Effects of Public Works on Private Employment after a Natural Disaster: A Case in the Stricken Area of the Great East Japan Earthquake[1]

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Abstract

After the Great East Japan Earthquake on March 11, 2011, the government of Japan commenced rich-funded reconstruction operation. However, there are said to be severe side effects: reconstruction requires plenty of public works, say, to rebuild infrastructure, thus, there is an inevitable shortage of labor force in the private sector. This situation can be interpreted as crowding-out of private demand through the "labor market channel of fiscal policy" that Alesina et al. (2002) emphasized. If this is the case in the stricken areas, those areas will face secular stagnation in the future.

In this study, we estimate the hazard function of job vacancies in private sectors using 39,437 job posting data from July 1 to December 31, 2015. The results show that an increase in the number of job postings in the construction industry prolongs the vacancy duration of private employment, especially in marine product industry, as we expected.

Keywords: public works, natural disaster, job vacancy, job posting data, survival analysis
JEL classification number: H32, H54, H84, J63, Q54

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1. Introduction

On March 11, 2011, Japan suffered an earthquake of 9.0 on the Richter scale that caused widespread damage to the eastern part of its main island, including the Tokyo metropolitan area. The tsunami that followed was tremendous, , and the entire disaster claimed the lives of 15,848 people (the official recorded death toll as of February 10, 2012). The height of the tsunami was considerable, with reports measuring the maximum height of the wave at approximately 38 meters, and the damage was spread wide to a continuous stretch of land of more than 500 km.

Just after this tragedy, the government of Japan commenced their reconstruction operation. The government set 10 years as the timeframe for reconstruction, and divided the time period into a "Concentrated Reconstruction Period"(2011-2015), which was allocated ¥25 trillion (~$250 billion), and a "Reconstruction and Revitalization Period"(2016-2020), which was allocated ¥6.5 trillion (~$65 billion).[2]

However, this rich-funded reconstruction policy had severe side effects. Intrinsically, reconstruction requires a great deal of public works, say, to rebuild infrastructure, and there is an inevitable shortage of labor force in the private sector. As a result, some stricken areas are still under recovery, and mass media reports that there continues to be a serious shortage of labor for local industries, such as the marine industry.

In economics, this situation can be interpreted as crowding-out of private demand by fiscal expansion. Especially, we can regard this shortage of private employment as crowding-out through the "labor market channel of fiscal policy" that Alesina et al. (2002) emphasized. These authors insisted that an increase in public wages or employment put upward pressure on private sector wages and then decreased private investment as a consequence of decreased profit. If this is the case in the stricken areas, those areas will suffer such side effects, and the economy may face secular stagnation in the future.

In this study, we investigate this possibility by testing whether an increase in the number of job postings in the construction industry prolongs the vacancy duration of private employment using microdata. Needless to say, not all the vacancies in the industry are created by government reconstruction expenditure. However, we believe it is important to examine this relationship for successful development in the area.

The analytical strategy is as follows. We download daily data on individual job postings registered at Hello Work,[3] the Japanese public Employment Service Center.

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[2] Reconstruction Agency HP (http://www.reconstruction.go.jp/english/).

[3] Hello Work is a public Employment Service Center managed by the Japanese government. Currently, Hello Work has 446 offices all over the country, and all residents, including foreigners, can use its services. Visit the Hello Work Internet Service website at https://www.hellowork.go.jp/

Each posting is uploaded on the day a firm begins its search for a new employee and withdrawn if the vacancy is filled before the expiry date of the advertisement; therefore, we can consider the period between the posting and withdrawal of the job as the vacancy duration. We use the number of vacancies in the construction industry as well as in the government sector as individual variables. Then, we estimate the hazard function of job vacancies in other private sectors and test the significance of the individual variables explained above.

The job posting data are those that identified Miyagi Prefecture in the stricken area as the workplace and were uploaded from July 1 to December 31, 2015. The total sample size is 39,437 postings. Miyagi Prefecture is large and has areas where the damage was not substantial, which means that there is variation in the movement of government expenditure in this prefecture. The differences in the vacancies caused by this variation are helpful in investigating the existence of the labor market channel of fiscal policy.

The remainder of this paper is organized as follows. In section 2, we review the previous literature on the three fields relevant to this study. In section 3, we discuss the data. Then, we present the results of our survival analysis in section 4. In section 5, we offer our conclusions.

2. Literature Review

The following three areas of economics are significantly relevant to this study. It is important to understand the relevance and position of this study within these fields from an academic perspective.

The first field involves the crowding-out effects of fiscal policy. As already discussed, Alesina et al. (2002) showed that an increase in government expenditure decreases public investment through the crowding out of private employment. Other literature in this field can be categorized further into two groups. The first group investigated the effect of fiscal items on private investment. For example, using EU-15 data, Romero-Ávila and Strauch (2008) regressed fiscal items such as government consumption on private investment share of GDP and found negative correlations for some items. In addition, Kameda (2014) estimated a threshold vector regression model (TVAR) using Japanese data and insisted that the labor market channel of fiscal policy exists in Japan, especially when its financial and fiscal conditions were worse. The second group analyzed an association between public and private employment. Employing OECD panel data, Algan et al. (2002) found that creation of 100 public jobs might eliminated about 150 private sector jobs, slightly decreased labor market participation, and increased the number of unemployed workers by about 33.

The present study can be considered as belonging to the second group. However, all the previous studies in this group employed annual macro-data. Thus, we can say that our analysis using microdata is quite novel in this field.

The second relevant field involves the searching behavior of employers for potential employees. A recent development in this area is utilizing microdata for empirical analysis. For example, Burdett and Cunningham (1998) used the 1982 Employment Opportunity Pilot Project survey in the US, with the sample size of 1,104, to show that vacancy duration become longer when hiring costs, such as training costs, were higher and it became shorter when the firm size of the employer was larger. They also showed that starting wage rates of the applicants and unemployment rates of the area had insignificant effects on vacancy duration. Andrews et al. (2008) found similar results after analyzing the records of the Lancashire Careers Service for 1985–92 in the UK. Moreover, Davis et al. (2014) analyzed the German Job Vacancy Survey, covering approximately 55,000 recruitments into vacant job positions from 2000 to 2010, and found similar results; however, unlike Burdett and Cunningham (1998), they found that unemployment rates shortened vacancy durations.

Davis et al. (2013) analyzed the Job Openings and Labor Turnover Survey, a yearly survey at the establishment level, to examine the effects of conditions and environments on recruitment. The sample size of this survey was very large, with 577,268 respondents surveyed between November 2000 and November 2006. Using this large data, Davis et al. (2013) found the following: (1) Job-filling rates were counter-cyclical, thereby having a negative relationship with aggregate employment. (2) However, they showed a positive relationship with the employment growth of the establishments in the cross-section. (3) Job-filling rates had a positive relationship with turnover rates and a negative relationship with the size of the establishment. (4) The matching function showed an increasing return of vacancy in the employer-level hiring technology.

In the present study, we investigate how long job postings in the construction industry, which are assumed to be created by government expenditure, prolong the vacancy durations of other industries, especially local industries such as fishery and manufacturing, including the marine products industry, in the stricken area. To the best of our knowledge, no previous study has empirically examined the competition of firms in filling job vacancies. Moreover, although some studies in Japan, such as Sasaki et al. (2013), used individual job-search microdata, their purpose was to estimate the matching function. Thus, our study can provide novel insights to the labor market by both analyzing the competition of firms in filling job vacancies and using individual job posting data to investigate the searching behavior of firms in Japan.

The third relevant field involves disaster economics. This area of economics studies the effects of natural disasters, such as floods and earthquakes, on the economy of the stricken area. For example, employing multi-country panel data for 1971–2008, Cavallo, Powell and Becerra (2010) re-estimated the amount of damage caused by the 2010 Haiti earthquake by regressing the number of deaths, per capita gross domestic product (GDP), population, etc. on the amount. In addition, using state-level US panel data for 1977–2009, Fidrmuc, Ghosh and Yang (2015) estimated a panel vector autoregressive (PVAR) model with several macro-economic variables and showed positive fiscal multipliers of government expenditure for reconstruction. However, as Noy and Cavallo (2010) showed, these studies focus on the disaster's effect on the GDP and show less interest in the labor market.

It should be noted that, in contrast to the main stream of disaster economics, some studies did focus on the labor market in Japan. Higuchi et al. (2012) analyzed the market approximately one year after the Great East Japan earthquake and found a mismatch between job seekers and job vacancies in some industries, such as marine products. Genda (2014) reviewed 511,965 individual cases from the Employment Status Survey executed by the Japanese Ministry of Economy, Trade and Industry, and showed the following: (1) The earthquake's effects on the labor market are spread around Japan. (2) The effects are significant on job seekers who are younger or have low academic achievements. (3) Former habitants of areas in Fukushima Prefecture with evacuation orders seek new jobs less positively. Ohta (2016) summarized the employment environment for the 2–3 years after the strike and pointed out that despite the mismatch almost being resolved, the workers' conditions have worsened. In addition, Ohtake et al. (2012) studied the labor market after the Hanshin-Awaji earthquake in Kobe, Japan, in 1995. They estimated the auto-regressive moving average (ARMA) model to analyze the job searches, job postings, and job placements at eight public employment services offices in the stricken area and found the following: (1) The number of job placements for part-time workers declined in the short term, rebounded in the middle, and declined again later. (2) There was a mismatch between job seekers and job vacancies for full-time workers in the short term.

Thus, some disaster studies have focused on the labor market, and we can consider the present study as a compliment to them.

3. Data

3.1 Data collection Method

To collect the data for estimation, we write codes using C++ to download individual

job posting data every day from the website of Hello Work, the public Employment Service Center. It should be noted that the Ministry of Health, Labor and Welfare did not permit download using the using the application program interface (API).

A job posting sheet is uploaded on the webpage the day the employer hopes to hire a new employee. If a job seeker requests a job interview at the Hello Work office, the office arranges the interview. If the job contract is accomplished and the vacancy is filled, the Hello Work office removes the job posting sheet. Firms are supposed to withdraw their job postings at the office if they can hire employees somewhere else. After conducting an interview at one of the offices, we find that this procedure is adhered to strictly. Therefore, as discussed in section 1, we consider the period between the posting of the job and its withdrawal as the vacancy duration of each recruiting firm. Each job posting expires at the end of the third month after submission, and the job posting sheet is withdrawn automatically. In our survival analysis, we treat these expired postings as censored data. Firms that could not fill their vacancies can re-submit the job posting sheets after the expiry date; however, we treat the original and the re-submitted sheets as individual job postings.

Regarding this dataset, it should be noted that not all the job postings are uploaded on the webpage. In the application forms for posting jobs, firms can select one of four options for their advertisements: (1) All information, including the firm's name, should be posted on the website. (2) All information, including the firm's name, should be available only on the web to applicants enrolled at the office. (3) All information, excepting the firm's name, should be posted on the website. (4) No information should be posted on the website; that is, the posting is open only to applicants enrolled at and visiting the office. Job vacancies are posted on the website only if options (1) or (3) are selected. Comparing our dataset with statistics released by the Miyagi Labour Bureau, we find that approximately 55% of the firms select option (1) or (3) (Figure 1); however, this is different from the figure of 85%, which was obtained during our phone interview with an official at the Ministry of Health, Labour and Welfare.

3.2 Explanatory Variables in the Survival Analysis

To register their vacancies at the Hello Work office, firms have to answer many questions on working conditions in the job-posting sheet. These questions can be categorized into approximately three types: (1) form selecting question (e.g., recruitment class [full-time, part-time, etc.]; employment status [regular, dispatch worker employed, dispatch worker enrolled, etc.]); (2) figure answering question (e.g., wage; number of paid holidays); and (3) descriptive answering question (e.g., academic history; job experiment

history).[4] Ideally, we should utilize all the information as explanatory variables in the estimation. However, it is difficult, for example, to numerically quantify the descriptive answers. Therefore, in the present study, we employ the following seven types of series as explanatory variables. It should be noted that imposing conditions regarding sex and age is prohibited by law in Japan.[5,6]

(A) Posted wage (upper-bound and lower-bound wage)

The wage band is included in the job-posting sheet. In our analysis, we employ the relative wage of the upper- and the lower-bound figures of the band to the average upper and lower wage, respectively, in the city where the workplace exists; these are expressed as percentages (upper and lower relative wage, hereafter). If firms have greater bargaining power than job seekers do, then the seekers would focus on the lower-bound wage; otherwise, they would focus on the upper-bound wage. Thus, the expected correlation with vacancy durations is positive for the upper-bound wage and negative for the lower-bound wage.

(B) Labor conditions of the construction industry (number of job postings and lower-bound wage)

For examining data describing the vacancy situation of the construction industry around a particular job posting, we use two types of variables. The first is the relative wage of the average lower-bound wage in construction to that of all the industries in the city that is the workplace of the job posting; this is expressed by percentage (relative lower wage in construction, hereafter). The second is the number of vacancies in the construction industry in the city that is the workplace of the job posting. We focus only on the lower-bound figure because we consider that the bargaining power of job seekers in industries other than construction is lower than that of job seekers in construction companies. The correlation of these two variables regarding the labor conditions of the construction industry with vacancy duration is positive if the labor market channel of fiscal policy exists.

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[4] For the job-posting sheet and its application form, see the Hello Work website at https://www.hellowork.go.jp/enterprise/job_offer.html and https://www.hellowork.go.jp/dbps_data/_material_/localhost/doc/kyuujin2803.pdf

[5] However, an age condition can be added under specific situations. For details, see the Hello Work website at https://www.hellowork.go.jp/dbps_data/_material_/localhost/doc/nenrei.pdf

[6] We can retrieve other information from the website, such as working hours, allowance, and social insurance, bonus. Analyzing this information remains for future study.

(C) Holiday conditions

We construct three holiday dummies: Sunday, Saturday, and Both. Although we can find other conditions for holidays in the sheet, such as number of days of paid holidays, we do not use them here.[7]

(D) Recruitment class and employment status

Although there are two types of job posting sheets—one each for full-time and part-time workers—we concentrate on full-time job postings in this study. Regarding employment status, we use four employment status dummies: regular, dispatch worker employed, dispatch worker enrolled, and others. Note that contact workers (Keiyaku and Shokutaku) are included in "others."

(E) Industry dummies

As mentioned in section 2, previous literature shows that differences in the industries have a significant effect on vacancy durations. Thus, we add dummy variables of 20 types of industries as explanatory variables.

(F) Dummies for the first day of advertisement

The closer the day of the job posting is to the end of the submitting month, the shorter the period for hiring becomes, since each job posting expires at the end of the third month after submission. To capture this effect, dummies for the first day of advertisement are added.

(G) Dummies for the first and the last month of advertisement

As the expiry date is assigned monthly, the dataset consists of six overlapping subgroups. To eliminate the individual effects of these subgroups, we add dummies for the months in which the advertisement starts and ends.

3.3 Estimation Period

The dataset we employ for the estimation consists of data collected in Miyagi Prefecture from July 1, 2015 to March 31, 2016. Although the total number of observations is 39,437, the number for estimations is 32,996, since observations from the construction industry and government service are excluded. As explained previously, each job posting expires at the end of the third month after submission and the job-

[7] This point remains for future study.

posting sheet is withdrawn automatically. In our survival analysis, we treat these expired postings as censored data.

4. Estimation Results

4.1 Benchmark

Table 1 shows the benchmark estimation results using the Weibull proportional hazard model. Each figure with no parenthesis indicates the hazard ratio. If $\beta_i > 0$, its hazard ratio is greater than one; else, it is less than one. Therefore, when a covariate with hazard ratio more (less) than one increases, the survival rate of job postings increases (decreases) and the vacancy duration prolongs (shortens).

Row 1 in the table shows the estimated hazard ratio on the upper relative wage. The ratios are significant and estimated from 0.996 to 0.997, which means that a percentage point increase in the upper relative wage decreases the hazard rate of job filling by 0.3–0.4%. Thus, an increase in the upper relative wage prolongs vacancy duration, which is consistent with our expectation in section 3.2.(A).

The ratios on the lower relative wages are shown in Row 2. The ratios are possibly significant, which implies that an increase in the lower relative wage shortens vacancy duration. Note that this finding is different from that of the literature review by Andrews et al. (2008), who concluded that there is no significant effect of wage on the duration.

The most important ratios are those regarding the effects of labor conditions in the construction industry. As implied in Row 3, the relative lower wage in construction is insignificant. This result can be interpreted as follows. As employment in the construction industry is regarded as a channel of counter-cyclical fiscal expenditure, at least in Japan, we can consider the relative lower wages as reservation wage. Thus, based on the search theory of labor economics, the increase in relative lower wages in the construction industry is considered to prolong vacancy durations in other industries. However, as Sasaki (2011) mentioned, we can consider another channel through reservation productivity. If absorption of employment by the construction industry tightens the labor market, firms in other industries may be forced to lower their level of reservation productivity to ensure that their vacancies are filled as soon as possible. Therefore, an increase in the relative lower wage in construction may shorten vacancy durations. In sum, the consolidated result regarding the increase is ambiguous, and so is our estimation result.

In contrast, results regarding the number of construction workers are clear, as shown in Row 4. As all the ratios on the number are significant at 1% and less than one, we can say that an increase in employment in the construction industry prolongs vacancy

durations in the other industries.

Regarding holiday conditions, the estimation results in Rows 5–7 show that setting Saturday and/or Sunday as holiday shortens the vacancy duration. Regarding employment status, the durations for "others," such as contact workers, are significantly shorter than for regular employees (benchmark of employment status here), as shown in Rows 8–10.[8]

4.2 Results by Industries

According to previous literature, the difference in industries has a significant effect on vacancy durations. Thus, we estimate the hazard function by industries. However, some of the industries have a small number of observations. Therefore, we select the top-five industries in terms of the number of observations (Figure 2).

As Table 2 shows, the results are not consistent among the industries. In addition, although it is not shown in Table 1, the null hypothesis that the coefficients of industrial dummies are zero is not rejected even at 10% significance. Therefore, we can say that vacancy durations depend on the type of industries.

4.3 Results for the Marine Industry in the Stricken Area

As mentioned in sections 1 and 2, it is said that employment in local industries such as fishery and manufacturing, including the marine products industry, are crowded out by employment in the construction industry, which is encouraged by reconstruction expenditure. Table 3 shows the estimation results comparing the fishery and manufacturing industries with other industries, as well as Kesen-numa city and Ishinomaki city, which are famous areas for fishery and manufacturing in the stricken area, with the rest of the prefecture.

As shown in Row 3, the relative lower wage in construction is significant in the stricken area, in contrast to the benchmark case. The hazard ratios are significant and estimated at 0.540 for the whole industry, which means that a percentage point increase in the relative wage in construction decreases the hazard rate of job filling by 46.0%. Thus, an increase in the relative wage prolongs vacancy duration to a large extent. Moreover, as seen in Column 1, the ratio for the marine industry is 0.516, which is smaller than that for other industries. In sum, the construction industry crowds out the employment in other industries, especially fishery and manufacturing including the local marine product industry.

[8] Results for dummies are abbreviated.

5. Concluding Remarks

In this study, we investigate whether job vacancies in the construction industry (public works) crowd out private employment (private works) using Japanese microdata. As Alesina et al. (2002) insisted, an increase in public works exerts upward pressure on private sector wages and decreases private investment as a consequence of decreased profit. This study is the first to investigate this relationship using microdata, although that is only a part of this relationship.

A survival analysis on job-posting data for Miyagi Prefecture revealed that an increase in job vacancies in the construction industry decreases vacancies in other private sectors significantly at 1%. By contrast, the wage level in the construction industry, which can be interpreted as reservation wage, has a significant effect on other private sectors.

In Miyagi Prefecture, there are still several ongoing reconstruction projects. Our findings show that these projects may disturb the recovery of private industries in the region.

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Figure 1: Number of job postings enrolled at Hello Work's office and website.

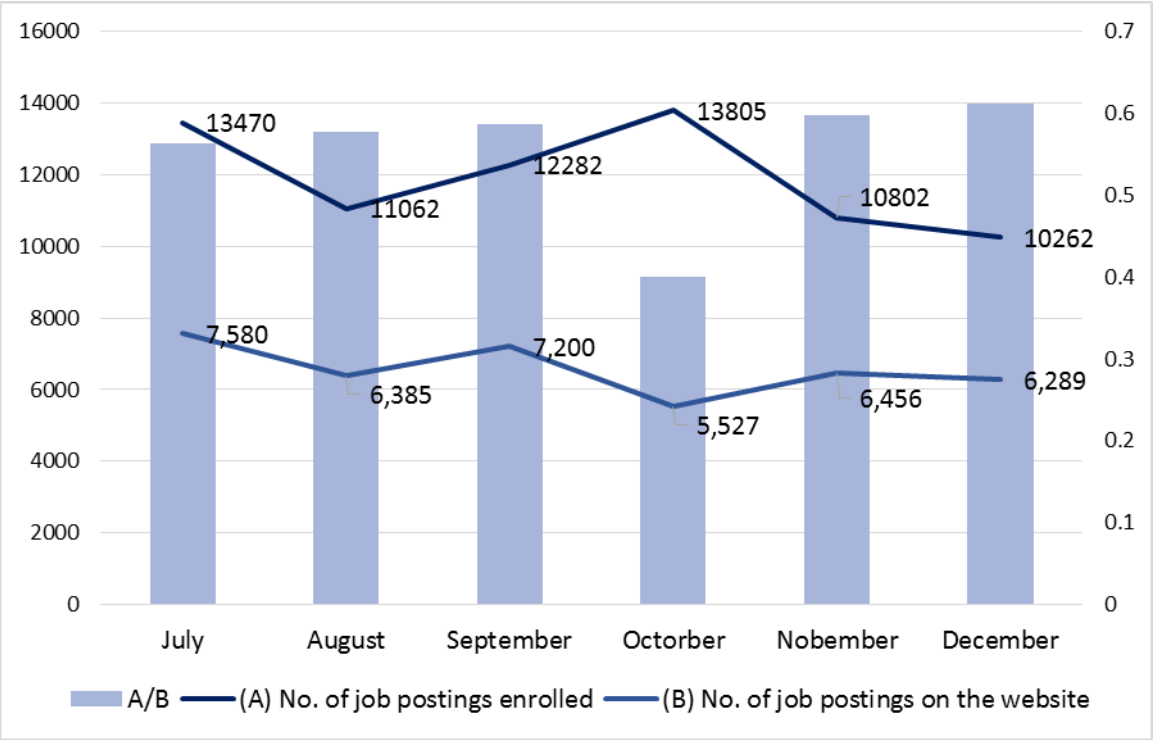

Figure 2: Share of job postings among the industries in the dataset .

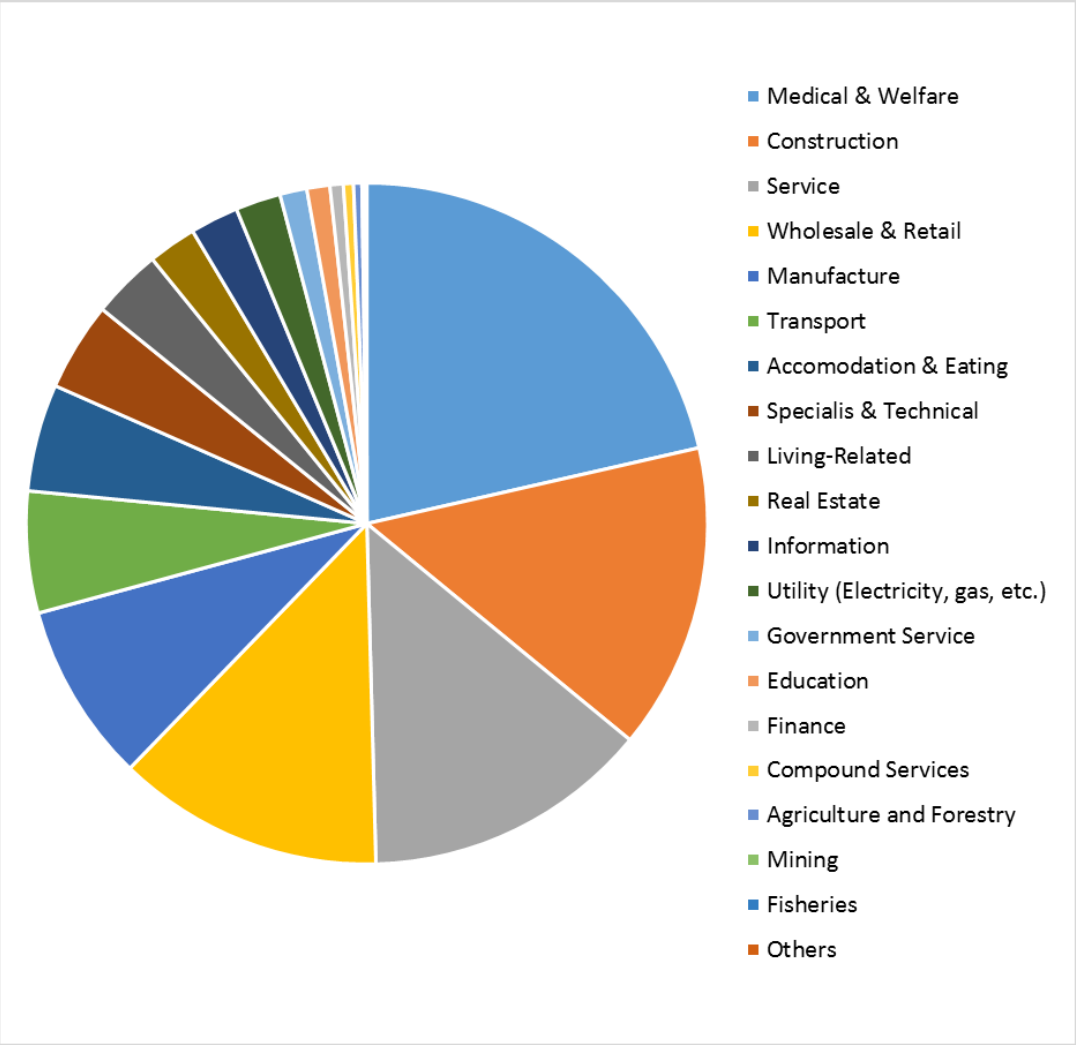

Table 1: Estimation Results of Survival Analysis

Relative upper wage	0.996 **	0.997 **	0.996 **
	(0.000)	(0.000)	(0.000)
Relative lower wage	1.002 **	1.001 *	1.002 **
	(0.006)	(0.036)	(0.006)
Relative lower wage in construction industry	0.999	1.000	
	(0.793)	(0.860)	
Number of job vacancies in construction industry	0.999 **		0.999 **
	(0.000)		(0.000)
Holiday on Sunday	1.146 **	1.150 **	1.146 **
	(0.000)	(0.000)	(0.000)
Holiday on Saturday	1.078	1.078	1.078
	(0.628)	(0.628)	(0.625)
Holidays on Sunday and Saturday	1.154 **	1.137 **	1.154 **
	(0.000)	(0.000)	(0.000)
Dispatch worker employed	0.893	0.926	0.893
	(0.065)	(0.208)	(0.065)
Dispatch worker enrolled	0.893	0.945	0.893
	(0.069)	(0.361)	(0.070)
Others	0.932 **	0.951 *	0.932 **
	(0.003)	(0.032)	(0.003)
Number of Observations	32996	32996	32996
Number of Censored observations	21828	21828	21828

Notes:

1) The dependent variable is job vacancy durations.

2) * and ** denote statistical significance at the 5% and 1% levels, respectively. p-values are shown in parenthesis.

Table 2: Estimation results by the five industries having the largest share of job postings.

Industry	Medical & Welfare	Service	Wholesale & Retail	Manufacture	Transport
Relative upper wage	0.997 *	0.994 **	0.995 **	0.997	1.007 **
	(0.025)	(0.001)	(0.001)	(0.051)	(0.000)
Relative lower wage	1.000	1.003	1.002	1.004	0.994 *
	(0.864)	(0.149)	(0.195)	(0.072)	(0.014)
Relative lower wage in construction industry	1.006	0.989 *	1.010 *	1.001	0.995
	(0.124)	(0.045)	(0.045)	(0.805)	(0.573)
Number of job vacancies in construction industry	0.999 **	0.999 **	0.998 **	0.999 **	0.999
	(0.002)	(0.007)	(0.000)	(0.001)	(0.072)
Holiday on Sunday	1.163 **	1.276 **	1.216 **	1.039	0.980
	(0.001)	(0.000)	(0.001)	(0.667)	(0.822)
Holiday on Saturday	0.596	0.617	0.741	1.311	2.443 **
	(0.253)	(0.345)	(0.552)	(0.500)	(0.002)
Holidays on Sunday and Saturday	1.044	1.146 *	1.145 *	1.272 **	1.250
	(0.454)	(0.049)	(0.037)	(0.000)	(0.083)
Dispatch worker employed	1.017	0.731 **	0.861	1.553 **	0.389
	(0.855)	(0.007)	(0.834)	(0.010)	(0.111)
Dispatch worker enrolled		0.920	1.557	0.327 *	0.614
		(0.283)	(0.465)	(0.029)	(0.632)
Others	0.934	0.922	0.919	0.949	0.938
	(0.156)	(0.196)	(0.151)	(0.454)	(0.503)
Number of Observations	8448	5323	4935	3339	2264
Number of Censored observations	5608	3681	3129	1936	1535

Notes:

1) The dependent variable is job vacancy durations.

2) * and ** denote statistical significance at the 5% and 1% levels, respectively. p-values are shown in parenthesis.

Table 3: Comparison between the marine industry and other industries by area.

Area	Ishinomaki / Kesen-numa			the rest of the prefecture			Whole Prefecture		
Industry	marine	others	all	marine	others	all	marine	others	all
Relative upper wage	0.998	0.996 *	0.998	0.996 *	0.996 **	0.996 **	0.997 *	0.996 **	0.996 **
	(0.562)	(0.050)	(0.143)	(0.021)	(0.000)	(0.000)	(0.037)	(0.000)	(0.000)
Relative lower wage	1.005	1.003	1.002	1.005 *	1.002 *	1.002 *	1.004 *	1.002 **	1.002 **
	(0.375)	(0.153)	(0.294)	(0.023)	(0.047)	(0.024)	(0.037)	(0.010)	(0.006)
Relative lower wage in construction industry	0.516 **	0.543 **	0.540 **	0.997	0.999	0.997	1.001	1.001	0.999
	(0.000)	(0.000)	(0.000)	(0.582)	(0.648)	(0.178)	(0.819)	(0.754)	(0.793)
Number of job vacancies in construction industry	0.975 **	0.977 **	0.977 **	0.999 **	(0.999) **	0.999 **	0.999 **	0.999 **	0.999 **
	(0.000)	(0.000)	(0.000)	(0.000)	0.000	(0.000)	(0.000)	(0.000)	(0.000)
Holiday on Sunday	1.272	1.216 *	1.222 **	0.970	1.140 **	1.127 **	1.044	1.152 **	1.146 **
	(0.280)	(0.013)	(0.006)	(0.754)	(0.000)	(0.000)	(0.625)	(0.000)	(0.000)
Holiday on Saturday	2.269	2.976 **	1.903 *	1.362	0.834	0.904	1.381	0.991	1.078
	(0.168)	(0.005)	(0.033)	(0.611)	(0.351)	(0.585)	(0.391)	(0.959)	(0.628)
Holidays on Sunday and Saturday	1.339	1.115	1.157	1.340 **	1.115 **	1.158 **	1.280 **	1.122 **	1.154 **
	(0.205)	(0.271)	(0.097)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Dispatch worker employed		0.995	1.010	1.562 **	0.833 **	0.878 *	1.550 *	0.851 *	0.893
		(0.981)	(0.966)	(0.010)	(0.008)	(0.043)	(0.011)	(0.014)	(0.065)
Dispatch worker enrolled		0.603 *	0.598 *	0.303 *	0.937	0.910	0.317 *	0.915	0.893
		(0.030)	(0.026)	(0.020)	(0.324)	(0.146)	(0.025)	(0.159)	(0.069)
Others	0.761	1.035	0.987	0.961	0.909 **	0.916 **	0.958	0.929 **	0.932 **
	(0.146)	(0.667)	(0.849)	(0.600)	(0.000)	(0.000)	(0.536)	(0.003)	(0.003)
Number of Observations	674	3082	3756	2691	26549	29240	3365	29631	32996
Number of Censored Observations	427	2067	2494	1522	17812	19334	1949	19879	21828

Notes:

1) The dependent variable is job vacancy durations.

2) * and ** denote statistical significance at the 5% and 1% levels, respectively. p-values are shown in parenthesis.