

The Estimation of Great Earthquake Impacts on Japanese Labor Market, Agricultural Sector and GDP.

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Abstracts

On March 11, 2011, the Great East Japan Earthquake and tsunami hit the Tohoku region of Japan, causing the loss of a great number of lives and property. The earthquake and tsunami also damaged nuclear plants in Fukushima Prefecture, resulting in the release of radioactive substances into the environment. The extensive natural disaster brought numerous problems not only to the affected areas but also to the Japanese economy as a whole. This study examines the recovery process for one year after the disaster by using various official statistics, including changes in demographic characteristics, employment, and production of agriculture, forestry and fisheries industries mainly in the three disaster-stricken prefectures (Iwate, Miyagi and Fukushima Prefectures). The study also shows how to deal with the effect on national statistics of the Great East Japan Earthquake disasters by national statistics offices in Japan (including special estimation, supplementary survey and so on). The study is divided into the following three parts.

- 1) Accelerating population aging in the affected areas due to an exodus of younger generations in response to the disaster.
- 2) The employment situation in the affected areas; a mismatch in employment between job seekers looking for local industry jobs and employers recruiting construction and healthcare workers in the tsunami-hit region etc.
- 3) The recording of post-earthquake economic activity in Japanese national accounts.

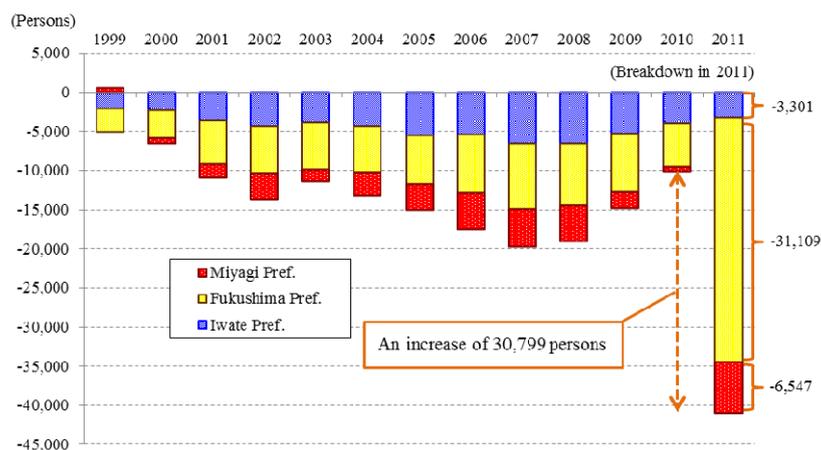
Key Words: Natural Disaster, Demographic Change, Industrial and Employment Recovery, National accounts

1. The Earthquake's Impact on Population Movements

In this chapter, we look at the status of net migration in the three disaster-stricken Tohoku prefectures as shown in the Annual Report on the Internal Migration in Japan derived from the Basic Resident Registers. This report is compiled on the basis of data on immigrants submitted to municipal governments. Therefore, it should be kept in mind that people who left the disaster-stricken areas are counted as emigrants only if they submitted an immigration application to the municipality where their new residence is located. Figure 1 provides a comparison between the total net migration (negative figures indicate net emigration) in the three disaster-stricken Tohoku prefectures in the post-earthquake period of March through December 2011 and in each year between 1999 and 2010. It shows that net emigration from the three disaster-stricken Tohoku prefectures increased by 30,799 people in 2011 compared with 2010. In particular, net emigration from Fukushima in 2011 came to 31,109 people, accounting for around 80% of the total net emigration from the three disaster-stricken Tohoku prefectures. The steep rise in net emigration from Fukushima Prefecture is considered to reflect the impact of the accident at the Fukushima Daiichi Nuclear Power Station as well as the earthquake impact. In Fukushima Prefecture, emigration increased in all age groups in the March-December period of 2011 compared with the same period of the previous year. Emigration in age groups younger than 44 years old recorded a particularly sharp increase (an increase of 8,799 in the 0-14 age group, of 2,237 in the 15-24 age group, 6,102 in the 25-34 age group

and 4,524 in the 35-44 age group). The increase of nearly 9,000 in emigration in the 0-14 age group presumably indicates that many parents with young children moved out of Fukushima Prefecture due to concerns over the impact of the accident at the Fukushima Daiichi Nuclear Power Station. Net Emigration from the Three Disaster-Stricken Tohoku Prefectures by Gender and Age Net emigration from the Tohoku region fluctuates by season (usually increases in March and April in every year). However, in Fukushima Prefecture, net emigration after the earthquake became much larger in that year than usual.

Figure 1. Net Emigration in the three disaster-stricken Tohoku prefectures (from 1999 to 2011 [total in the March-December period])



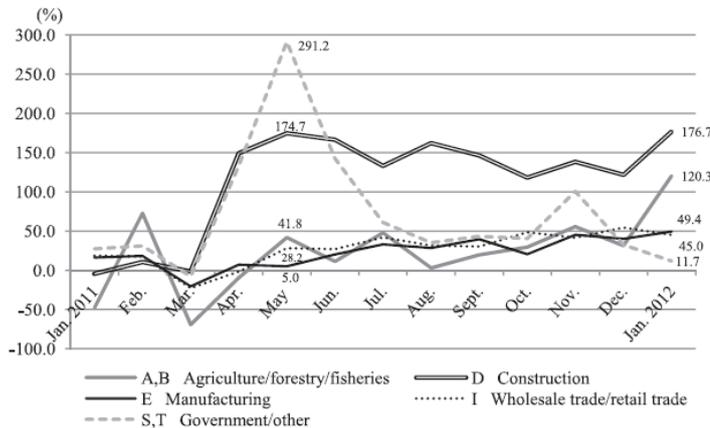
Source: Ministry of Internal Affairs and Communications, “Annual Report on the Internal Migration in Japan Derived From the Basic Resident Registers” (from 1999 to 2011[from March to December]).

2. Employment Situation in the Three Disaster-Stricken Tohoku Prefectures

Changes in the Number of Job Offers, Applications, and Placements, etc. in the Three Disaster-Stricken Tohoku Prefectures Regarding the employment situation in the three disaster-stricken Tohoku prefectures after the Great East Japan Earthquake, while the number of effective job offers exceeded about 100,000 for four consecutive months from September 2011, the number of effective job applicants reached over 140,000. In addition, the number of employment insurance benefits recipients is growing on a year-on-year basis. The employment situation in the disaster-stricken areas thus remains severe. After the earthquake, the number of new job offers continued to rise in the three disaster-stricken Tohoku prefectures due to an increase in job offers related to post-earthquake reconstruction and a recovery in production in the manufacturing industry. In January 2012, the number stood at 45,752.

According to Figure 2, which shows year-on-year changes in the number of job offers by industry, offers in the “construction industry” rose particularly sharply, recording a year-on-year growth of 176.7% in January 2012. Job offers in the “public service, etc.” sectors are also increasing due to the use of the job creation fund program from April through June. Job offers in the manufacturing industry have also gradually recovered since April 2011, posting a year-on-year increase of 49.4% in January 2012. On the other hand, the number of new job applicants declined after peaking in April and has been stable since September. In January 2012, the number reached at 29,430.

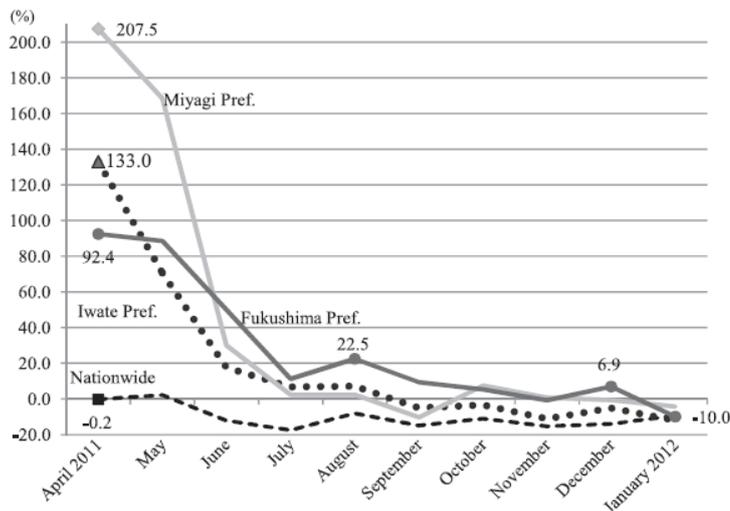
Figure 2. Year-on-Year Changes in the Number of New Job Applicants by Industry in the Three Disaster-Stricken Tohoku Prefectures (Comparison of raw numbers for 2011 with those for 2010)



Source: Ministry of Health, Labour and Welfare, Report on Employment Service (January2012).

According to Figure 3, which shows year-on-year changes in the number of new applicants who left their previous jobs due to employer-side reasons between April 2011 and January 2012, the number of such applicants temporarily rose in Fukushima Prefecture in December, 2011. That is presumably because employers that had suspended business operation while avoiding job reduction until then eventually decided to dismiss employees. The number of job applicants declined moderately after peaking in those prefectures in June and has recently been stable on a month-to-month basis. In January 2012, the number declined on a year-on-year basis in all three disaster-stricken Tohoku prefectures. However, during the period, this year on year changes in the number of applicants in the area continued to be higher than that in a nationwide basis.

Figure 3. Year-on-Year Changes in the Number of New Applicants for Permanent Jobs Who Left Their Previous Jobs Due to Employer-Side Reasons (Comparison of Raw Numbers for 2011 with Those for 2010)



Source: Ministry of Health, Labour and Welfare, “Report on Employment Service” (January2012).

As described above, the employment environment in the three disaster-stricken Tohoku prefectures appears on the surface to be recovering. However, as an employment mismatch has arisen, mainly in the coastal regions, where the earthquake damage was significant, the employment environment in the disaster-stricken areas remains severe.

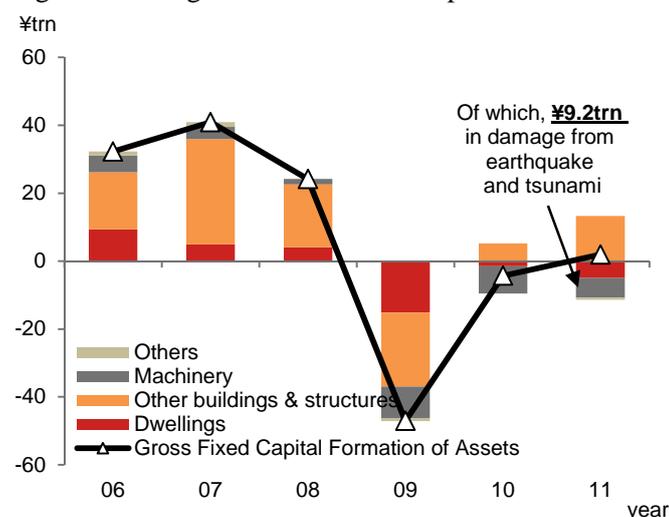
Changes in the Number of Employment Insurance Benefits Recipients in the Three Disaster-Stricken Tohoku Prefectures While the effective ratio of job offers to applicants is on an uptrend, the number of applications for unemployment insurance benefits totaled around 230,000 (a year-on-year increase of 40%) in the 11-month period from March 12, 2011, to February 19, 2012. According to Figure 6, the number of employment insurance benefits recipients (including recipients for whom an extension of the provision period has been granted for various reasons) gradually declined since peaking at 81,179 people (a year-on-year increase of 101.9%) in June. In January 2012, the number reached at 65,528 people (a year-on-year increase of 103.8%).

Since April 2011, the ratio of women to all employment insurance benefits recipients has been rising, standing at 58.8% in January 2012, indicating that the employment situation for women is severe. In the coastal region, the fishery product processing industry, which Japan Labor Review, vol. 9, no. 4, Autumn 2012 was employing a large number of women, including part-time workers, suffered significant damage, and many displaced workers there have been unable to find new jobs. As a result, the number of effective job applicants increased, making the employment situation for women severe. In the coastal region of Miyagi Prefecture, where the damage was significant, the number of permissions for employment insurance benefits rose 328.2% in the coverage area of the Ishinomaki Public Employment Security Office between March 12, 2011, the day after the earthquake, and January 22, 2012, compared with the same period of the previous year, and the number increased 571.7% in the coverage area of the Kesenuma Public Employment Security Office. Compared with the situation in inland regions, the employment situation in the coastal region remains particularly severe.

3. The recording of post-earthquake economic activity in Japanese national accounts

For SNA in Japan, damaged fixed assets from earthquake and tsunami were estimated by using estimated losses by product and by sector in the disaster-stricken region. End-2011 Gross Fixed Capital Formation of Assets shows a 1.4% y-y decline for housing and a 2.9% y-y decline for autos, with damage indicated at ¥9,151.5bn (Figure 4). The amounts of damages is recorded in “Other Changes in Volume of Assets Account” of reconciliation Accounts.

Figure 1. Changes in Gross Fixed Capital Formation of Assets



Source: Cabinet Office, Japan (National Accounts for 2011, 23. Gross Fixed Capital Formation of Assets classified by Institutional Sectors and Economic Activities (At

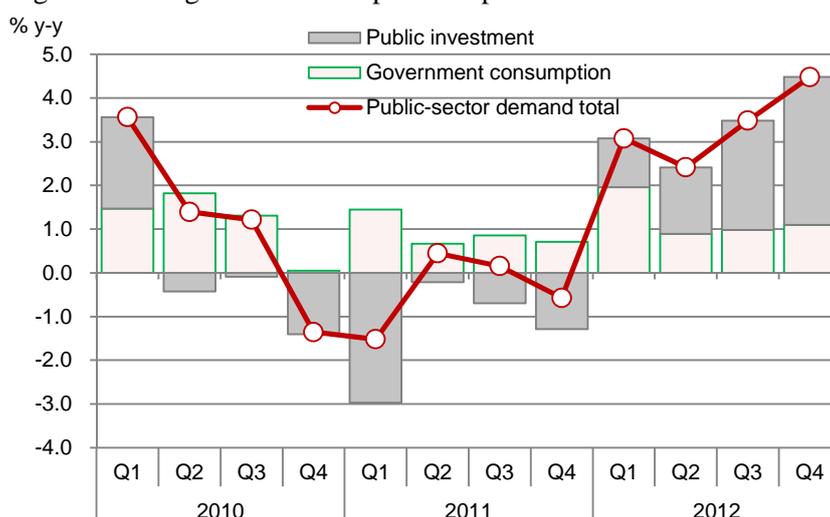
current prices))

After the Great East Japan Earthquake, the Japanese government provided large-scale supports to compensate the losses (Figure 5). Temporary buildings and expenditure for disposal of disaster were likely to boost public expenditure.

The expenditure of temporary houses and government buildings was a large contribution in their supports. Any asset expected to last more than one year is usually considered a fixed asset. Temporary houses and government buildings are expected to be used over one year, therefore they are recorded as gross fixed capital formation.

The expenditure for disposal of disaster rubble is also large. Disposal of disaster rubble has two meanings; waste disposal and large-scale land-improvement. In case of government doing them, the former is classified in government final consumption and the latter is classified in public investment. Actually, i) the share of waste disposal work is larger than land-improvement, ii) rescue work was provided by the police and the Japan self-defense forces which is usually recorded as government final consumption include disposal of disaster rubble, therefore the activity of disposal of disaster rubble cannot be distinguish from other government activity recorded as government final consumption. All the expenditure for disposal of disaster rubble is allocated to government final consumption.

Figure 5. Changes in Nominal public expenditure



Source: Cabinet Office, Japan

After the Great East Japan Earthquake, Aid money (monetary donations, spending of the insurance payouts made to those affected by the disaster, compensation payments related to the nuclear power plant incident, etc) may support household greatly.

i. Monetary donations: recorded as current transfer

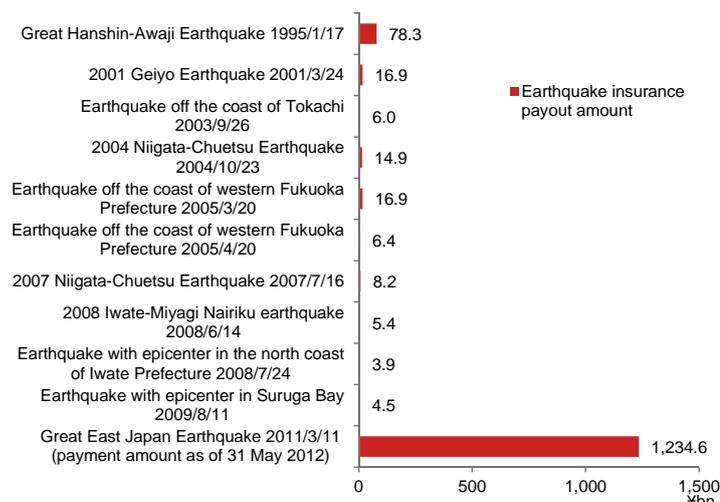
Monetary donations are being distributed to those affected by the disaster via the Japanese Red Cross, the Central Community Chest of Japan and local authorities in affected areas, and the amount comes to around ¥360.3bn(as of Dec 2012). They are recorded as the flow from the agent organizing a fund-raising to household. The receipts and payments in current transfers recorded at the time those affected by the disaster receive the monetary donations.

ii. Insurance payouts: recorded as capital transfer

Insurance payouts stemming from the quake had reached a substantial ¥1,234.6bn as of May 2012 (Figure 6). 2008SNA recommended following a catastrophe, the total value of the claims related to the catastrophe should be recorded as a “capital transfer” from the insurance corporation to the policyholders (Please see 17.41 in Chapter 17, 2008SNA). Therefore the insurance payouts stemming from the quake are recorded as

capital transfer from the insurance corporation to the policyholders.

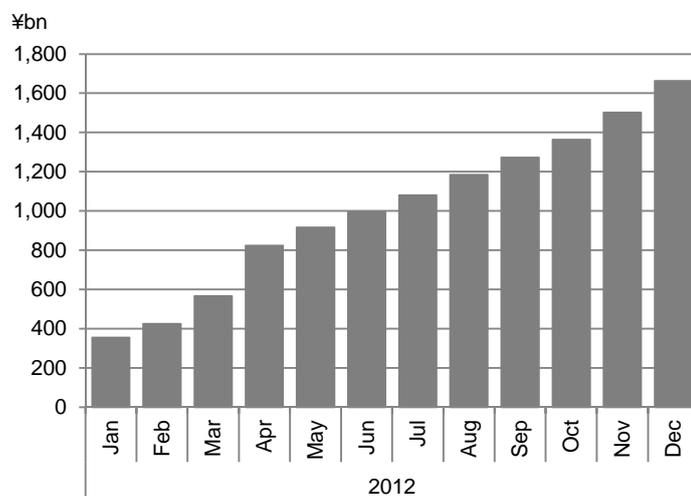
Figure 6. Earthquake insurance payments related to the Great East Japan Earthquake



Source: General Insurance Association of Japan

iii. Compensation payments related to the nuclear accident: recorded as capital transfer
 Compensation payments related to the nuclear accident at Tokyo Electric Power's Fukushima Daiichi plant also reached ¥1,662.9bn as of Dec 2012, according to data issued by the company (Figure 7). The payments also are recorded as capital transfer from Tokyo Electric Power to those affected by the disaster.

Figure 7. Nuclear incident compensation payments(cumulative payments)



Source: Tokyo Electric Power

*The impacts of recording capital transfer on saving ratio

These treatments related to capital transfer were implemented in 2011 SNA for Japan. If these payments are recorded as current transfer, household saving includes them. We see the household saving ratio in both 2011 and 2012 could be about 0.5 points lower than the rates which include the payments (Saving ratio in 2011: 2.3%, in 2012: not published yet, due to be released at the end of this year.)

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