foster and Rosenzweig (1995), Munshi (2004), and Yamauchi (2006). These are important works to empirically identify the pathways of neighborhood effects through social learning on investment in technology adoption and child schooling. Application to the prevalence of crime behaviors is studied by Glaeser, Sacerdote, and Scheinkman (1996).

2.2 Evidences on Decision Process of Immigration

Geographic mobility from rural to urban areas and return migration to rural areas plays an important role for understanding labor market structure of developing economies. In particular, Thailand or other East Asian countries are suitable to make explorations into the problem of migration streams. Economic geography, for example, the urban primacy, concentration of population in a megalopolis, and urbanization of Thailand or other East Asian countries contrasts clearly with Europe with many medium sized cities. This is especially useful not only for comparing theories but also for comparing the empirical results of related literatures using U.S. dataset.

Studying labor mobility from rural to urban areas and exit behavior from the urban to rural areas provides detailed information about job reallocation in cities. Moreover, we can

shape the relationship between labor mobility and characteristics of new created jobs in the cities into active labor market policy. Evidence of a positive selection for new entrants to urban areas from rural areas also supports findings of Borjas et al. (1992). However, evidence of negative self-selection for newly exited residents to rural areas from urban areas does not support findings of Glaeser and Mare (2001) and Gould (2006). Labor market structures including economic geography characterize whether the accumulated human capital in the cities is transferable back to the rural areas.

Lucas (2004) emphasizes the role of cities as location that new immigrants from rural-to-urban areas can accumulate the skills suitable to modern production technologies. This theory suggests that rural-urban migration is experience goods as Glaeser and Mare (2001). They study why workers earn more in cities than rural areas after controlling for all of observed characteristics. Many theories offer themselves as good explanation of this empirical question: (1) workers in cities have higher observed and unobserved abilities; (2) firms in cities have higher firm-specific unobserved rents; (3) thick market externalities in matching between jobs and workers; (4) working in cities leads to foster human capital through the knowledge and information spillover. Glaeser and Mare (2001) utilizes the migrants from non-urban areas to urban areas to examine whether cities make workers more productive. They found that migrants in urban areas earn 33% more than non-urban areas. They also found that migrants from urban to non-urban areas experienced less wage decline in non-urban areas comparing to those of the stayers in non-urban areas. Recently, Gould (2006) has analyzed structurally the sources of selection and endogeneity into migration decisions as in the setting of Glaeser and Mare (2001). He also found that experience in cities can help foster human capital accumulation at least for white-collar work as Glaeser and Mare (2001) after controlling for the selection bias and endogeneity in each migration stream and wage determination.

Based on Glaeser and Mare (2001), the explanations that (1) workers in cities have higher observed and unobserved abilities; (2) firms in cities have higher unobserved rents are consistent with observed wage being higher in cities than rural areas. The first is derived from the selection processes among workers across local labor markets. High able workers stay and move into the cities if the returns to ability are higher in the cities. However, low able workers stay and move into the rural areas because the land rent is higher in the cities. Second explanation is also derived from the lower production costs in the cities because scale

economies. Firms with high technology also survive the competition in the cities. These explanations treat all the sources of the returns to unobserved heterogeneity (in abilities and technologies) exogenous. If we control for the selection processes of observed and unobserved abilities of workers and firms' characteristics, the urban wage premium should disappear.

The most important difference in the returns to human capital between labor market pooling model and knowledge spillovers is whether human capital is transferable between the locations or not. Since job and worker matching is highly localized in the cities, labor market pooling model is rarely informative about human capital transfers in the other cities. However, human capital accumulation through knowledge spillovers suggests that the accumulated human capital in the cities is transferable back to the other areas. I introduce some empirical studies about selection on observable and unobservable. First, Borjas, Bronars, and Trejo (1992) examines regional differences in the returns to skills in U.S.: cities that pay higher returns to skills attract more skilled workers than cities that pay lower returns. Based on the estimating the effect of skills on migration rates (mover/stayer decisions) and the effect of skills on the choice of destination, they found that both the size and skill composition of interstate migration flows are explained by regional differences in the returns to skills. This means region that pay higher returns to skills have more wage dispersion in the region than region that pays lower returns. Their methodology and findings have become our benchmark. Second, after controlling the selectivity, Tunali (2000) examines the rationality hypothesis: both movers and stayers chose the location in which they had comparative advantage using data from Turkey. However, he found that the estimated gain from moving is negative for a substantial portion of migrants, while a minority achieves very high returns/success. He estimated the five parameters of interests: (1) selection of migrants; (2) selection of stayers; (3) returns to migration; (4) returns to staying; and (5) earnings differentials between regions. This enables us to obtain results with robust selectivity correction. If the pecuniary return to geographic mobility is lower for a substantial portion of migrants, there remains a possibility of human capital accumulation in the cities. Third, subsequent to the study of robust selectivity correction, Dahl (2002) introduces new approach: semi-parametric estimation of the selection model into interstate mobility in U.S. Empirical results suggest that self-selection of higher educated migrants to states with higher returns to education generally leads to upward bias in OLS estimates of the returns to education. His testing a Roy model

with multiple labor market concluded that migrants respond to differences in the return to education and amenities across labor markets. Yankow (2003) also finds that highly educated workers experience substantial returns to migration due to between-job wage change in new destination. His methodology is quite interesting: estimating the between-job wage growth in each region. This result suggested that pecuniary returns to migration for high educated mean the between-job wage growth. Between-job wage growth is often resulting from learning about match quality. This has been one of unsolved questions. Finally, based on the data from Thai migrants, learning about match quality in the cities is studied by Yamauchi (2003) and Kimura (2004). Yamauchi (2003) interests in the complementarity between schooling and experience in the cities for newly migrants. If the quality of matching between worker's skill and job is better among educated than uneducated migrants, educated migrants are likely to accumulate more experience in destination. He found that the complementarities of schooling and experience are reinforced as migrant's experience increases in the destination, Greater Bangkok Area. Kimura (2004) also utilized the data from Thai migrants to estimate the role of big cities as place of learning own ability. This paper also examined that urban wage reflect migrant's unobserved ability explains decision to move to Greater Bangkok Area.

3. Urban as Nexus of Labor Market Networks

3.1 Network Based Theory of Job Search-Matching

Granovetter (1974) has been influential within the labor economics literature because labor market networks have been known to play an important role of transition from non-employment to employment or job-to-job mobility. He emphasizes the role of private network to get a new job; “strength of weak ties.” Labor economists who are interested in the mechanism of job search- and matching-process have attempted to develop the equilibrium search model with private networks and paths. Recent network theory/graph theory helps us to consider the relationship between employment outcome and social connectivity. Accordingly, empirical economists have long sought a solution to identification of network effects. Recent empirical studies also advance in collecting the information of the number, quality, and strength of private networks. Search process, in particular, the choice of job search method for job-seekers plays a key role to find a new job. Holzer (1987), and Holzer (1988) compares employment outcomes between alternative search methods. Kuhn and

Skuterud (2000, 2004) study effectiveness of new search method; internet job searches in U.S. Active labor market policy requires to compare effectiveness of several search method in micro-level as well as the information of aggregate labor mobility. I attempt to introduce some recent theory, identification problem, and empirical studies on social networks in labor markets as follows.

Ioannides and Loury (2004) and Calvo and Ioannides (2005) reviews stylized facts on job networks for job-seekers and firms. I introduce those facts before discussing recent theory of social networks in labor markets. The first stylized fact is that job-seekers have used private networks (friends, relatives, and other personal ties) to seek a job. The second stylized fact is the prevalence of this search method varies by location, age, and occupation because outside option of the social networks of firms and workers also varies. The third stylized fact is that job search through private networks is productive and cost-effective because private networks solve information asymmetries. The fourth stylized fact is that the difference of the productivity of job search through private networks simply reflects difference of group characteristics. Theories of social networks in labor markets have developed two mechanisms of job search process for job-seekers: (1) referrals have private information of firms and workers; (2) job-seekers contact referrals about vacancy. The former is developed by Montgomery (1991) that makes arguments with regard to the screening role of job referrals for firms. Recently, the latter has formalized by Calvo and Jackson (2004, 2006). I focus on these theoretical contributions on social networks in labor markets. Montgomery (1991) assumes the inability of the firm to observe freshly hired worker's ability. He also assumes important sociological assumption; ability is positively correlated among the members of the network. Therefore, referrals will always be used by some firms in equilibrium. On the other hand, Calvo and Jackson (2004, 2006) develop the model of the information exchange with their social connections to find jobs. They focus on search process of job-seekers and the information spread from active employed to inactive unemployed job-seekers. Thus, the characteristics of social networks are crucial to the probability of transition from unemployed (inactive state) to employed workers (active). Therefore, unemployed job-seekers who are living with many employed may easy to exit from unemployment pool. As a result, Calvo and Jackson (2004, 2006) show a positive correlation between employment and wages of networked individuals within and long-run periods. Differences of duration dependence and persistence in unemployment are also explained by difference of social networks. The role of

referrals are already given in Montgomery (1991) and Calvo and Jackson (2004, 2006). This is future task for us to develop a model of endogenous referral formation.

Finally, these contributions enable us to explain the first and second stylized facts about social networks in labor markets. In contrast, the third and fourth stylized facts require the endogenous group formation between unemployed job-seekers and employed referrals. In particular, Rosenblat and Mobius (2004) is one of recent contributions about group formation and separation. They developed the model that communities become fragmented by type rather than geography due to advances in communication and transport technologies. In labor market context, the speed of learning about job opportunities may be affected by lever of group formation and labor market outcome.

3.2 Evidences on Social Interactions within Labor Market Networks

Many empirical problems and questions can be emerged in the analysis of network effects in labor markets. Main question is that how we identify externalities from one referral to job-seekers. We have to distinguish between following cases: (1) social learning; (2) correlated shocks; (3) common unobservable (or fixed effects); and (4) endogenous group formation. Manski (1993, 1995) point out the importance of this ``reflection problem." The first effect is called by endogenous effects. This characterizes the propensity of a job-seeker to behave in some way varies with the behavior of group. This means that the dependent variable is employment outcome as well as the explanatory variable is group's average endogenous factor. The second effect is called by correlated effects. This means that job-seekers in the same group tend to behave similarly because they have similar demographic characteristics and location-specific-shock. The third effect is exogenous effects (or contextual effects, common unobservable, fixed effects). Specifically, this means the propensity of a job-seeker to behave varies with the exogenous demographic characteristics of the group. In particular, identification of reference group is crucial to estimate the endogenous effects of referrals on job-seekers. If the group formation is endogenous, identification requires some exogenous source of variations in the group formation; instrumental variables, natural experiments, or social experiments to achieve randomized experiments. Sacerdote (2001) is a good example to estimate peer effects utilizing random assignment to roommates to avoid the problem of endogenous group formation. Freshmen randomly assigned to roommates, thus backgrounds are uncorrelated between roommates. Therefore,

econometrician can distinguish between peer and exogenous effects. His empirical result suggested that academic scores of the roommate significantly affects to the other roommates' test score. On the other hand, Munshi (2003) chooses rainfall in agriculture in Mexico as the instrumental variable of motivation of migration to the U.S. Rainfall in agriculture in Mexico is the driving force of migration to the U.S. labor market. However, this seems to have less impact on business cycle in the U.S. Therefore, network size and the composition varies with the income shock to agricultural sector in Mexico. Munshi (2003) finds that rainfalls in the distant-past negatively affect employment at the U.S. labor market. On the other hand, rainfalls in the recent-past have little effect on employment at the U.S. We can draw the conclusion that the large size of established migrants positively affects employment opportunity of new migrants.

It is important to detect social network effects on job search and employment outcome in labor markets. Topa (2001) uses indirect inference to test social interactions on local unemployment in Chicago. His result suggested that ethnic and occupational distance can explain spatial dependence of unemployment substantially. Bayer, Ross, and Topa (2005) collects individual-level matched data between residential areas and workplaces at the U.S. block level to test the effects of job referrals. They found that people who live close to each other also have propensity to work together, that is, there is informal hiring in the same census block. Furthermore, Wahba and Zenou (2005) shows the positive impact of population density on the probability of choosing personal networks as a job search method. They incorporated exogenous personal networks into standard search model to estimate the effects of population density on employment outcomes and its nonlinearity. To seek exogenous source of variation in the group formation is required to estimate the effects of population density. On the other hand, Munshi and Rosenzweig (2006) achieves success to exclude the problem of endogenous group formation. They utilizes the traditional caste system to identify the effects of family and caste networks on the career determination; the choice of English schools or local language schools. They found that male working-class-networks continue to send boys into local language schools and the traditional occupation. Most recently, Yamauchi and Tanabe (2006) studies the role of non market networks among migrants utilizing the dataset from Thai migrants. They found that the size and quality of previous migrants who have come from same provinces positively affects employment probability of the new migrants. All of these evidences are derived from the density of potential referrals in each location. Collecting the

information of nodes and links of social networks in labor markets is task for future.

4. Micro Dynamics of Knowledge Creation, Transfer, and Mobility

The microeconomic mechanism of knowledge creation and spillovers is uncovered theoretically now. This has been related to mobility literature. The seminal works by Markus Berliant and Masahisa Fujita are representative to this new field. They formally describe the relationship between knowledge creation, spillovers between heterogeneous population, and the process of similarity between different types of individuals. The production of tacit and explicit knowledge spillovers is the key force to explain the similarity of initially differentiated persons. The tacit knowledge is produced and shared during the explicit knowledge creation process. Thus the tacit knowledge becomes similar during the process of long-term cooperation. If one person moves and changes the partner, the tacit and explicit knowledge spillovers are newly achieved again. This principal idea is extended by introducing mobility to explain sustained economic growth. In detail, they assume that heterogeneity of people in their state of knowledge is essential for the creation of new knowledge. They also assume that cooperative process of knowledge creation affects the heterogeneity of people through the exchange of knowledge each other. The formation of group is also endogenously explained. The optimal size is larger as the heterogeneity of initial knowledge when initial difference of knowledge is more important in the process of knowledge creation.

Berliant and Fujita (2006) shows the two person case of the dynamics of knowledge creation through the exchange of initial knowledge. The two person case achieves the equilibrium process results in the too much accumulation of common knowledge compared to most productive situation. Berliant and Fujita (2007) is a first step toward to present a micro foundation of knowledge creation through the interactions among a group of people. Berliant and Fujita (2007) is also an extension of Berliant and Fujita (2006) to general case for a large set of initial state of knowledge. Finally, Berliant and Fujita (2008) steps toward to the relationship between long run economic growth and the knowledge diversity. Based on the micro economic model of knowledge creation, they introduce the interactions among a group of R&D workers into the growth model. They analyze the extent that long run economic growth is achieved to both the effectiveness of the knowledge exchange among R&D workers and to the effectiveness of public knowledge transmission.

On the other hand, Fujita and Weber (2004) connects directly the knowledge diversity with shaping immigration policy. The motivation of them is to examine the effects of designing immigration policy on the productivity and welfare for workers. They consider a model with two developed countries that face a flow of immigration from the developing countries. They assume that the countries differ in three characteristics: the labor complementarity between the native population and immigrants, the population size, and the magnitude of the cultural friction between the natives and immigrants. The two developed countries play non-cooperative game each other to attract immigrants to choose an immigration quota and the world immigrant wages. They show that even though the larger country attracts more immigrants, it chooses lower quota than its smaller counterpart. They also examine the welfare implications of countries choices' and argue that coordinated and harmonized immigration policies may improve the welfare of both countries. It is important to incorporate the effects of worker heterogeneity on industrial structure, trade, income distribution, and innovation for shaping and refining immigration policy.

The core idea to keep sustained economic growth is frequent mobility of knowledge workers. The study of micro foundation of knowledge creation also provides the framework of the migration policy to stimulate knowledge creation in wider East Asia. Geographic extent of mobility in East Asia provides appropriate common knowledge and initial heterogeneity. China has played an important role in developing and spreading similar cultures and literatures in East Asia, for example, Chinese characteristics. The countries in East Asia already share common cultural background to exchange knowledge each other and create new idea. Overseas Chinese independently play the role to develop and spread new technology, commercial scheme, and business creation. The geographic extent of the overseas Chinese community is restricted to Chinatown in East Asia. I build a model of the process of Chinatown formation in the next section. Then I argue the condition of the rise and fall of Chinatown. Their independency of overseas Chinese from local foreign authority provides useful policy guidance in countries to step toward the knowledge creation.

5. Modeling the Process of Chinatown Formation

Based on the discussion of section 2 to 4, this section tries to incorporate local ethnic networks for immigrants into traditional urban economics. The most striking example is

Chinatown as the nexus of business and job network in urban. Classic urban economics formally models the determination of urban land rent, equilibrium land use pattern, and the endogenous formation of central business district (CBD). The most fruitful result is that spatial extent of the business districts is determined endogenously through the interaction among love for variety, transport costs, and increasing returns to scale at the each establishment. Mori (2008) clearly summarizes the development of modeling framework for urban spatial structure. I utilize traditional models in urban economics to explain the difference of equilibrium pattern of ethnic enclaves in East Asia. I also utilize the degree of business and job networks in ethnic enclaves to explain the spatial extent of business district.

I summarize the American ghetto formation before I demonstrate the formation of Chinatown. The American ghetto and Chinatown look like in terms of segregation. Spatial separation of racial and ethnic groups like ghettos has costs and benefit for members. Cutler and Glaeser (1997) examines the effects of segregation on schooling, employment, and single parenthood for blacks. They find that blacks in more segregated areas have significantly worse outcomes than blacks in less segregated areas after controlling endogeneity problem of residential choice. Cutler, Glaeser, and Vigdor (1999) overviews the economic history of black migration to urban areas. Beginning American ghetto started from 1890 to 1940 while ghettos expanded from 1940 to 1970. Since 1970, spatial segregation has been declined. Pattern of geographic clustering of race and ethnic group in U.S. is explained by the interaction of housing costs and attitudes toward integration. Finally, Edin, Fredriksson, and Aslund (2003) examines the effect of migrating in ethnic enclaves within metropolitan areas on the earnings utilizing the exogenous force of Sweden government to allocate refugee. The benefit of living in ethnic enclaves is mainly appeared in less-skilled migrants. These articles are useful to consider the relationship between housing price and ethnic segregation in urban area. Additionally, modeling the process of Chinatown formation is required to construct the ethnic business network in urban area.

How might particular persons obtain new jobs across regions? This is a fundamental question that is posed by the labor mobility and local labor market literature. The study of this question provides detail information of spatial extent of the job creation and destruction in each establishment and household across regions. I can specifically investigate the more detailed question of how particular job is filled by particular job-seekers, especially for job-seekers in ethnic enclaves. To approach this question, local interactions on the exchange

of business and job information for newly immigrants are required to be model. First, the model covers localized personal networks effects on the probability of seeking assistance from friends and relatives within ethnic enclaves. Consequently, the choice of business and job networks seems to be determined and sorted by job and worker characteristics across individual and regions. Second, the characteristics of business profession are important in seeking assistance from ethnic networks to save costs of asymmetric information in goods and labor markets. The model will conclude that market size, improvement of quality of transaction information, and urban land rent play an important role to determine the spatial structure of Chinatown. However, a search cost of information asymmetries persists in goods and labor market.

6. Conclusion and Future Research

I overviewed recent labor mobility literature and showed the possibility of modeling the process of Chinatown formation throughout this paper. The reason of focusing Chinatown is that Chinatown reflects changes in migration stream and quality of job networks in ethnic enclaves. Investigating labor mobility is a powerful probe for the study of job creation and destruction. Most studies have addressed: (1) where, (2) when, and (3) how particular jobs have been created and destroyed in each establishment and household. Further labor mobility research is necessary to investigate issues of migration, job search, and welfare-to-work program in developing countries. I provide some future directions in the line of labor mobility research. First, it is necessary to identify the extent of geographic mobility as an investment for life earnings. We have to decompose learning by migrating from learning about matching quality for jobs in the cities. To do this, it is also necessary to collect the information of the human capital accumulations in cities among the individuals sorted by abilities. Segmentation by skill level in the cities can be affected by improvement of transport and communication technologies.

Second, it is also important to investigate into the detailed matching mechanism through labor mobility from rural to urban area. This provides information about how jobs and workers efficiently meet in the cities. Mismatches are related to the degree of job creation and destruction. Understanding the mechanism and degree of mismatch help to shape active labor market policy. Mismatches are often apparent because of information asymmetries between

specific skills of job-seekers and firms' production technologies. It is necessary to identify the extent of private and informal networks to avoid information asymmetries in job and worker flows. Ethnic ties also play an important role to reduce labor market frictions. At the aggregate and urban level, I will incorporate the role of private networks into a equilibrium search model such as Shimer (2005, 2006) to derive testable predictions of the effects of social networks in the cities or at the macroeconomic level. This study provides powerful and rigorous implications for shaping an active labor market policy in the cities or aggregate level.

Finally, it is crucial to collect the information on facts about urbanization and mobility in East Asia to develop harmonized migration policy: (1) understanding how to work urbanization in East Asia; (2) concentration and formation of megacities, for example, Tokyo, Mumbai, Seoul, Manila, and Delhi; (3) domestic and international flows in East Asia; (4) examining brain drain, brain gain, brain waste, and brain networks.

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