GROSS JOB CREATION AND DESTRUCTION, AND LABOR MOBILITY IN JAPAN

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ABSTRACT

This paper examines job gains and losses at establishment levels using micro-data in Japan from 1985 to 1992. Among total separations from establishments, about 14 percent of them was at least due to job destruction. By enterprise size, large firms with 1000 or more employees frequently reallocated employment across establishments when jobs were destructed. Separations by job destruction were not observed in large firms. In small enterprises with 5-29 employees, about 30 percent of separations was generated by job destruction. About a half of gross job creation in total economy was generated within enterprises with less than 100 employees. Because of high gross job destruction as well as high gross job creation of small firms, however, there was no strong pattern of net job creation rates by enterprise size. The job destruction rate by death of firms was low, and it might contribute to the low unemployment rate in Japan.

1.Introduction

While a long-term employment relationship is a notable feature for large firms in Japan, many employees in Japanese small firms frequently move to other small firms during their working lives. For instance, while the job tenure of ordinary male employees in 1990 was 15.5 years for firms with 1,000 or more employees on average, it was 10.4 years for firms with 10-99 employees. (The Basic Survey on Wage Structure by the Ministry of Labour (1992)). Do these frequent labor mobilities among small firms reflect that it is easy for workers to change jobs according to their preferences and abilities? Or, do they mean that workers in small firms face to the instability of employment because of the high degree of job losses?

According to the Employment Status Survey conducted by the Management and Coordination Agency in 1992, all the private sector work force amounted to 47,451 thousand persons in Japan. Among them, workers in firms employing more than one hundred persons were 21,717 thousand, and their proportion was 35.9 percent of the total work force. That is, more than a half proportion of the Japanese private sector work force consisted of workers in small firms with less than one hundred employees. Workers in large firms with more than one thousand employees amounted to 10,102 thousand and were only 16.7 percent of all the workers.

If the frequent labor mobility across the small firms comes from the smoothness of mobility undertaken by workers who perceive mobility to be in their self-interest, it will imply the

efficiency of the Japanese labor market with opened job information and low job search costs. Otherwise, most labor mobilities from small firms are employer-initiated and are caused by the job instability which is size-specific for small firms. Then it would generate the large differential in the expected utility between large and small firms, which overcomes the observed firm size wage differential. Therefore, it is important to examine the content of labor mobility among small firms in order to evaluate the functioning of the Japanese labor market.

The degree of job stability can be known by examining the frequency of employment adjustment involved by job turnovers at the firm level. Nevertheless, probably because of a difficulty in the access to the data, there were not plentiful researches for the extent of labor mobility caused by job losses among the overall labor movements in Japan. The published labor flow data at the firm level were limited to the Survey on Employment Trend conducted annually by the Ministry of Labour. The Survey on Employment Trend in 1992 reported that fires were less than 10 percent among workers separated from small firms with 5-29 employees.[1]

Does this mean more than 90 percent of job changes resulted in the voluntary movements of workers who found the more suitable jobs for them? And was it, in fact, the rare case in Japan that workers were forced to separate from firms because of job losses within the firms?

There are, however, several remarks about this result in measuring the relationship between job flows and labor flows. Firstly, fires are not equivalent to separations by job destruction. Even if jobs are destructed, some employees are not fired but forced to quit the firms. Then quitted workers may include those separated by job destruction. Secondly, these data do not cover establishments abolished during an inquiring period; the data cover only establishments existing for the entire period. Hence, job destruction by firm death is not included in the data. Thirdly, the data do not cover tiny establishments employing less than five workers. As these tiny establishments appear to be under flexible job turnovers through firm death and birth, these data will understate the true job gains and job losses in the overall labor market. From these limitations, the alternative measure will be required to capture the amount of labor mobility involved by job flows. The quantitative analysis in this paper will later report that about 30 percent of separations from small firms was generated by job destruction in Japan and the rest was due to workers' self-interest.

While jobs are destructed among some small firms, jobs are also created among other small firms and the created jobs offer new employment opportunities. In this sense, small firms may play a crucial role in job creation. Hence, I examine the degree of gross job creation as well as gross job destruction in small firms relative to large firms.

While I investigate such job creation and destruction and focus on their differences in firm sizes, the factors having effects on job flows are not limited to the firm size factor. For example, job creation will increase with the aggregate demand and job destruction will decrease with it. And the job flows will vary with industries. Therefore, I test which factor has the most crucial effect on job turnovers, firm sizes, industries, and the aggregate demand.

And the job flow structure will closely relate to the macroeconomic behavior in total economy, especially the unemployment rate. Recently, there are studies about the relationship

between job turnover, labor mobility, and employment (Birch (1979), Leonard (1987), Kuwahara (1987), OECD (1987, 1994), Dune, Roberts, and Samuelson (1989), Davis and Haltiwanger (1990, 1992) and so on).[2] Based on these analyses, I consider the structure of job flows in Japan and several countries. Then I provide the new hypothesis why the unemployment rate in Japan has been so low relative to other countries.

This paper is composed as follows. In Section 2, establishments are decomposed into the job growing, declining, and stable sectors. And I examine the relative importance of several economic factors on the job growing and declining. Section 3 captures the relationship of job turnovers and labor mobilities. Section 4 investigates the job flows by birth and death of firms. Section 5 compares the structure of the job flows in Japan with the job flows in several countries. Section 6 summarizes the results of this paper.

2.Gross Job Growing and Job Declining

The Data

In this section, I examine the amount of gross job growing and declining at the establishment level using the data on the Survey on Employment Trend. This survey investigates labor flows of establishments. These establishments are picked up every year and are inquired about their labor flows during the first and second halves of a year. The survey covers establishments employing five or more ordinary workers on January 1. I use the micro-data on the Survey on Employment Trend from 1985 to 1992. To focus on the employment change during twelve-month intervals from January 1 to December 31 in a year, I draw up the data on the establishments which answered about the flows of both halves of a year, and all job flows and labor mobilities are expressed on the annual base in the following. Then the samples vary between almost eleven thousand and thirteen thousand establishments each year.[3]

The remark to use these data is, as noted above, that they exclude establishments which are born or dead during the inquired period. That is, these data do not present both job openings by firm birth and job terminations by firm death. Therefore, this section only examines gross job growing and job declining of firms surviving through the inquired year.

The Definition

Next, to define job growing and job declining, establishments are decomposed into three segments: the job growing sector, the job stable sector, and the job declining sector. The data on the numbers of ordinary employees of an establishment in year t include variables as follows: newly hires (denoted as nh_t), transfers from other establishments of the same enterprise (tf_t), workers changing their status from temporary to ordinary works (sc_t), separations from the enterprise (sp_t), transfers to other establishments of the same enterprise (tt_t), and employment in the end of year t (x_t).[4] These variables are related to

(1) $x_t - x_{t-1} = nh_t + tf_t + sc_t - sp_t - tt_t$.

This relationship defines a growth rate of employment for the establishment in year t as g_t. If one job is filled by one ordinary employee, it also represents a per capita gross job growth ratio at the same time. g_t is represented as

$$(2) \quad g_t = \frac{2 \, (nh_t + tf_t + sc_t - sp_t - tt_t)}{x_{t-1} + x_t}$$

Common to Davis and Haltiwanger (1990, 1992), g_t is denoted as the gross job creation rate in year t for $g_t > 0$, and $-g_t$ as the gross job destruction rate in year t for $g_t < 0$.

g_t varies between -2 and 2. The job growing sector is defined as the set of establishments of $0 < g_t < 2$, the job stable sector of $g_t = 0$, and the job declining sector of $-2 < g_t < 0$.

The Factors Having Influences on Gross Job Flows

This subsection examines what kind of factors were important in determining the gross job creation and destruction rates. As these factors, I pick up three variables: enterprise sizes, industries, and aggregate demand conditions. It will be also the important factor in determining gross job flows how long a firm has been managed, because the younger establishments are more likely to expand and contract than the older establishments are. However, the Survey on Employment Trend does not cover the data on the ages of establishments, so the ignorance of this important variable is not avoided.

In order to examine which was the most crucial factor for job flows among the above three factors, I pool the annual data from 1985 to 1992 and regress the year dummy variables, the one-digit industry dummy variables, and the enterprise size dummy variables on the gross job creation rate and the gross job destruction rate respectively. The year dummy variables are the proxy for the aggregate demand condition. The enterprise size dummy variables are distinguished by firms with 5-29 employees, firms with 30-99 employees, firms with 100-299 employees, firms with 300-999 employees, and firms with 1,000 or more employees on June 30 each year.

Table 1 reports the results. With respect to the effect of the year dummy variables on the gross job destruction rate, the coefficients on the year dummies for 1986 and 1987, when the economy went down because of the rapid yen appreciation, are larger than other years. On the other hand, the effect of the year dummies on the gross job creation rate is highly positive for the years 1989 and 1990 when the aggregate demand largely expanded. It is clear that the job flows depended on the aggregate demand conditions and moved cyclically with them.

Regarding to the industry dummies, both the job creation rate and the job destruction rate are higher for the real estate industry, the wholesale and retail trade industry, and the construction industry. The results in Table 1 show that industries could be decomposed into the two groups: the high job creation and high job destruction industries, and the low job creation and low job destruction industries. The manufacturing industry typically belonged to the low job flow industries.

The gross job creation and destruction rates make a straightforward difference by enterprise size. Even after controlling for the aggregate demand and the industrial characteristics, the smaller establishments tended to generate the larger gross job growings and declining. For instance, both the job creation and destruction rates of establishments in small enterprises employing less than 30 workers are higher by over ten points compared to those rates in large enterprises employing 1,000 or more workers.

While these results show that each of the above three variables had the effect on the gross

job flows, which was the most effective factor among them? According to the analysis of variance, the variances of job flows are decomposed into the above three main factors and their residuals. As the data distinguished by year, industry, and firm size are imbalance, the sum of squares of these factors are different by order of introducing these factors. Here, I firstly control for the year factor X_y, and secondly add the industry factor X_i, and finally consider the size factor X_s. As SS (•) is the sum of square, E (•) is the predicted value, and e and ε are the residuals, the sum of square of g_t is decomposed as follows. The variance of the job creation rate for $g_t > 0$ is decomposed as

(3) $SS(g_t) = SS(E(X_y)) + SS(E(X_i | X_y) + SS(E(X_s | X_y, X_i)) + SS(e)$.
            (0.549)   (5.988)   (50.493)   (588.136)

And the variance of the job destruction rate for $g_t < 0$ is decomposed as

(4) $SS(-g_t) = SS(E(X_y)) + SS(E(X_i | X_y)) + SS(E(X_s | X_y, X_i)) + SS(\varepsilon)$.
            (1.423)   (11.423)   (64.771)   (989.794)

The figures in parentheses are the sum of squares. F-values for the main factors are all significant at the 1 percent level. These results mean that the sum of square of the enterprise size factor is larger than that of the year and industry factors even after controlling for these two factors as to both job creation and destruction rates. It suggests that the enterprise size was crucial for the amount of job flows compared to the aggregate demand and the industries. And the sum of square of the residual term is larger than the three main factors. It suggests that the unmeasured factors such as the age of establishments, managerial abilities of employers, and the bargaining power of trade unions also had the major influence on the gross job flows.

3.Labor Mobility

Total Economy

In this section I examine the relationship between job flows and labor mobility. There are roughly two dimensions as to the content of labor mobility. The one is, workers move across firms and the employment allocation is reshuffled given distribution of jobs among firms. The other is, workers move because job are created and/or destructed, and the employment opportunities and the job distribution among firms are changed. What to the extent did labor flows relate to job creation and destruction? [5]

Figure 1 shows movements of labor flows in the overall labor market divided into the three sectors described in the previous section. Three bars represent the job growing, stable, and declining sectors from the left side. The width of each bar represents the average ordinary employment in each sector during the 1985-1992 period.[6] These figures for the width show that 30,027 (=14,177+4,043+11,807) thousand workers were the average total employment in the overall market, and 47.2 (=14,177/30,027*100) percent of them was employed in the job growing sector and 39.3 (=11,807/30,027*100) percent in the job declining sector. The proportion of the stable sector was small and most establishments changed net employment in a year.

The height of each bar represents the annual average flow rate of ordinary employment during the 1985-1992 period, while the width of it does the average stock of employment. The

flow rate of ordinary employment is defined as the ratio of the annual labor flow to the average employment of each sector. The upper height over zero represents the inflow rate to the sector and the lower height beneath zero represents the outflow rate from the sector. These inflow and outflow can be divided into the five components shown in the right hand side of Equation (1). Hence, the difference between the upper and lower heights means the average gross job creation or destruction rate defined in Equation (2). The upper height is more (less) than the lower height in the job growing (declining) sector. Not surprisingly, the upper height is the same as the lower height in the job stable sector.

In construction, the bar chart itself represents the average number of labor inflows and outflows expressed in Equation (1) of the sector. For example, 3,215 thousand persons entered into the job growing sector in a year on average; among them, 2,630 thousand persons were newly hired, 507 thousand persons moved from other establishments of the firms, and 78 thousand persons changed their employment status from temporary works to ordinary works there. At the same time, labor outflows also occurred in the growing sector; 1,553 thousand persons separated from firms and 311 thousand moved to other establishments of the firms. In total, 1,352 (=3,215-1,553-311) thousand jobs were created in the growing sector, so that the average gross job creation rate over total employment became 4.5 (1,352/30,027*100) percent.

In the job declining sector, inflows were annually, on average, 1,185 thousand newly hired workers, 281 thousand movers from other establishments, and 15 thousand status changers. And separations and movements to other establishments totally amounted to 2,571 (=2,020+551) thousand persons. Among them, 1,481 (=1,185+281+15) thousand jobs were filled for vacancy, but 1,090 thousand jobs disappeared in a year. As a result, the average gross job destruction rate over total employment became 3.6 (=1,090/30,027*100) percent and it was smaller than the average job creation rate during the 1985-92 period.

Then what to the extent of separations was driven by job destruction rather than reshuffling of workers? Separations by job destruction occur in cases when workers are fired in the job declining sector. In addition, when employers do not explicitly fire workers but they do not ex post fill up separations of the workers, these separations also relate to job destruction. Hence, it is natural to count these cases in the declining sectors as separations by job destruction. Still, if workers whose jobs were destructed move to other establishments of the firms, they do not lose employment opportunities. Therefore, separations by job destruction should be strictly defined as the gross destructed jobs minus the movements from establishments in the job declining sector to other establishments of the same firms.[7] As some labor inflows into establishments in the job declining sector may fill up some movements from these establishments to others in the same firms, this definition will mean the minimum level of the true separations by job destruction.

Figure 1 shows these separations by job destruction as the shaded area in the job declining sector. Of 2,020 thousand separations in the declining sector, 539 thousand workers left firms because of job destruction. While 1,090 thousand jobs were destructed there, 551 thousand workers engaged in these jobs were reallocated into other establishments within the same firms. Consequently, annual separations amounted to 3,789 thousand on average in the overall labor

market, and 14.2 (=539/3,789*100) percent of them was at least generated by job destruction.

The Difference by Enterprise Size

Section 2 has indicated that the enterprise sizes played a crucial role in gross job flows. Then what kind of structural difference did the enterprise sizes make in labor flows generated by job creation and destruction? Figure 2 presents the annual labor flows of establishments in large enterprises totally employing 1,000 or more workers on June 30, and Figure 3 does those of small enterprises employing more than 5-29 workers on June 30. They are the annual averages from 1985 to 1992.

Of large enterprises, the average proportion of the stable sector was small compared to that of total economy shown in Figure 1; most establishments in these large firms changed net employment in a year. The striking feature for labor flows of the large firms is the large proportion of movements across different establishments within the same firms. Reallocation across establishments had the effect on employment adjustment in large firms. And the amount of separations from the job declining sector was almost the same as that from the job growing sector. In the declining sector of large firms, separations were less than sum of labor inflows. That is, it means that separations by job destruction were not observed, on average, in large firms.

In addition to reallocation across establishments, the temporary transfer of employment to subcontracting firms avoided being unemployed from the declining sector of large firms. The Survey on Employment Trend annually inquires the reasons for separations from firms. Table 2 shows its result about ordinary male employees separated from the job declining sector of large firms from 1991 to 1992.[8] Among 45-to 54-year-old males, the temporary transfer was the second main reason for separations. The temporary transfer enabled about one-fifth of separated male workers aged 45-54 to find new jobs in subcontracting firms within the business group (keiretsu).

Of small enterprises in Figure 3, one remarkable feature for labor flows is the large proportion of employment in the stable sector relative to the establishments in large firms. It was almost the same as the job growing and declining sectors. This means that every small establishments did not always face the instability of employment. Still, about two-thirds of small establishments faced to the high degree of job flows. The large difference in separations and hirings appeared between the job growing and declining sectors in small firms. Hirings in the growing sector were larger by 2.4 times than in the declining sector. By contrast, separations from the declining sector were larger by 1.9 times than those from the growing sector. As these results, the average separations by job destruction in small firms amounted to 357 thousand persons in a year. Among total separations from small firms, 31.1 (=357/(347+130+670)*100) percent of them came from job destruction; about 30 percent of separations from small firms was involved by destruction and 70 percent of them was generated by reshuffling of employment. Remember the proportion of fires was less than 10 percent of all the separations from the small firms. And the proportion of separations by job destruction was largely different from the overall case (that is 14.2 percent) and large firms (that is none). It clearly decreased with enterprise sizes: 20.1 percent for firms with 30-99 employees, 11.2 percent for firms with 100-299 employees, and

4.3 percent for firms with 300-999 employees. In total, the separations by job destruction were 539 thousand persons, and those from firms with less than one hundred workers amounted to 523 thousand persons. Most separations by job destruction were concentrated on these small firms.

On the other hand, while Figure 1 shows that 1,352 thousand gross jobs were totally created on average, Figure 3 shows that small firms created 410 (=721+24+24-347-12) thousand gross jobs. In addition, the firms employing 30-99 workers annually created 263 thousand gross jobs on average. That is, almost a half of total gross job creation was generated by the firms with 5-99 employees. It implies that small firms played a crucial role in generating new employment opportunities.

How does net job creation vary by firm size? The net job creation rate is defined as the gross job creation rate minus the gross job destruction rate. Figure 1 shows that the total net job creation rate was 0.9 (=4.5-3.6) percent during the 1985-92 period. Computed from Figure 2, the net job creation rate of large firms was 0.6 percent. Computed from Figure 3, the net job creation rate of small firms was 0.2 percent. While the gross job creation rate was higher for small firms than for large firms, so was the gross job destruction rate. As a consequence, the net job creation rate became smaller in small firms than in large firms.

Table 3 reports the detail of the gross job creation and destruction rates, the net job creation rates, and the employment shares by enterprise size for the 1985-92 period on average. As firms with less than 100 employees accounted for 45.6 percent of total employment, these firms with the high gross job flow rates played the major role in gross job creation and destruction in total economy.[9] However, common to the case of the manufacturing plants in the United States (Davis, Haltiwanger, and Schuh (1993)), the empirical results produce no monotone pattern of net job creation with firm sizes; net job creation rates by firm size exhibit a ∩ shape. Although the gross job creation rate of firms with 5-29 employees was the highest, the net job creation rate of these firms was the lowest In contrast. Instead, the medium enterprises such as firms with 100-299 and 300-999 employees had the high net job creation rates.

4.The Birth and Death of Establishments

There are two remarks on the analysis in Section 3. One is, as the Survey on Employment Trend does not include job creation by birth of establishments nor job destruction by death of them, the above results would understate the true job flows and labor flows in total economy. Apart from job creation and destruction of survived firms, however, there are few data on job flows by birth and death of establishments in Japan. All what can be known is the date when establishments opened their business. It is reported in the Establishment Census conducted by the Statistics Bureau, the Management and Coordination Agency. I approximate the gross job flows by entry and exit of firms using these alternative data.

The other remark is that the Survey on Employment Trend does not cover a sample of establishments employing less than five workers. In addition, a firm is not distinguished by state of legal organization: an individual proprietorship and a corporation.[10] The corporation is the state of organization of an establishment which is legally incorporated under the law.[11] The

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individual proprietorship is the state of organization which is not incorporated and is managed by an individual on his or her own.[12] The tiny firms employing less than five workers largely consist of these individual proprietorships.

Table 4 reports the composition of ordinary employment distinguished by firm size and legal organization in non-agricultural industries. These data are quoted from the Establishment Census in 1991. Among 40,375 thousand ordinary employees, 8.03 percent of them belonged to firms employing less than five workers. While 92.3 percent of workers in firms with five or more workers belonged to corporations, only 49.4 percent of workers in firms with less than five workers did. Job flows of individual proprietorships might be different from job flows of corporations because of the difference in the adjustment cost of entry and exit of firms. Therefore, this section also examines job flows by birth and death of firms, distinguishing these two kinds of legal organization.

Job Openings by Birth of Firms

I compute job openings by birth of firms in the private sector as follows. The Establishment Census reports the data on the opening year when the establishment began present economic activities at the present location. And it also reports the data on employment of these establishments in the following years. For instance, we can observe total employment on July 1, 1991 in the establishments which were born during January 1, 1987 and June 30, 1991. This employment implies how many jobs were created for the four and a half years because establishments were opened between 1987 and mid-1991.[13]

The first column of Table 5 shows the number of firms opened after 1987 by mid-1991. 571 thousand corporations and 587 thousand individual proprietorships were born during the period. The second column shows the annual average of job openings defined as employment of these firms on July 1, 1991 divided by 4.5. As a result, the openings of corporations annually created 1,531 thousand jobs, and the openings of individual proprietorships created 413 thousand jobs on average. I measure an annual job creation rate by birth of firms as a ratio of such created jobs to total employment on July 1, 1986. The third column of Table 5 shows these rates. The job creation rate was annually 4.2 percent for corporations and 3.4 percent for individual proprietorships. While the job creation rate of existing firms was 4.5 percent shown in Figure 1, the rates by birth were a little smaller than it.[14, 15]

Table 5 also shows the job creation rates by birth of firms in some industries. The job creation rate of corporations was higher than that of individual proprietorships in manufacturing, wholesale and retail trade, and service industries. It was particularly high in the service industry. Among individual proprietorships, the job creation rate of the manufacturing industry was lower than the rate of the wholesale and retail trade, and service industries. This result is common to those observed in other developed countries (Contiti and Revelli (1993)).

Job Closures by Death of Firms

I compute job closures by death of firms as follows, using the Establishment Census conducted in 1986 and 1991. These data report, among establishments managed on July 1, 1986, how many firms among them survived on July 1, 1991. Let X_{86} be the total number of

establishments opened their business before 1986, and X_{91} be the number of the establishments surviving in 1991 among them. Then X_{91}-X_{86} means the number of establishments which were abolished during 1986 and 1991. If the establishments born before 1986 totally employed L_{86} workers in 1986, the average employment was then L_{86}/X_{86}. Hence, I define the annual number of jobs destructed by death of these firms during the period as $(X_{86}-X_{91})L_{86}/(5*X_{86})$ and the annual job destruction rate by death of firms is defined as $(1-\exp(1/5*\ln(X_{91}/X_{86})))$. The limitations of this computation are shown in the end of this section.

Table 6 reports the computed results for the establishments in the private sector. The first, second, and third columns of Table 6 present X_{86}, L_{86}, X_{91} by kind of legal organization and industry respectively. The fourth column shows the number of jobs destructed by death of firms. The death of individual proprietorships annually destroyed 553 thousand jobs on average, and 526 thousand jobs were destroyed by death of corporations. The fifth column of Table 6 shows the job destruction rates by death of firms. In total industries, while the job destruction rate was 5.1 percent for individual proprietorships, it was only 1.5 percent for corporations. The job destruction rate of existing firms was 3.6 percent shown in Table 3, but its rate by death of corporations was much smaller than it.[16] By industry, jobs were largely destructed by death of establishments in the wholesale and retail trade industries, particularly among individual proprietorships.

However, there are several limitations of the results shown in Table 6 in order to estimate the true job flows by death of firms. They all suggest that the above computation of jobs destructed by death of firms may overstate the true ones. Firstly, the decrease in the number of individual proprietorships might partly come from the fact that some of them legally transformed to corporations during the period. Then these incorporated firms from individual management were not actually dead, and then the destructed jobs from individual proprietorships computed here would be the overstated ones. Secondly, regarding to firms distinguished by industry, the decrease in firms within one industry was partly because some establishments changed their business into the other industries. Then these firms were not actually abolished and job closures might not occur there. Thirdly, the decrease in firms born in one year was partly because some establishments changed their locations into other areas and renewed the opening year. Then these firms changing their locations would report the different opening years from those reported in the past. Although these firms were not actually dead, they were included in the closed firms. As the fourth notice, the definition of job destruction by death of firms is assumed that the death will randomly visit all the firms. However, the probability of the death will not be homogeneous between establishments; the smaller firms will be more likely to stop their business. If the average employment of the abolished firms was below the total average over all the firms, that is L_{86}/X_{86}, the realized destructed jobs would be smaller than the ones computed in Table 6. In sum, it is noteworthy that true job destruction by death of firms might be less than the one shown here.

5. The Job Flows in Several Countries

This section views the difference in gross job flows in Japan and other countries. The OECD

Response (1993) and Employment Outlook (1994) by Organization of Economic Co-operation and Development (OECD) showed the characteristics of job flows among several countries. Unfortunately, OECD (1993, 1994) did not include the data on Japan. Using the results in the previous sections of this paper, I compare the job flows between Japan and other countries.

Table 7 presents the gross creation and destruction rates of existing establishments (denoted as expansions and contractions) and those rates by birth and death of establishments (denoted as openings and closures). The data are quoted from OECD (1994) except for Japan.[17] I use the results of Japan shown in Section 3 and Section 4. The gross job flows of existing establishments in Japan are the result of establishments employing five or more workers. Therefore, as the job flows by birth and death, I do not employ the results of individual proprietorships but the results of corporations. As Table 4 has reported that most of the establishments employing five or more workers are corporations, it appears to be suitable to compare job flows of the existing establishments with job flows by entry and exit of corporations.

Table 7 reports that in Japan the job flow rates of existing firms were higher than those by birth and death of firms. It was the similar feature observed in most countries except for France, the United Kingdom, and the United States. And the job destruction rate of existing firms was lower in Japan than in most countries except for the United Kingdom and the United States. The well known feature for the employment system in Japan is that employers and employees are committed to a long-term employment relationship. It is often stressed that Japanese firms never lay off workers and the job security is guaranteed because of the long-term employment contract. This long-term employment relationship might reflect the small job contractions in Japan relative to many other countries.

The reason why the job destruction rate of existing firms was higher in Japan than in the United States and the United Kingdom was not obvious. One reason may be in inadequacy of the data to measure the accurate components of job turnovers, especially in the United States and the United Kingdom as OECD (1994, p.108) suggested. Another reason for this from the Japanese side will come from the large proportion of workers in small firms in Japan. The small firms do not always commit to the long-term employment relationship as the large firms do. As noted in Section 1, more than 60 percent of workers belonged to small firms employing less than one hundred workers while less than 50 percent of workers belonged to the small firms in the United States and the United Kingdom in the late 1980s (OECD (1994, p.124)) Section 2 has shown that firm sizes played a key role in the amount of the gross job flow rates. The gross job destruction rate, other things constant, decreased with firm sizes. The high degree of gross job destruction in total economy would be due to this large proportion of workers in small firms generating the large gross job outflows.

Then, what was the reason for the low unemployment rate in Japan? Table 7 suggests that the low job destruction rate of existing firms relative to many other countries might contribute to the low unemployment in Japan. In addition to this, the results of this paper indicate that there are two other crucial reasons for it with respect to the relationship between job flows and labor mobilities. The one is the frequent movements across establishments within the same firms.

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Figure 1 has shown that while gross job destruction annually happened to 1,090 thousand workers on average, 551 thousand workers among them moved to other establishments of the firms and did not experience unemployment. Figure 2 has presented that the movements from the declining establishments to the other establishments were significant especially in large firms. When job losses happened among establishments in large firms, they reallocated the employees engaged in these jobs to the other establishments and avoided unemployment. This reallocation policy would serve workers the new jobs even if the previous jobs were destructed.

The other important reason is that job destruction by exit of firms was rate in Japan. Table 7 shows the job destruction rate by death of firms in Japan was the lowest among the countries listed there, although the definition of firm closures would be different between countries. Remember, nevertheless, Section 4 has indicated that even this figure of Japan might be overstated. And it was not the consequence of excluding individual proprietorships. Table 6 has shown that the job destruction rate by death of firms was 1.5 percent for corporations and 5.1 percent for individual proprietorships. When the weighted average over establishments employing more than five workers is computed using employment shares of corporations and individual proprietorships as their weights, it is as most 2 percent and still remains low as well as Germany.

OECD (1994) indicated that the job expansions and closures might be largely overstated in the United States. Therefore, it also showed the alternative results of the U.S. manufacturing employment using the Longitudinal Research Database (LRD) which is the more precise to measure job turnover (OECD (1994, p.108)). Then the job creation and destruction rates by birth and death of the manufacturing establishments with five or more employees in the United States were 1.6 and 2.7 percents during 1985-1988 respectively. In Table 5 and 6, the job creation and destruction rates by birth and death of the manufacturing corporations in Japan was 2.5 and 1.0 percents during 1987-1991.[18] Even if limiting to the manufacturing employment, the job losses by firm closures in Japan seemed less than those in the United States. The low job destruction rate by death of firms would closely relate to the low unemployment rate in Japan.

The detail explanation of the reason for the low job destruction rate by death of firms is now beyond the scope of this paper. However, there are several hypotheses to explain it with respect to three institutional aspects: the large scale retail store law, the government subsidies for employment adjustment, and the absorption and merger by business groups (keiretsu). The first is the role of the large scale retail store law. This law is to regulate the openings of new establishments and the business hours and days of large scale retail stores. It will save small retail stores from being closed through the competition with large scale stores. Without this law, more small retail store would have been abolished, so that destructed jobs by firm death would have increased more from the wholesale and retail trade industries. The second is the role of the government subsidies for employment adjustment. In recessions, the Ministry of Labour frequently provided the subsidies to some firms in the declining industries which the Minister of Labor judged to be in the bad business conditions. Then some firms in these industries could be financially supported in either of the following cases: the business was temporally stopped, some employees were temporally transferred to other firms, or some employees were needed to be

occupationally retrained. The provided subsidies were totally 19.8, 39.3, and 26.6 billion yen in 1986, 1987, and 1988, while they were 6.4, 5.0 and 2.3 billion yen in 1989, 1990, and 1991. This subsidy policy would avoid some firms being closed and it would save the workers in the declining firms from being unemployed in recessions. The third candidate is the role of the absorption and merger by business groups. When corporations committing to the business groups failed their own business, some of them might be merged or absorbed into other corporations of the keiretsu memberships. Actually the Fair Trade Commission Report (1992) shows that these absorption and merger rapidly increased during the 1980s in Japan. They would also reduce the separations by job destruction due to firm death, so that unemployment would have been also reduced.

It is the future works to examine which factor of the three and other institutions contributed the most to the low gross job destruction rate by firm death.

6.Conclusion

The results of this paper are summarized as follows:

(i) The gross job creation and destruction rates of establishments depended on the aggregate demand conditions, industries, and enterprise sizes. Among these three factors, the enterprise sizes played the most important role in gross job flows. Gross job creation and destruction rates decreased with the enterprise sizes.

(ii) About 14 percent of all the separations was at least due to job destruction on average during the 1985-1992 period, and the rest was due to workers' self interest given the job distribution. From small firms with 5-29 employees, however, about 30 percent of separations was generated by job destruction. Most of separations by job destruction in total economy occurred from firms employing less than 100 workers.

(iii) When jobs were destructed among large firms with 1,000 or more employees, they frequently reallocated employment across establishments. Hence, the separations by job destruction were not statically observed among the large firms. And even if senior workers were separated from the declining sector, some of them were re-employed by the subcontracting firms and were escaped being unemployed.

(iv) About a half of gross job creation in total economy was engendered within small firms with less than 100 employees. However, because of the high gross job destruction rate as well as the high gross job creation rate of the small firms, there was no strong pattern of the net job creation rates by firm size.

(v) Comparing the job flows between Japan and other countries, the job destruction rate of existing firms was relatively low in Japan compared to other countries. And the notable feature of the job flows in Japan was the low job destruction rate by death of firms. In addition to the long-term employment relationship and the employment reallocation system of large firms, few job losses by firm closure might contribute to the low unemployment rate in Japan.

Notes

1 The proportion of firing was reported to be 3.5 percent of all the separations in 1992. By enterprise size, it was 0.6 percent for firms employing 1,000 or more workers, 2.4 percent for firms employing 300-999 workers, 2.1 percent for firms employing 100-299 workers, 3.2 percent for firms employing 30-99 workers, and 6.7 percent for firms employing 5-29 workers.

2 See Hamermesh (1993) for a summary of these researches.

3 The detail explanation of the Survey on Employment Trend was shown in OECD (1987, p.208-209).

4 The ordinary employees are the salary-earning employees on an indefinite contract.

5 Hamermesh et al. (1994) stress to distinct between job flows and employment changes with respect to capturing the precise adjustment costs at the macro level.

6 That is, the width of each bar is the annual average of the sum of $(x_{t-1}+x_t)/2$ over establishments in each sector during the 1985-1992.

7 That is, separations by job destruction are computed as the sum of $(sp_t-nh_t-tf_t-sc_t)$ for establishments in the job declining sector in year t. The figures in Figure 1 through 3 are the average of them over the eight years.

8 These data do not cover separations from construction industries.

9 Davis, Haltiwanger, and Schuh (1993) indicate that firms with at least 500 employees accounted for 53 percent of job creation and 56 percent of job destruction in the U.S. manufacturing industry for the 1972-88 period. One reason for the large job flows from these large firms is that they accounted for 65 percent of manufacturing employment.

10 Strictly, the legal organizations are divided into three categories: individual proprietorships, corporations, and unincorporated associations. The unincorporated associations are not legally incorporated such as crime prevention associations, learning institutions, and unincorporated trade unions.

11 The corporations are composed of two organizations: companies and corporations excluding companies. The company represents any joint-stock company, limited company, limited or unlimited partnership, mutual insurance company, and foreign company as a whole. The corporations excluding companies are any state of organization of incorporated establishments. They are such as a religious juridical persons, cooperative associations, medical juridical persons, school juridical persons, corporate juridical persons, and foundations.

12 The individual proprietorships include establishments under the joint management of individuals.

13 However, the treatment of changes in ownership is ambiguous in this definition. When the ownership changed, some establishments would regard it as the change their business and others would not. It is impossible, therefore, to differentiate changes in ownership from the opening of a new business.

14 Using the same method, the job creation rate by birth of firms can be computed during the 1982-1986 period. The data before 1981 do not contain information on the opening years of corporations. The rate of corporations was 4.0 percent, and the rate of individual

proprietorships was 4.3 percent then.

15 Although the jobs shown in Figure 1 through 3 are measured in terms of ordinary employees, the jobs created for individual proprietors, family workers, salaried manager or directors, temporary or daily employees as well as regular employees are included in the results shown in Table 5. This is the same for the results of the jobs destructed by death of firms shown in Table 6.

16 Using the same method, the job destruction rate by death of firms can be computed during the 1982-1986 period. The rate of corporations was 2.2 percent, and the rate of individual proprietorships was 4.6 percent then.

17 The details on sources, definitions and methods of data collection on job gains and job losses except for Japan are show in OECD (1994, p.130-133). OECD focused on employees in the private sector excluding primary industries, public administration and non-market services. The self-employed are also excluded. It was undertaken at the establishment level with the exceptions of Canada, Italy, and the United Kingdom (OECD (1994, p.104)).

18 During the 1982-86 period, the job destruction rate by death of manufacturing corporations were 2.0 percent while the job creation rate by birth of these corporations were 2.5 percent.

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Figure 1. Labor Flows (Total)

Ordinary Employment (thousand persons)

78

14,177

507

2,630

47

216

0

4,043   2

1,553

311

The Job Growing Sector
($g_t > 0$)

The Job Stable Sector
($g_t = 0$)

11,807

15

281

1,185

216

50

2,020

539

551

The Job Declining Sector
($g_t < 0$)

- -

■ Status Changes (sc_t)

☐ Transfers from other establishments of the firms (tf_t)

☐ New Hires (nh_t)

0

☰ Separations (sp_t)

▨ Separations by Job Destruction

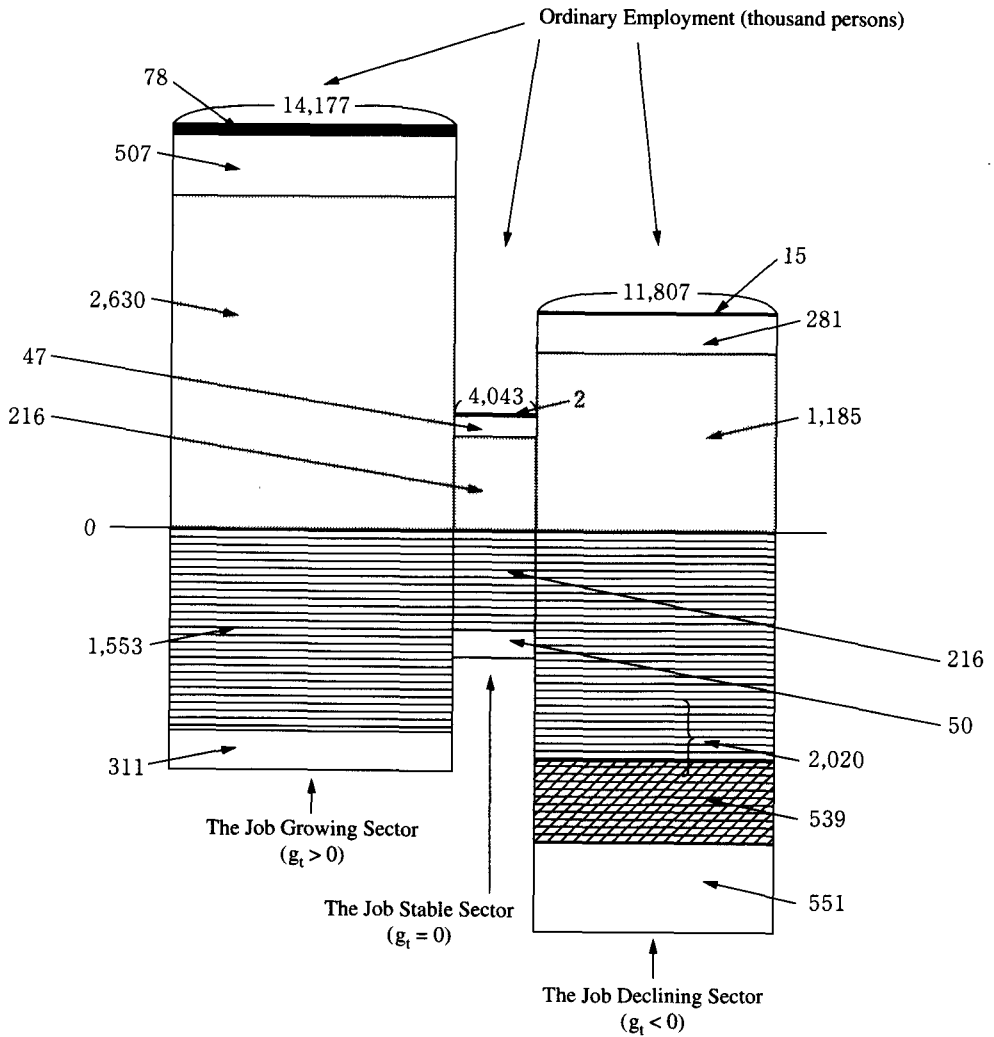☐ Transfers to other establishments of the firms (tt_t)

45

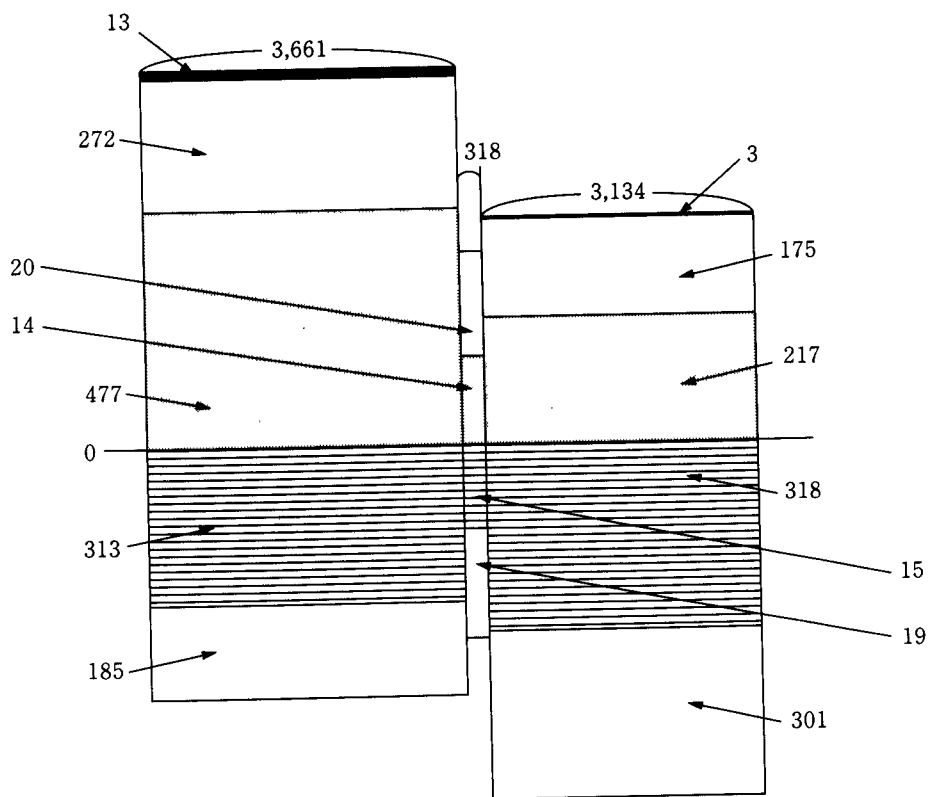Figure 2. Labor Flows of Large Firms

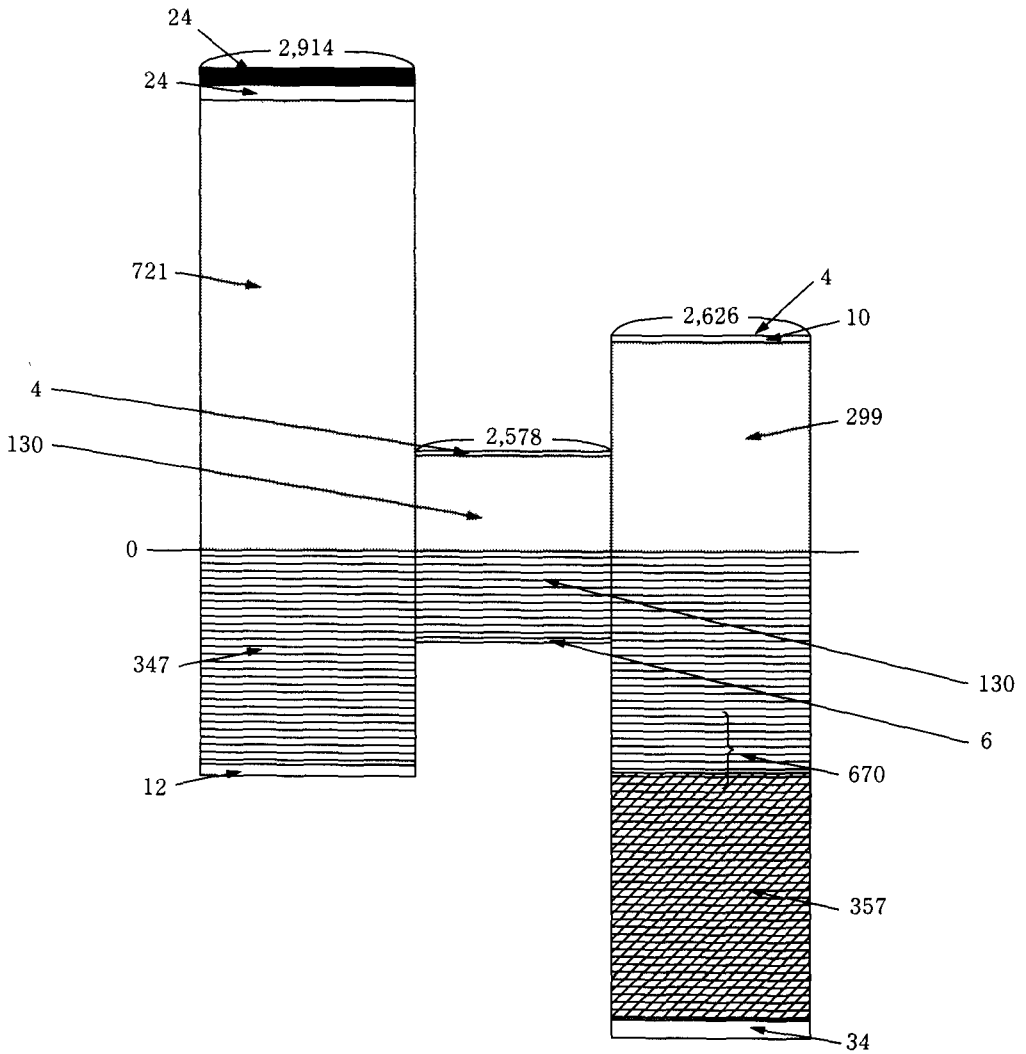## Figure 3. Labor Flows of Small Firms

Table 1. Regression of the Job Creation Rate and the Job Destruction Rate
(Parentheses are t-values)

	The Job Creation Rate (g_t)		The Job Destruction Rate (^-g_t)	
Constant	.06100	(25.1)	.07280	(19.9)
1985	.00848	(3.33)	−.00032	(−.09)
1986	.00140	(0.54)	.01491	(4.37)
1987	.00173	(0.67)	.01103	(3.26)
1988	.00722	(2.89)	.00014	(0.04)
1989	.00971	(3.89)	.00536	(1.52)
1990	.00682	(2.73)	−.00124	(−.35)
1991	.00454	(1.84)	.00119	(0.33)
Mining	−.00936	(−1.68)	.04837	(7.92)
Construction	.00662	(2.38)	.01133	(2.77)
Manufacturing	−.01281	(−7.36)	−.00920	(−3.52)
Public Services	−.01739	(−3.55)	−.02128	(−3.32)
Transport & Communication	.00343	(1.13)	.03187	(8.11)
Wholesale & Retail Trade	.00886	(3.33)	.01216	(3.18)
Finance and Insurance	.00680	(1.83)	.00558	(1.04)
Real Estate	.01712	(3.14)	.02404	(3.00)
5−29	.11485	(54.9)	.12212	(45.1)
30−99	.04310	(23.3)	.03292	(13.2)
100−299	.02178	(11.5)	.01010	(3.86)
300−999	.00901	(4.65)	−.00451	(−1.63)
Samples	38,503		36,912	
adjR^2	.0884		.0727	

The reference year is "1992". The reference industry is "service industries". The reference firm size is "1,000 or more". The public services include electricity, gas, water, and steam industries. Firm sizes are distinguished by enterprise size (not by establishment size).

Table 2. Proportions of Separations by Motivation
From the Job Declining Sector among Large Firms.
(Ordinary Regular Male Employees during 1991-1992)

Percent

Reason\Age	20−34	35−44	45−54	55−59	60−64	65−	Total
Termination of Contract	7.0	12.3	14.7	6.8	8.5	40.5	9.0 (26)
Employers Convenience	1.5	1.5	2.7	4.2	0.3	1.4	1.7 (5)
Temporary Transfer	4.1	13.3	20.6	11.4	0.2	0.5	7.2 (20)
Return from Temp Trans	1.4	3.3	4.8	1.8	0.3	0.0	1.9 (5)
Retirement Age	0.0	0.0	0.0	31.5	86.3	39.7	18.9 (54)
Discipline	2.9	4.4	0.7	0.7	0.3	0.5	2.1 (6)
Private Reasons	82.1	62.4	46.2	36.8	3.6	16.2	56.4 (162)
Sickness & Injury	1.0	2.9	10.3	6.8	0.5	1.2	3.0 (8)
Total	100.0 (120)	100.0 (38)	100.0 (34)	100.0 (33)	100.0 (50)	100.0 (2)	100.0 (288)

Note. Numbers are proportions of separations by motivation in each age category. Integers in parentheses of "Total" are the number of wokers (thousand persons). "Returns from Temp Trans" means returns from temporary transfar.

Table 3. Gross Job Creation and Destruction Rates, Net Job Creation Rates, and the Employment Shares by Firm Size

Firm Size (Employees)	Gross Job Creation	Gross Job Destruction	Not Job Creation	Employment Share
Total	4.5	3.6	0.9	100.0
5−29	5.1	4.8	0.2	27.0
30−99	4.7	3.9	0.8	18.6
100−299	4.3	2.8	1.5	17.2
300−999	4.7	2.9	1.8	13.5
1000 or more	3.7	3.1	0.6	23.7

The firm sizes are distinguished by enterprise size.

Table 4. Proportions of Ordinary Employees

(percent)	Individual Proprietorship	Corporation	Total
Employing less than 5 workers	4.06	3.97	8.03
Employing 5 or more workers	7.17	84.80	91.97
Total	11.23	88.77	100.0

Total number of ordinary employees is 40,375 thousand persons.

Table 5. Job Creation by Birth of Establishments

	Establishments Opened during 1987−91	Total Employment （thousand）	The Annual Job Creation Rate by Birth of Firms（%）
Total Industry			
Corporations	571,298	1,531	4.2
Individuals	587,274	413	3.4
Manufacturing			
Corporations	72,343	288	2.5
Individuals	36,740	32	1.8
Wholesale and Retail Trade			
Corporations	216,689	459	9.5
Individuals	329,364	236	3.2
Service			
Corporations	142,555	400	6.2
Individuals	164,710	114	3.9

Note. The job creation rate is computed as the ratio of employment of establishments opened during 1987−91 to total employment on Jury 1, 1986. Total industries do not cover agricultural industries. "Individuals" represents individual proprietorships.

Table 6. Job Destruction by Death of Establishments　(in thousand)

	Firms Opened by 1986	Employment in 1986	Firms Surviving in 1991	Annual Job Loss by Death of Firms	Job Destruction Rate (%)
Total Industry					
Corporations	2,352	36,818	2,184	526	1.5
Individuals	4,016	12,013	3,162	553	5.1
Manufacturing					
Corporations	395	11,549	375	112	1.0
Individuals	479	1,780	371	80	5.0
Wholesale and Retail Trade					
Corporations	979	9,980	862	238	2.5
Individuals	2,063	5,667	1,510	304	6.1
Service					
Corporations	483	6,535	466	46	0.7
Individuals	981	2,960	797	111	4.1

Table 7. The Job Flows in Several Countries
Average Annual Rates as a Percent of Total Employment

Country	Period	Expantions	Openings	Contractions	Closures
Canada	1983—91	11.2	3.2	8.8	3.1
Denmark	1983—89	9.9	6.1	8.8	5.0
Finland	1986—91	6.5	3.9	8.7	3.4
France	1984—92	6.7	7.2	6.3	7.0
Germany	1983—90	6.5	2.5	5.6	1.9
Italy	1984—92	8.4	3.9	7.3	3.8
Japan	1985—92	4.5	---	3.6	---
Japan	1987—91	---	4.2	---	1.5
New Zealand	1984—92	8.3	7.4	11.3	8.5
Sweden	1985—92	8.0	6.5	9.6	5.0
United Kingdom	1985—91	6.0	2.7	2.7	3.9
United States	1984—91	4.6	8.4	3.1	7.3

Sources: Employment Outlook （1994） except for the results of Japan. The results of Japan are the ones computed in Section 3 and 4 in this paper. The job expansions and contractions in Japan are computed about establishments with five or more employees. The job openings and closures in Japan are computed about corporations.