
Introduction

The Great East Japan Earthquake, the Labor Market, and Policy Reactions

The frequency of natural disasters is said to be increasing worldwide because of global warming. Although natural disasters cannot be prevented, the damage they cause can be mitigated through improvements in building structures, infrastructure, and social institutions, such as social insurance. The Great East Japan earthquake on March 11, 2011 killed about 20,000 people and damaged properties equivalent to 4% of Japan's gross domestic product (GDP). Articles in this special issue provide an overview of the short- and medium- term labor-market consequences of the earthquake and government labor-market policies. Each article provides generalizable knowledge on the labor market's reaction that will be helpful for designing policies to reduce future damage from natural disasters.

Higuchi, Inui, Hosoi, Takabe and Kawakami draw on several government statistics to describe the industry/occupation structure of the damaged area, population outflow from the area, and the number of unemployment insurance recipients. Administrative records from a typical local employment office, Ishinomaki office, indicate a severe mismatch between job offers and job applicants in terms of industry: There were excess job offers for construction and civil engineering sectors and excess job applicants for the food processing industry, which had been the predominant industry in the area before the disaster.

Nishimura reports on how firms responded in terms of human resource management to the supply shortage of electricity induced by the failure of the Fukushima Daiichi Nuclear Power Plant and other thermal power plants of the Tokyo Electric Power Company (TEPCO). He introduces several cases indicating how business associations reduced the peak electricity usage by rotating operation days or by sharing knowledge about electricity conservation. While taking these measures was costly, in some cases, the shortage of electricity worked as a "shock therapy" that enhanced production efficiency.

Ohtake, Okuyama, Sasaki and Yasui analyze post-earthquake labor-market flows after the Hanshin-Awaji Earthquake in 1995, using data from local employment offices of the afflicted region. The numbers of both job vacancies and job seekers increased for full-time workers after the earthquake, but the number of placements decreased because of mismatches between jobs and applicants. In the case of part-time employment, the number of job vacancies increased, while the number of job seekers and placements decreased.

Shu surveys existing literature to derive implications for the population and employment recovery from the damage of the Great East Japan Earthquake. Drawing upon the consensus that damage caused by a natural disaster tends to have little long-run impact in growing cities, but it tends to accelerate the speed of contraction in declining cities, Shu predicts different recovery paths for three affected prefectures.

Genda was involved in designing a post-disaster labor-market policy package, named *Japan As One*, as a committee member of the study group for the Reconstruction Design Council in

Response to the Great East Japan Earthquake. He briefly introduces his policy recommendations in the study group, which mostly materialized as a part of a policy package. Looking back his experience, he emphasizes the importance of preparing a scheme for financing the surge in expenditures for employment adjustment subsidies and employment insurance in emergency situations. The current financing scheme based on employment insurance accounts is not resilient to devastating shocks, such as the 2008 Financial Crisis or the Great East Japan Earthquake. He then introduces and assesses such policies as unemployment insurance, newly embarking job-seeker support, public assistance, and local government's job creation. In particular, he proposes fine tuning job-seeker support in some detail. Finally, referring to the fact that only a tiny fraction of firms creates the majority of jobs, he hints at finer policy targeting of small- and medium-sized enterprise subsidies to selected firms.

Nogawa summarizes government labor-market-policy measures to prevent labor-market turmoil after the earthquake. Nogawa favorably assesses the effectiveness of conventional policy measures, such as unemployment insurance and employment-adjustment subsidies, but he criticizes the performance of newly implemented policies that aim to create jobs in afflicted areas. He proposes the expansion of training programs that help workers in affected industries or areas to find jobs in industries or areas that are expanding.

Taking stock of the results from each paper, the damage caused by natural disasters tends to accelerate transformation of the labor-market structure because some damaged establishments in declining industries or regions do not come back. This can well be a reason why the industry/regional mismatch between job vacancies and applications becomes serious in the recovery process. Therefore, both policies that slow the speed of industrial composition in the afflicted region and those that mobilize afflicted workers from declining to growing industries/regions contribute to mitigating victims' hardship after a natural disaster.

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