
Introduction

Changing Job Design and Its Influence on Labor Mobility

Recently in Japan, there has been a perception that human capital accumulated in some jobs may be becoming less specific to the firm, the industry, or the occupation which the workers belong to. One plausible argument is that some jobs have been more standardized or specialized than in the past due to the increasing usage of information technology (IT), adaptation to globalization, and the weakening commitment of Japanese firms to “lifetime employment.” For example, Higuchi (2001) reports that firms’ increasing use of IT has raised their ratios of contingent workers and their degree of outsourcing, which implies that the work process has been standardized.^{1,2} There have also been a number of recent studies on the relationship between globalization and reliance on irregular workers and some anecdotal observations that exposure to global competition facilitates the standardization of jobs.³

The declining specificity of human capital should indicate higher labor mobility. According to the Employment Status Survey by Japan’s Ministry of Internal Affairs and Communications, the ratio of job changers among all employees increased from 2.6% in 1982 to 5.6% in 2007. The survey also shows that the percentage of workers wanting to change their present jobs increased from 8.6% to 11.7% of all employees during the same period. The increase in the ratio of would-be job changers is especially notable among specialists and technical workers—from 4.4% in 1982 to 8.8% in 2007. However, it is hard to prove that changes in job design contributed to this increase in turnover because the Japanese economy scarcely grew and its unemployment rate continued to rise over most of the past two decades. In a prolonged recession, the voluntary quit rate may rise among people who were forced to accept less preferable jobs.

The government’s data do not offer any clear indication that changing job design might be facilitating labor mobility. For example, Bognanno and Kanbayashi (2007) report that the wage penalties associated with job changes across different industries or different occupations

¹ Yoshio Higuchi, *Koyo to Shitsugyo no Keizaigaku* [Economics of employment and unemployment], (Tokyo: Nihon Keizai Shinbunsha, 2001), chap. 7.

² Clearly, one indication of changing job design is the increased percentage of irregular workers (part-time, temporary workers, contract workers, etc.) who now account for 34% of the work force in Japan according to the Labour Force Survey by the Ministry of Internal Affairs and Communications. Outsourcing of work to people dispatched from temporary staffing agencies should require work processes to be standardized and specialized so that temporary workers do not need to have a broad skill set or coordinate with other workers.

³ See, for example, Tomohiro Machikita and Hiroshi Sato, “Temporary Jobs and Globalization: Evidence from Japan,” (RIETI Discussion Paper Series 11-E-029, 2011), for a study that measures the influence of globalization on the increase of temporary employment. One interesting case study that looks at how foreign ownership changed the job design and human resource policies of a traditional Japanese firm is Thomas DeLong and Masako Egawa, “Shinsei Bank: Developing an Integrated Firm,” (Harvard Business School Case, 2007).

fell significantly in the 1990s and early 2000s, a finding that may be consistent with the view that human capital is now less specific to an industry or occupation. But, at the same time, they find that the extent to which job change penalties rise with age also increased during the same period, which might be more consistent with the opposing argument that human capital is increasingly firm-specific.⁴

In light of the lack of any systematic evidence linking recent labor mobility trends with any economy-wide changes in job design, it may be quite instructive to compile disparate findings for specific industries, occupations and labor market issues in order to provide a better evidentiary basis for this debate. This issue of *Japan Labor Review* presents a set of such studies that contribute to the following research questions: where and to what extent is evidence for the standardization of jobs observed and in what ways are changes in job design affecting labor mobility?

The first paper by Naoki Senda, Hongmoon Park, and Mitsutoshi Hirano presents case studies of two IT companies which test the hypothesis that job structures and skill evaluation criteria have become homogenized given the observed standardization of software development processes. Borrowing concepts from the product architecture literature, they argue that IT jobs shifted to an “open” and “modular” architecture to facilitate worker mobility and outsourcing. The authors find that skills evaluations have become standardized to a significant extent, but that the “modularization” of work is proving difficult in some areas. Depending on the nature of their businesses, some companies are clearly choosing to custom design their job skills. The study reveals that the degree of job standardization and the switching cost for job changers may vary across firms even in the same industry depending on the employer’s product market strategy and its resultant human resource management policy.

The second paper by Yuji Genda looks at labor mobility across the status border between regular and irregular employment to determine whether irregular workers are really outside the internal labor market. If irregular workers do not accumulate much human capital, especially human capital specific to the firm that employs them, they will continue to find it difficult to step up to a permanent position and remain vulnerable to negative external shocks to the employers. In his earlier work, Genda (2008) finds that the length of employment with the same employer has a significant impact on the probability of transitioning from irregular to regular employment, implying that either accumulation of human capital or revealed commitment to a job matters for employers.⁵ In this issue, Genda uses a unique survey that allows him to distinguish the paths workers follow to reach regular employment, namely, moving up in the same firm versus changing employers to become “permanent.” To the extent to which the former path is prevalent, irregular workers are not excluded from the internal labor market. Irregular workers could be an important

⁴ Michael Bognanno and Ryo Kanbayashi, “Trends in Worker Displacement Penalties in Japan: 1991-2005” (IZA Discussion Paper no. 2954, 2007).

⁵ Yuji Genda, “Transition into Regular Employment among Separating Non-Regular Employee,” *The Japanese Journal of Labour Studies* 50, no. 11 (2008): 61-77.

pool of applicants for permanent positions because their employers asymmetrically observe the workers' qualities. Moreover, irregular workers could accumulate substantial firm-specific or job-specific human capital if they are assigned tasks matching their abilities. This paper reveals the importance of job-specific human capital among those who move up in the same firm but also reports a puzzling result in that it did not find any wage premium for those intra-firm transfers.

In the third paper, Akihito Toda attempts to find evidence for the hypothesis that market friction is diminishing for job changers who move within the same occupation. Standardization of a job will make experience within an occupation more valuable than before if the required job skills become similar across firms and human capital accumulated on the job will suffer less depreciation due to standardization. Toda finds evidence supporting the above hypothesis for the job category of specialist and technical workers. More precisely, he demonstrates that the rate of job change within these occupations has increased and the proportion of within-occupation job changers is larger among workers with more education. Although Toda does not find that wage premiums also increased for job changes within occupations, contrary to his hypothesis, he shows that wage premiums have risen for female specialist and technical workers. This last finding implies that standardization of jobs may have a greater impact on the wages of female workers for whom labor market friction is presumably greater (perhaps, for example, if asymmetric information is more significant for female workers).

The fourth paper by Masaru Sasaki offers a completely different perspective focusing on the intermediary role of public employment service agencies and the question of whether an improvement in matching efficiency can be observed in the initial referral process of the agencies (due to a combination of applicants' search efforts and the agencies' referral efficiency) or in the subsequent hiring process of firms (presumably due to the quality of job leads provided by the agencies). Sasaki finds that overall matching efficiency improved from 1998 through 2007 but all the gains came from the referral process that offset a decline in job placement rates under firms' hiring processes. Sasaki suggests that the search support capability of the employment agencies improved, but it may also be the case that standardization of jobs has lowered the cost of screening posted jobs both for workers and employment service agents. And yet, for whatever reason, better search support by agencies did not improve the quality of induced employer-applicant matches. Since we cannot control for the quality of jobs and the data do not cover job matching not mediated by the public employment service agency, the evidence still falls short of answering whether labor market friction is declining as a result of better matching efficiency or not. Nonetheless, Sasaki's work sheds new light on how the public employment agency search process mediates the effect of the demand-supply balance in the labor market on the unemployment exit rate.

The last paper by Yoshifumi Nakata and Satoru Miyazaki carefully documents micro-level changes in the labor market for industry scientists and engineers. Their findings are consistent with Toda's work in this issue. First, labor mobility among industry scientists and engineers has been trending upward, especially among younger workers and information systems and software engineers. This finding for IT engineers is not surprising because development processes are becoming increasingly standardized in the IT field, as discussed in the paper by Senda, Park, and Hirano.

What is interesting is that this increase in labor mobility is taking place when the supply of scientists and engineers is shrinking. According to the NISTEP report cited in this study, the number of natural science and engineering-major students entering universities has declined more than 20% in the past decade. Nakata and Miyazaki also show that although the productivity of Japanese engineers is higher than that of their counterparts in other developed economies, their wages are lower. Given this compensation gap, increasing exposure to the external labor market should eventually lead to an increase in Japanese engineers' wages. The paper includes an analysis based on a survey of workers in the electronics industry which reveals that current salary systems in the industry depend more on individual performance than in the past. At the same time, engineers' job satisfaction and company loyalty is declining. All of the findings in this paper indicate that the influence of the external labor market is increasing among industry scientists and engineers.

Overall, the papers in this issue suggest that there are real changes in job design and the specificity of human capital at least in some occupations. However, there is significant heterogeneity across firms, industries, and occupations, and therefore the magnitude of the impact of these changes on labor mobility is unknown. Even in occupations where the external labor market plays an increasing role in allocating human resources (i.e., temporary workers and engineers), the internal labor market still has significant influence on how workers change jobs.

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