

**THE FORMATION AND REPRODUCTION OF SELF-EMPLOYMENT IN A DEVELOPING ECONOMY:  
AN ANALYSIS OF JOB-SHIFT RATES IN THE SOUTH KOREAN URBAN LABOR MARKET\***

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*Contrary to the advanced Western capitalist countries, South Korea, a rapidly growing economy, still maintains a significant proportion of self-employment which occupies more than 30 percent of the non-agricultural employment. In this paper, the job-shift rates between the self-employment sector and conventional employment in the organized sector are analyzed using job histories of 445 individuals. As a useful method, the competing risks model and the conditional probability model are tested. The result shows that when a person quits a conventional job in the organized sector, one confronts an equal chance to choose the next job in both sectors, whereas when one quits a self-employment job one has more chance to find the next job in the organized sector as an employee, especially when one is not successful in self-employment. The result shows that there is actually no barrier to entering the self-employment sector, but reproducing self-employment is a very selective and competitive process. The theoretical and methodological implications of these findings are discussed.*

## INTRODUCTION

Theoretical developments in research on labor markets have been all too frequently dominated by the perception that most workers are employed. The work on internal labor markets reflects this emphasis on the workplace as the significant determinant of working class lives (Doeringer and Piore 1971; Dunrop 1966; Althauser and Kalleberg 1981; Althauser 1988).<sup>1</sup>

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<sup>1</sup>The increasing use of the internal labor market is believed to be the strategy of the capital to increase the productivity of workers and to stabilize the labor supply. The necessity for site-specific skills and the importance of on-the-job training (OJT) lead to the expansion of the internal labor market, multiplying the bureaucratic ladders within a firm. It is not surprising, therefore, to note that the discovery of internal labor markets in economics and sociology coincides with the blooming of literatures on "markets and hierarchies" in organizational research (Williamson 1975; Williamson 1985; Chandler 1977). Even some Marxist analysts take it for granted that the development of monopoly capitalism is accompanied by bureaucratization which results in the consequent "degradation of skilled workers" (Edwards 1977; Braverman 1975). According to all these approaches, self-employment and small firms are the remnant of the traditional economy, eventually doomed to fade away as the economy grows further.

However, there is growing suspicion about this generalization (Granovetter 1984; Steinmetz and Wright 1989; Fuchs 1982; Carroll and Mosakowski 1987). The historical trajectory of the self-employed segment of the labor force in the United States, Belgium, Ireland, Italy, Japan, and Britain shows a gradual increase after the mid-seventies, and most other industrial countries also show at least the stabilization of the self-employed segment in the whole work force (Steinmetz and Wright 1989; Bechhofer and Elliott 1985). The statistics of some dynamic capitalist economies, including Japan, Italy, Taiwan, and South Korea reveal that these countries still have more than one fifth of the non-agricultural employment in the form of self-employment or family employment.<sup>2</sup> Although, in these countries, working class jobs has multiplied very fast, we still find an enormous increase of self-employment jobs in absolute numbers during the last few decades. Therefore, we can neither accept as valid the assertion of decline of the self-employment, nor can we ignore the importance of self-employment in the labor market.

In South Korea, self-employed and family workers constitute almost one-third of the work force, it is especially important to understand the mechanism underlying the formation and reproduction of self-employment. The significance of the self-employed sector extends into the whole labor market because the existence of a large self-employment sector dampens the structural effects of the labor market (such as economic segmentation by size of firms, state policy, e.g., export-promotion, and unequal capital equipment), making labor markets much more competitive. The self-employment sector is full of open competition in which many people can enter but few succeed, unlike internal labor markets which are characterized by the growth of insulated hierarchies within firms.

## THEORETICAL ISSUES

A few theoretical issues deserve notice. First, there are two channels of recruitment to self-employment: across the class boundary<sup>3</sup> from the working class (*immigration*) and within the boundary of self-employment

<sup>2</sup>According to the *Yearbook of Labor Statistics* published by the International Labor Organization, the proportion of non-paid workers, i.e., self-employed and family workers, among non-agricultural sector employment around 1980 amounts to as follows: Britain (6.8%); the United States (7.3%); West Germany (9.1%); France (10.9%); Japan (20.8%); Brazil (20.9%); Italy (22.9%); Taiwan (23.8%); Mexico (28.9%); South Korea (32.9%).

<sup>3</sup>We use the concept of the working class sector instead of the organized sector because most of the jobs in the sample are composed of either self-employment jobs or manual/low-clerical workers in the organized sector

(*residence*).<sup>4</sup> In this paper, I will, therefore, address two questions: which part of the working class tends to become self-employed, and which part of the self-employed sector tends to remain there.<sup>5</sup> Our goal here is to establish a framework to explain significant factors affecting the reproduction of self-employment.

Second, self-employment is characterized by free competition in the labor market; there is likely to be more frequent and drastic up-and-downs than in a regulated sector. Entry into self-employment is relatively open to whomever wants to start their own business, but the success is for the lucky few. Therefore, entry does not necessarily imply sustained survival over a long period of time.

Third, self-employment is episodic. Theoretical arguments that rely on the stable attributes of individuals are, therefore, bound to be incomplete--at best they can explain an individual's behavior at some particular point in life or in interaction with some other situational phenomena. Those factors that lead to self-employment early in careers may be quite different from those associated with entry at later points.

Several factors will determine the shift rate between self-employment and conventional working class job. In this research, I will use a general framework to study the effects of substantive variables that have long been thought to be important for understanding self-employment and entrepreneurship: migration and previous experience in agriculture, education, skill, gender and marriage, the significance of self-employment as a means of social welfare especially for the elderly, career development or labor market experience, labor market segmentation, and the reproduction of labor power.

<sup>4</sup>When there is a trajectory of previous jobs, we can distinguish *immigration* and *residence* as follows:



The change from job 1 to job 2 has occurred within a class boundary, therefore the status of change is residence, while the change from job 2 to job 3 is across class boundary taking the form of immigration.

<sup>5</sup>As we will mention in the next section, the difference between immigration status and residence status leads to the different assumption on the choice of models of job-shift rate. In case of the immigration status, we assume no barriers between the two destination, i.e., a working class job and a self-employment job. Therefore we use conditional probabilities. In case of the residence status, however, we would rather use type-specific rates because we believe that there is a significant difference between remaining in and exiting the self-employment job.

*Urban Migration and Previous Experience As a Farmer*

In Korea, where more than a half of the total urban population are migrants from rural areas, previous experience in an agricultural job and/or migration has significance for the individual's ability to enter typical working class jobs. Some researchers expect that those who migrate from rural area usually lack the skills required in industrial works. Most dualists in Third World labor market studies also emphasize the different recruitment mechanisms between the two sectors. Segmentation theorists argue that there is a barrier which prevents free mobility between a working class job and informalized self-employment. While working class jobs are filled with a highly educated urban population, self-employment jobs are filled with new migrants who have less education. If the prediction of dualist argument is precise, the frequency of sectoral job shift will be minimized, and most workers will have intra-sectoral job mobility.

Todaro (1969) contends, revising the arguments of the dualists, that there can be a step-wise labor mobility between self-employment or family employment and conventional employment. According to Todaro, the self-employed segment of the labor market is a temporal holding ground which provides urban migrants with the opportunity to learn skills and gives them time to find conventional jobs. If Todaro is correct, those who have background in agriculture will eventually be employed in a working class job. It is a matter of time. The variation in the waiting time is explained only by how fast the person acquires human capital which is required in the modern factory system.

*Education and Skill*

If we accept the argument of Todaro, that jobs in the industrial sector require more human capital, eduction and skill will be a significant factor in escaping self-employment. However, it is true only under the assumption that self-employment jobs are always inferior to working class jobs. If we find that those who have more education and skill have a higher risk of a job change from self-employment to a working class job, then we can conclude that Todaro's assumption is supported by empirical data.

Under a decentralized flexible production system, however, the most skilled and educated segment of the working class will start their own businesses. As Piore and Sabel (1984) point out, the most prominent characteristic of flexible production is the combination of skilled labor and simple machinery. If we find that those who have more education and skill have a higher risk of a job change from a working class job to self-

employment, we can infer that the labor market is structured by flexible production.

### *Gender and Marriage*

Under the assumption of informalization of self-employment, that is the marginalization of the most underprivileged segment of the labor force from the working class, we can expect more and more recruitment of female and child labor into self-employment. In most developing economies where there still remains a large proportion of subsistence economy, the expected role of, especially unmarried young, female workers are different from those of industrialized economies. Most of the

female workers consider themselves not as permanent members of the working class, but as temporary workers. Female workers tend to be employed at a younger age, especially in their high teens and early twenties, to supplement the house income and enrich their social experience rather than idling at home. Therefore they endure extremely low wages as long as they remain in the factory. Marriage is the critical dividing line from which most female workers quit their working class jobs and return home as a housewife and mother. This phenomenon is widely reported in Japan, Taiwan and South Korea (Gates 1985). If female workers are underrepresented in working class jobs, then they may be over-represented in self-employment after marriage.

### *The Elderly and the Social Welfare System*

The lack of a society-wide welfare system is also believed as one of the main engines propelling the reproduction of self-employment in countries such as Japan and South Korea. The lack of welfare and employment policies that increases insecurity about old age and thus play a role by (1) encouraging self-help, (2) inducing workers to work even for low wages, and (3) causing people to view entrepreneurship as a means to greater security in retirement (Patrick and Rohlen 1987). If the assertion is correct, everyone is vulnerable to the absence of a system, but we will find among the elderly a higher risk of becoming self-employed.

### *Career Development and Labor Market Experience*

Career development and labor market experience will also affect the likelihood of self-employment. Workers with previous experience of self-employment may have a higher probability of returning to self-employment. In the same view, the self-employed person who had experience in a working class job will have less difficulty returning to

another working class job. The general labor market experience will also have a different effect on being self-employed. Longer experience in the labor market transfers more human capital to the worker.

### *Labor Market Segmentation*

Many researchers point out the significant effect of labor market segmentation. Here we consider two kinds of segmentation. Among working class jobs, we distinguish between the large firm sector and the small firm sector. In self-employment jobs, we assume there is a difference between entrepreneurs and own-account workers.<sup>6</sup>

Conventional wisdom says that workers employed in larger firms have higher wages and a greater likelihood of promotion. They will consider the intra-firm job ladder as their path of career development. Then there develops an internal labor market. The workers in smaller firms who suffer from the lack of promotion and lower wages will prefer to be self-employed or to switch firms as a means of successful career development. Therefore workers in large firms will show lower job shift rate from working class jobs while the workers in small firms will show higher shift rates. The labor market segmentation will be also found within the self-employment sector. We can assume that own-account workers who have no substantial difference with the working class may have more frequent job changes between or within class boundaries.

### *Family Size*

Our last consideration focuses on family size. In Korea, working class jobs are insufficient to support a family especially when there are large numbers of dependents, usually children. The number of children will have two contradictory effects on the determination of job change. First of all, having more children means a greater burden in reproduction of labor power. As there is no system of retirement, no pension and unemployment benefits, the investment in their children can be an important countermeasure against unexpected retirement. Especially under the Confucian emphasis for the children to discharge their filial duty, the fruit of successful investment on the education of children means a securer life after retirement. Therefore, when manual workers arrive at a certain age and find ceiling effects on their wages and promotion, they tend to resort to self-employment as an alternative to their dead-end job. On the other hand, having more children

<sup>6</sup>Although own-account workers occupy the same class position with entrepreneurs in that both are self-employed, they differ in their scale of business: own-account workers have no considerable amount of capital investment and facilities for production or service.

will increase the opportunity cost of changing jobs.

## MODELS, METHODS AND DATA

In assessing the trajectory of career development, event history analysis has proved useful (Sørensen 1983; Blossfeld *et al.* 1989; Allison 1985). A key difficulty in traditional labor market research arises from the fact that the structure of inequality is comparatively fixed for a span of time, whereas individual attributes related to productivity are undergoing incessant change with the passage of time. Also traditional research is usually based on aggregate level data which cannot show the process in which job change occurs as a sequence.<sup>7</sup> These difficulties can be overcome, to some degree, by analyzing the life-long histories of workers. This kind of analysis has tremendous importance, especially in newly industrializing countries (NICs), because the labor market structure has changed drastically during rapid industrialization. Job trajectories of workers can convey the changing pattern of labor markets.

While we attempt to analyze the job-shift rates, we confront one methodologically complicated issue. The different nature of job change validates different methods of analysis. We confront the choice between the competing risks model and the conditional probabilities model. The basic models of job-shift rates and conditional probabilities as well as the difference between the two models are discussed in the next section.

### *Job-shift Rates and Conditional Probabilities*

Two basic models will be used in this study: models for analyzing the determinants of the *rate* of leaving a job and models for analyzing the

<sup>7</sup>The most comprehensive analysis on the formation and reproduction of self-employment can be found in Steinmetz and Wright (1989). Using aggregate level data, they analyze the pattern of small business growth rates with the rate of self-employment as a dependent variable. Their study provides only partial insight into how self-employment is reproduced. The formation and reproduction of self-employed is closely related to the job careers of the people and their aggregate level data tell us little about this relationship. Given their data, we can assume two extremely different scenarios: (1) In one extreme case, most workers are life-long servers in the working class sector, while other groups with different characteristics are wholly engaged in the small business sector. Then the expansion of self-employment will imply the increasing recruitment of the young labor force into the self-employment while those who are in working class sector will remain in the same class over their lifetimes. (2) In another extreme, there may be frequent interchange between conventional employment and self-employment. While workers are employed as working class in their younger periods, a large part of them may become self-employed in later days. Therefore, the analysis of the intra-geneartional change of jobs has significance in explicating the dynamics of self-employment.

determinants of particular *conditional transitional probabilities*. In this analysis, a person's work history is regarded as a temporal process whereby persons enter a job state, remain in that job state for a certain length of time, leave that job to enter another job state, and so on. This perspective then views a work history as a continuous-time discrete state process, where the states are jobs and the crucial events are job shifts. However, I have used a discrete time method instead of continuous time method. There is no difference between the two methods if we assume that the basic unit of time is as small as infinitum.<sup>8</sup> But in this analysis, the unit of time is a year which is long enough to cause a problem.

With this model a *process of job change* is viewed as the movement of persons among a set of qualitatively different job states. We begin, therefore, by defining a *job state space* as a set of two qualitatively different states, that is working class job and self-employment job. We use the variable  $Y$  to calculate this space.

Because we are modelling a process occurring in time, the focus is on values of  $Y$  at particular times, *i.e.*,  $Y(t) = y$ . The first thing to discuss is *state probabilities*, the possibility of being in a particular job state at time  $t$ .

$$P_y(t) = \Pr[Y(t) = y] \quad (1)$$

The probability of being in a state at time  $t$  is equal to the proportion of all objects occupying job state  $y$  at time  $t$ . However, because we are modelling change, the next thing we need to show is the transition probability.

*Transitional probabilities* are conditional probabilities that are relative to two points of time. Define these two points as  $t$  and  $t+1$ , and the two states as  $j$  and  $k$  (*e.g.*,  $j$  = working class job,  $k$  = self-employment job). Then the transition probability is:

$$q_{j,k}(t, t+1) = \Pr[Y(t+1) = k \mid Y(t) = j] \quad (2)$$

That is, the probability of moving from job state  $j$  to  $k$  during the period from  $t$  to  $t+1$  is the probability of being in job state  $k$  at time  $t+1$ , given that one was in job state  $j$  at time  $t$ .

By simplifying the previous formula, we can construct a probability of moving from state  $j$  regardless of the destination  $k$ . Then the probability of

<sup>8</sup>In fact, a job-shift occurs in a very short time-interval, for example, a day or a week. But we have a year as the unit of interval. This may cause a problem by twofold ways: (1) When a person has changed his job more than once in a year, there may be inaccuracy in recording the number of job and the duration of each job. (2) As the basic unit of interval is a year, the job duration less than one year will be overestimated especially when the duration is very short. This shortcomings of the data set is beyond my control.

leaving state  $j$  is as follows:

$$q_j(t, t+1) = \Pr[Y(t+1) \neq j \mid Y(t) = j] \quad (3)$$

This is the probability of leaving job state  $j$  given that one was in the job state  $j$  in the previous time interval. The conditional aspects of this probability means that the probability is calculated as the number leaving a state relative to the number at risk of leaving in the previous time period. The rate in this discrete time method appeals to our intuitive understanding of the change, because it is calculated in terms of a standard unit of time (here it is a year). Thus we talk about the shift rate as the number of persons leaving out all those employed in state  $j$  per year.

What is important here is that the type specific job shift rate can be partitioned into two parts as follows:

$$q_{jk}(t, t+1) = q_j(t, t+1) \cdot m_{jk} = \Pr[Y(t+1) \neq j \mid Y(t) = j] \cdot m_{jk} \quad (4)$$

where  $q_j(t, t+1)$  is the *overall rate of leaving a job* as we see in (3) and  $m_{jk}$  is the *conditional transition probability* defined as the probability of moving from job  $j$  to  $k$ , given that there has been a move. Thus the rate of moving from job  $j$  to  $k$  is equal to the rate of leaving job  $j$  times the probability that the next job occupied will be state  $k$ .

It is important to make clear that these conditional transition probabilities ( $m_{jk}$ ) are totally different from the previously discussed transition probabilities ( $q_{jk}$ ). A transition probability, as defined in (2), is relative to two points in time:  $t$  and  $t + 1$ . A conditional transition probability, on the other hand, is conditional upon one's leaving a job. Thus this probability is calculated as the proportion of all those who leave job  $j$  and end up in job  $k$ . In other words, these probabilities are conditional upon leaving a job.

#### *Modeling Job-shift Rates and Conditional Probabilities*

There are two important ways in which shift rates can vary. Rates can be a function of (a) time in a state (duration) or (b) population heterogeneity. The former, if unmodeled, leads to a time dependency problem whenever a process of job change is not constant.<sup>9</sup> In this analysis, however, we solve the problem of modeling of time dependency by including dummy variables for each time period. The procedure is similar to that employed in the proportional hazards Cox model. In equation (6) and (7),  $a(t)$  and  $b(t)$

<sup>9</sup>This is often a realistic assumption and time-dependency must be modeled. There are many ways to solve the problem of time-dependency. Carroll (1982) and Mayer *et al.*(1988) show how different functional forms can be used to correct this problem. This is a very important issue especially in continuous time method.

refers to different constants, one for each of the two years interval that are observed. These constants are estimated by including a set of dummy variables in the specific model. The second way job-shift rates can vary is due to population heterogeneity. Thus the type-specific rate is said to be a function of a set of exogenous variables

$$r(t) = f(x_1, x_2, x_3, \dots, x_n) \quad (5)$$

where  $r(t)$  is  $q_{jk}(t, t + 1)$ . The simplest specification of the function in (5) is the linear relationship:

$$r(t) = a(t) + a_1x_1 + a_2x_2 + \dots + a_nx_n \quad (6)$$

However, a problem with this specification is that  $r(t)$ , because it is a probability, cannot be greater than one or less than zero, while the right-hand side of the equation can be any real number. Such a model can yield impossible predictions that create difficulties in both computation and interpretation. This problem can be avoided by taking the logit transformation of  $r(t)$ .

$$\log \frac{r(t)}{1-r(t)} = b(t) + b_1x_1 + b_2x_2 + \dots + b_nx_n \quad (7)$$

As  $r(t)$  varies between 0 and 1, the left-hand side of this equation varies between minus and plus infinity. There are other transformations that have this property, but the logit is the most familiar and the most convenient computationally. The coefficients  $b_1$  and  $b_2$  give the change in the logit (log-odds) for each one-unit increase in  $x_1$  and  $x_2$ , respectively. With a similar logic, the conditional transition probability takes the following form:

$$\log \frac{m(t)}{1-m(t)} = c(t) + c_1x_1 + c_2x_2 + \dots + c_nx_n \quad (8)$$

where  $m_k$  is the conditional probability of a specific job shift (e.g., inter-class job shift), given that one has left a job.

#### *Interpretation of the Competing Risks Model*

We have reviewed two ways of modeling the competing risks model. Aside from the modelling of basic job-shift rates, there are theoretical issues regarding the choice of model and the interpretation of the results (Hachen 1988; Kalbflesch and Prentice 1980; Petersen 1988). The issue is under what conditions should we employ the competing risks model and analyze the set of type-specific rates. Hachen (1988, p.32) summarizes the problem as

follows:

If according to the theoretical model one expects that when changes in the outcome set (*i.e.*, the conditional probabilities,  $m_k$ ) occur, then parameters of the shift rate model ( $r(t)$ ) will remain unchanged, then one should have separate models for the shift rate and the conditional probabilities (or odds). However, if one expects that when changes in the conditional probabilities occur, the determinants of the shift rate will vary and the determinants of the type-specific rates ( $q_{jk}$ ) will remain invariant, then one should employ the competing risks model and analyze the set of type-specific rates.

At first it looks very confusing. Let's clarify his argument using our own hypothetical examples. We assume that there is a critical difference between *immigration* and *residence status* in self-employment.

**Scenario 1** At this point we think about the immigration process. We suppose that there is no significant difference in exogenous variables explaining the difference, for the worker who have lost his/her working class job, between entering a working class job and becoming self-employed. Then, an economic downturn in certain industry or region will result in the increase of layoffs and unemployment in working class jobs. In this case, the overall rate of leaving a job will increase rapidly, but we have no reason to believe that the rate will change if most of the people kicked out of the factory become self-employed. Then we would rather calculate the overall rate of leaving a job and the conditional probability of becoming a self-employed.

**Scenario 2** When we think about the residence process (as is shown in footnote 4), we assume that there is a significant difference, for the self-employed, between entering a working class job and remaining self-employed. From many applicants, only a few who have certain qualities, such as high education, enough experience in the labor market, good ability to mobilize enough capital and inter-personal network, and specific skill for their own business, actually remain in the self-employment sector. Then, regardless of the overall macro-economic fluctuation, only certain people always become self-employed, while others, excluded from the success in the self-employment sector, strive to find a job in the working class sector. In this case, we may have a better estimate of the job change by calculating the type-specific job shift rates.

However, it is still difficult to distinguish between the two approaches because there is not enough information on the relationship between economic fluctuation and the transformation of the labor market structure.<sup>10</sup>

The choice of a strategy depends on our theoretical understanding of the

<sup>10</sup>From Steinmentz and Wright (1989) we can draw an insight how this task can be actually carried out. They analyze the change of the self-employment rate by using shift-share analysis. They distinguish among *sector shift effect*, which is due to changes in the sectoral composition of the economy, and *class shift effect*, reflecting changes in the self-employed wage-earners balance

relationship between macro-economic change and the sectoral differences in the labor market segments. In the meantime, we will include both strategies and will compare the result to draw implications for Hachen's method. The tentative hypothesis is, as I have mentioned already, that if the origin is the working class job, the destination job is more or less randomly determined, whereas the change originating from self-employment shows certain selectivity especially when the destination job is self-employment.

#### *Data and Variables*

The data upon which this study is based on is *The Survey on the Urban Informal Sector* which was originally conducted by the Institute for Social Research in 1985. Members of 240 households (445 individuals) living in three working class residential areas in Seoul were interviewed during the survey. The data was collected by stratified cluster sampling. At first stage, three residential areas were chosen in consideration of their characteristics. One area was located near the industrial factory complex, the other was near the local commercial center, and the third was located in the squatter area. In each area, at the second stage, three *tongs*<sup>11</sup> were randomly chosen. Then, in the last stage, three *bans*<sup>12</sup> were randomly chosen from each tong. Therefore, the survey covers all household members, who have job histories, in twenty-seven *bans*. The data is basically retrospective job histories. Available information includes title of job, employment status, size of work place, time of job entry and job exit, age, sex, education, and migration history. The variables used in the analysis are shown in Table 2.

### RESULT OF THE ANALYSIS

We have the results of analysis on the data in Table 2 and Table 3. In each table, the first column shows the overall shift rate from a job, i.e., the probability of leaving a job regardless of its destination. Destination has no effect on this rate. The second and third columns show type-specific job shift rates. When the origin state is the working class (Table 2), the second column shows the shift rate from working class job to another working class

within each sector, and a third, *interaction shift effect* traceable to combined changes in the relative size of sectors and in the self-employed/wage-earner balances within sectors. We can assume that there are significant variations in the class and sectoral shift share across industries and over time. Also we expect a considerable amount of interaction effect which prevents us from drawing a simple dichotomy between the two patterns.

<sup>11</sup>The second smallest urban administration unit which is composed of around 10 *bans*.

<sup>12</sup>The smallest urban administration unit which is usually composed of around 10 to 20 households.

job, while the third column shows the shift from working class job to self-employment job. In Table 3, the change from one self-employment job to another self-employment job is shown in column 2, while the change from self-employment job to working class job is shown in column 3. The last column in each table shows the conditional odds of inter-class job change. It shows the ratio between the probability of exiting the original class category and the probability of remaining in the original class category, given that a job shift occurs.

### *Shift from the Working Class Job*

Now I want to go into details of the result. First, we go to Table 2. As there is no significant difference between overall shift-rate and type-specific shift rate, interpretation is simpler than in Table 3. First of all we pay attention to the time dummies on duration. As we see in the first column of Table 2,

TABLE 1. VARIABLES AND OPERATIONALIZATION

| Variables                             | Operationalization  |
|---------------------------------------|---|
| Female                                | Coded 1 for female, and 0 for male  |
| Married                               | Coded 1 for married, and 0 for not married  |
| Migrant                               | Coded 1 for the experience of migration and 0 for <i>Seoulite</i> and rural residents           |
| Rural                                 | Coded 1 for living in rural areas at the time of risk set and 0 for <i>Seoulite</i> and migrant |
| High School Diploma                   | Coded 1 for finishing high school or higher   |
| # of Children                         | Number of children  |
| Experience in Agriculture             | Coded 1 for previous experience and 0 otherwise   |
| Labor Market Experience               | Year stayed in labor market from the entry to the time of risk set                              |
| Large Firm                            | Coded 1 for employed in firms of 1,000 or more employees and 0 otherwise                        |
| Informal Sector                       | Coded 1 for self-employed who are not different from own-account workers and 0 otherwise        |
| Skilled                               | Coded 1 for skilled and 0 otherwise   |
| Secondary Labor Market                | Coded 1 for casual and day laborers and 0 otherwise   |
| Cohort 1941-1950                      | Coded 1 for born between 1941-1950 and 0 otherwise  |
| Cohort till 1940                      | Coded 1 for born before 1940 and 0 otherwise  |
| Age at the Shift                      | The age at the time of risk set   |
| Experience in the Working Class Job   | Coded 1 for previous experience in the working class job and 0 otherwise                        |
| Experience in the Self-Employment Job | Coded 1 for previous experience in the self-employment and 0 otherwise                          |

Note: Unless specified, all values of the variables show the status at the time of the risk set.

**TABLE 2. PARAMETER ESTIMATES OF LOGIT MODELS FOR JOB-SHIFT RATES FROM WORKING CLASS, INTRA- AND INTER-CLASS SHIFT RATES, AND CONDITIONAL ODDS OF INTRA-CLASS JOB SHIFT**

| Variables               | I<br>Job Shift Rate<br>From<br>Working<br>Class | II<br>Intra-sectoral<br>Job Shift Rates | II<br>Inter-Sectoral<br>Job Shift Rates | IV<br>Conditional<br>Odds of Intra-<br>Sectoral Shift |
|-------------------------|---|---|---|---|
| Female                  | -.626***  | -.551***                                | -.872*                                  | .333  |
| Married                 | .882***   | .688***                                 | 1.550***                                | -1.061***   |
| Migration               |   |   |   |   |
| Migrant                 | -.304*  | -.369*                                  | -.532*                                  | .207  |
| Rural                   | -.703***  | -.763**                                 | -1.518**                                | .882  |
| High School             | .261^   | .207                                    | .373                                    | -.221   |
| # of Children           | -.282***  | -.238***                                | -.256***                                | -.024   |
| Experience in Agr.      | .033  | .048                                    | -.089                                   | .172  |
| Labor Mkt. Experience   | .046**  | .050**                                  | .096***                                 | -.031   |
| Secondary Labor M.      | -.075   | -.041                                   | -.034                                   | -.367   |
| Skilled                 | -.685***  | -.727***                                | -.533*                                  | -.030   |
| Secondary Labor M.      | -.214   | -.168                                   | -.528                                   | .332  |
| Cohort                  |   |   |   |   |
| 1941-1950               | .012  | -.038                                   | .191                                    | -.242   |
| before 1940             | -.131   | -.242                                   | .465                                    | -.926*  |
| Age at Shift            | -.073***  | -.078***                                | -.158***                                | .074***   |
| Whether Experienced     |   |   |   |   |
| Working Class Job       | -.233^  | -.183                                   | -.361                                   | .146  |
| Self-Employment Job     | -.528**   | -.634**                                 | -.050                                   | -.589   |
| Duration                |   |   |   |   |
| Duration 2              | .485***   | .410*                                   | .469^                                   | -.161   |
| Duration 3              | .305  | .294                                    | .192                                    | .344  |
| Duration 4              | .459*   | .501*                                   | .264                                    | .384  |
| Duration 5              | -.225   | -.393                                   | .207                                    | -.454   |
| Duration 6              | .258  | .002                                    | .801                                    | -.797   |
| Duration 7              | -.055   | -.420                                   | .682                                    | -1.077  |
| Duration 8              | .636  | .640                                    | .798                                    | -.047   |
| Duration 9              | -.020   | -.359                                   | .912                                    | -.733   |
| Duration 10             | -.222   | -.253                                   | .600                                    | -.112   |
| Log-Likelihood          | -1193.1   | -993.0                                  | -412.1                                  | -185.5  |
| N with Event            | 361   | 277                                     | 84                                      | 277   |
| N                       | 4383  | 4383                                    | 4383                                    | 361   |
| Conditional Probability | 1.00  | .723                                    | .277                                    |   |

<sup>^</sup>p < .10, \* p < .05, \*\*p < .01, \*\*\*p < .001.

**TABLE 3. PARAMETER ESTIMATES OF LOGIT MODELS FOR JOB-SHIFT RATES FROM SELF-EMPLOYED, INTRA- AND INTER-CLASS SHIFT RATES, AND CONDITIONAL ODDS OF INTRA-CLASS JOB SHIFTS**

| Variables               | I<br>Job Shift Rate<br>From<br>Self-<br>Employed | II<br>Intra-sectoral<br>Job Shift Rates | II<br>Inter-Sectoral<br>Job Shift Rates | IV<br>Conditional<br>Odds of Intra-<br>Sectoral Shift |
|-------------------------|--|---|---|---|
| Female                  | .056   | .454                                    | -.239                                   | .109  |
| Married                 | .400   | .745^                                   | .110                                    | .968  |
| Migration               |  |   |   |   |
| Migrant                 | .068   | -.328                                   | .132                                    | -1.112^   |
| Rural                   | -1.483***  | -1.931***                               | -1.515**                                | -1.299^   |
| High School             | .249   | -.037                                   | -.457                                   | .096  |
| # of Children           | -.210**  | -.294**                                 | -.087                                   | -.088^  |
| Experience in Agr.      | .502   | .181                                    | .700*                                   | -.382   |
| Labor Mkt Experience    | -.008  | .055^                                   | -.033                                   | .052  |
| Informal Sector         | .040   | -.339                                   | .008                                    | -.468   |
| Skilled                 | -.878**  | -.456                                   | -1.230***                               | .485  |
| Cohort                  |  |   |   |   |
| 1941-1950               | -1.318***  | -.643                                   | -1.707***                               | 1.860*  |
| before 1940             | -1.577***  | -.300                                   | -2.376***                               | 2.845***  |
| Age at Shift            | -.024  | -.086**                                 | -.017                                   | -.051   |
| Whether Experienced     |  |   |   |   |
| Working Class Job       | -.306  | -.461                                   | -.341                                   | -.089   |
| Self-Employment Job     | -.063  | .160                                    | -.186                                   | .189  |
| Duation                 |  |   |   |   |
| Duration 2              | .571*  | .033                                    | .833**                                  | -.965^  |
| Duration 3              | .611*  | -.310                                   | 1.081**                                 | -1.299^   |
| Duration 4              | .596^  | .388                                    | .682                                    | -.334   |
| Duration 5              | .100   | .135                                    | -.108                                   | .824  |
| Duration 6              | 1.261**  | .871                                    | 1.479**                                 | -.694   |
| Duration 7              | 1.218**  | .496                                    | 1.701**                                 | -1.337  |
| Duration 8              | 1.231**  | .846                                    | 1.554^                                  | -1.056  |
| Duration 9              | 1.216^   | .408                                    | 1.874*                                  | -1.028  |
| Duration 10             | 2.467***   | 1.148                                   | 3.300***                                | -.1857  |
| Log-Likelihood          | -515.6   | -261.1                                  | -357.5                                  | -155.3  |
| N with Event            | 162  | 59                                      | 103                                     | 59  |
| N                       | 1959   | 1959                                    | 1959                                    | 162   |
| Conditional Probability | 1.00   | .380                                    | .620                                    |   |

^p &lt; .10, \* p &lt; .05, \*\*p &lt; .01, \*\*\*p &lt; .001.

there is a gradual increase of coefficients as the duration becomes longer. We find here a time dependency which is closely related to the general trend of job-shift from the working class. All other conditions being equal, people who remain shorter in the working class job show more hazard of job-shift. If one has stayed in a working class job for a long time, one has more and more possibility to remain in the same class sector. Therefore the effect of time is cumulative rather than linear.

The overall shift rate is explained by most of the variables, such as sex, marital status, migration, education, number of children, labor market experience, skill, and age at the shift. For example, those who have a high school diploma have a larger hazard of job-shift from a working class job compared to those who do not. Among the working class, those who have higher education are more mobile. Also skilled workers have less possibility of job-shift than unskilled workers. There is also a significant difference between married and unmarried workers: married workers have a larger hazard of shift from a working class job than unmarried workers.

Although we find the different effect of exogenous variables determining the shift-rate out of working class job, we find actually less difference in the probability that it will be an intra- or an inter-class job shift. In terms of recruitment of the working class into self-employment, we conclude that there is virtually no difference between those who remain in working class jobs and those who actually become self-employed. In other words, the self-employment sector is open to whomever wants to enter, except the fact that older cohort workers and married workers have more chance to be self-employed given that a shift has occurred.

#### *Shift from a Self-employment Job*

However, wide access does not necessarily mean easy success in the self-employment sector. As we see in Table 3 there is a gap between the start up and the sustenance of self-employment job. As we assume, successful self-employment is relatively restricted to the qualified and lucky few: we have no reason to believe that the exogenous variables have the same effects on different types of job change when a person leaves a self-employment job. Type-specific rates will convey its own story in this case. From the third column of Table 3, we find that some people have a larger hazard of inter-class job shift than others. For example, self-employed workers with experience in agriculture have a higher possibility of becoming working class than those who do not. In the same context, workers of rural background have a higher hazard of becoming working class compared with those of urban origins. Another significant factor is cohort group: older

group stays longer in self-employment and do not try to become working class again. As Fuchs (1982) already has noted, self-employment is closely related with the life-cycle of workers. Older workers tend to stay longer in self-employment. However, self-employment is an episode which can virtually occur to anyone during the life course.

### *Comparison of Two Tables*

The two tables provide some very interesting contrasts. First of all, there is a certain direction of selectivity in job change. Therefore, the choice of method between type-specific rate and conditional transition probability matters. For those originating in the working class sector, there is no difference in general pattern between the probability getting the next job in the working class or in the self-employment sector except the effect of marriage, cohort, and age at the shift. The fact that leaving a working class job has few relations with the choice of next job makes it possible to hypothesize that overall shift rate from the working class job can be an efficient estimate of the general job change pattern. As the result in Table 2 and 3 is obtained by maximum likelihood estimation using LIMDEP, the comparison of  $(-2)^*(\log \text{likelihood})$  difference enables us to determine whether type-specific rates are statistically redundant of the overall shift rates. In case of Table 2, the  $(-2)^*(\log \text{likelihood})$  difference between overall job shift rate and type-specific rates is 424 and the degree of freedom is 25. Since it is significantly different, we may conclude that type-specific rates cannot be summarized in overall job shift rates. In Table 3,  $(-2)^*(\log \text{likelihood})$  difference is 206 and the degree of freedom is 24. Therefore, in both cases, type-specific rates cannot be summarized into overall job shift rates in a strictly statistical manner. However, we still find some differences in two job change patterns. The self-employed are in a different situation when they leave a job. When a person leaves his self-employed job, the job shift rate is seemingly different between intra- and inter-class job change. In other words, providing only the overall job shift rate from self-employment may conceal the peculiarities in the type-specific shift rates.

The comparison of two tables leads us to think about the usefulness of Hachen's distinction between conditional probability and type-specific rates. In fact, it is impossible in social life to find an ideal situation in which one of the methods can claim its exclusive validity. In many cases, including our example, the conditional probability can be used as an indirect test for the difference between type specific job shift rates. For example, as we see in Table 2, married workers have higher hazards of job shift than unmarried workers whether the destination of change is self-employment or a working

class job. But in case of change to self-employment, the hazard rate is more prominent. In other words, if the hazard rate of one specific type is prominent, it is reflected in the conditional probability estimation. As frequent job change is reflected in higher hazard, those attributes which contribute to the higher hazard will contribute to the increase of conditional probability of certain type of move given there is a job change regardless of the type. Let us examine Table 2 with the point in mind. While there are some significant exogenous variables explaining the overall shift rate from a working class job, there are fewer differences between getting another working class job and becoming self-employed. In this case, type-specific rate is more or less redundant, especially in predicting the direction of the effect of independent variables, because most of the changes are explained by the overall shift rate. When a person leaves a working class job, he has almost equal possibility of finding a job in both class categories. The distribution of destination state does not show systematic bias, and we find that the type-specific job shift rates are similar with the overall job shift rates.

When we examine the job change from self-employment, overall shift rate disguises the real story. The comparison of column II and III in Table 3 reveals different explanatory variables are working in intra- and inter-class job shifts. When we use only the overall shift rate and conditional probability, there is a danger of misinterpretation that more variables have a significant effect in emigrating from the self-employment sector. This is an artifact caused by putting together two different types of change into one general shift rate. Because the self-employed who remain in the same sector have such distinctive characteristics, the overall pattern appears to be explained by heterogeneity in exogenous variables, unless two patterns are separated.

## DISCUSSION

Now we have a general picture of the formation and reproduction of self-employment in South Korea. Self-employment is relatively an open opportunity to whomever wants to start their own business. It seems, however, that the start up of one's own business is one thing and to continue is another. For the working class, becoming an entrepreneur is always a possible alternative, and many people actually try it, although only a few of them successfully continue the business. The process of career mobility shows that reproduction of small business is closely connected to certain characteristics of the people, which can be broadly named as human

capital. The fact that we cannot find any significant effect from variables related with structural variables (such as labor market segments, characteristics of workplace) implies that human capital is more important factor in reproduction of self-employment. Workers live in an economic system in which the existence of large proportion of self-employment dominates the career of workers. Those who are not satisfied with their working class jobs may find it relatively easy to enter the self-employment sector. But they go back to a working class job unless they are successful as entrepreneurs. The self-employment sector is therefore the holding ground of the failed working class in the battle-field who need new replenishment and ammunition.

Such findings leads us to infer to a broader possibility which can be tested by further thorough research. On the level of national economy, the existence of a large self-employment sector makes the labor market more market-oriented. The tendency to bureaucratization and the development of an internal labor market is effectively damped to the point that the labor is readily mobile and the wage reflects the equilibrium between supply and demand. The existence of a large pool of self-employment also makes human capital elements the most prominent even in the working class labor market. The structural differences between industrial sectors, segmentations, and sizes will be minimized by the maximization of market forces caused by the existence of self-employment. Contrary to Williamson and Chandler and contrary to the expectation of internal labor market theory, a large proportion of the self-employment sector will levy restriction on the process of bureaucratization. The regaining, or preservation, of market power contributes to the maintenance of flexibility in capitalist large firms.

Although we have generated a simplified version of the Korean urban labor market, there are several factors which complicate the simple image. It is rational, at this point, to argue that both the working class sector and the self-employment sector is composed of diverse subgroups which have different backgrounds and internal structures. The working class labor market can be divided into at least two subgroups, namely, core workers employed by large firms and who have stable employment status, and marginal workers who are employed on a temporary or daily basis. Also the self-employment sector can be divided into two groups: small entrepreneurs who own sizable capital and means of production, and own-account workers who virtually depend on their own physical labor power without any capital or-instrumental equipment. The route to self-employment will be more appealing especially to the marginalized workers. By the same

token, own-account workers will show more frequent inter-class job change compared to the small entrepreneurs. These complexities can be clarified by introducing more detailed categorization on the job groups and by analyzing the shift among these groups.

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