Japan's Recovery by Removing Borders and Decentralization: From a spatial economics perspective

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On July 29, the Japanese government established the Basic Policy on Reconstruction from the Great East Japan Earthquake. Although the reconstruction project is on the order of 23 trillion yen over 10 years, the vital issue of how this project is to be funded remains a subject for future discussion. The new Cabinet led by NODA Yoshihiko, who was named prime minister on August 30, is required to create and implement quickly a specific plan for reconstruction. This column aims to give an outlook for the future course of Japan through the reconstruction from the perspective of spatial economics.

Spatial economics is a new field of economics that analyzes dynamic changes in intercity, interregional, and international spatial economic systems by focusing on agglomeration forces (improvement in productivity and creativity) arising from the proximity of diverse human activities and the complementary relationships among them. Its fundamental task is to analyze the process in which diverse activities of production and consumption form a variety of agglomeration at municipal, regional, and national levels in close interactions on the one hand and decentralization on the other through a tradeoff between economies of scale in individual production activities and transport costs in a broad sense (see Figure).

Figure: Fundamental task of spatial economics
The Great East Japan Earthquake was the first massive and complex disaster in history that included an earthquake, a tsunami, a nuclear power plant accident, power supply failure, and large-scale disruptions of supply chains. It became clear that the tradeoff between economies of scale and the risks resulting from diverse natural and man-made disasters is an essential issue to be addressed when thinking of the desirable spatial structure for Japan.

Japan was at an impasse even before the earthquake, faced with many fundamental problems. Japan should aim not just at a recovery to the state before the earthquake but also at a creative recovery that leads to a new future for Japan.

The experience of the Great Hanshin-Awaji Earthquake could be a useful reference for thinking about a creative recovery from the earthquake. Although the Port of Kobe achieved full recovery from a devastating disaster in the short period of two years and two months, its function as the international hub port in East Asia had already been overtaken by Busan and Shanghai. This fact demonstrates that the lock-in effects of a hub of the international maritime transport network cannot be recaptured once it is lost. It is also a telling reminder of the difficulty of a creative recovery.

Transforming the disaster into a creative destruction leading to new growth is a task that requires exceptional resolution, energy, and time. As it appears, however, Japan has been forced, rather than by choice, to change itself drastically. This is indeed the greatest crisis since World War II. But Japan must turn it into an opportunity to bring about fundamental changes by making united efforts and taking decisive steps. Otherwise, Japan’s decline will continue.

Let us consider the direction to be taken in reconstructing the Japanese socio-economic system by focusing on the preferred path for recovery in the Tohoku region. The principal thrust should come from borderlessness and decentralization.

First, let us consider the target direction for development of the Japanese manufacturing industry in relation to the problem of supply chains. Although the areas directly struck by the earthquake were mainly four prefectures in the Tohoku and Kanto regions (Iwate, Miyagi, Fukushima, and Ibaraki), the entire manufacturing industry in Japan and part of the manufacturing industry abroad were forced to suspend production.

A single automobile is manufactured by assembling 20,000-30,000 parts and materials. Economies of scale work for the production of each part. With an established transportation infrastructure and low transport costs, there is a strong incentive in Japan for a single company to mass-produce each part in a single location and transport such parts to places all over Japan and some to other countries. A dense network of supply chains is established all over Japan, and each manufacturer has been engaged in highly efficient production while reducing inventory to a minimum. Such efficiency-oriented management of supply networks backfired in the wake of the earthquake.

Japanese companies showed remarkable responsiveness on the frontline of production and restored supply chains at a rate greater than initially expected with production almost normalized in the manufacturing industry at the time of writing. Nevertheless, production at present has merely been rehabilitated to its original state. Placing the highest priority to the speed of restoration, rather than taking a “building back better” approach, was an inevitable choice, given the need to avoid the hollowing-out of Japan’s advanced manufacturing industry. This, however, leaves Japan with the challenge of creating more resilient supply chains both within and across its national boundaries. We need to address this issue without delay in order to avoid the risk of Japan being excluded from global procurement networks, as there is strong pressure on components and materials manufacturers from both the domestic market and overseas markets to disperse production.

The point is how to disperse risk while taking advantage of economies of scale, and we can take three basic policies to achieve that end: 1) virtual dispersion of plants through a business continuity plan (BCP) or a similar plan, 2) physical dispersion of plants inside Japan (for instance, to western and eastern Japan) or across national borders, and 3) thorough differentiation of core components and materials—those constituting the source of competitiveness—through continual (technological) innovation and by making clear distinction between two strategies for parts and components, i.e., commonalization and differentiation. We must find the best mix of these three policies to reconstruct more resilient supply chains in Japan and abroad.

In doing so, it is necessary to be capable of responding to a change in the major trend of the world economy, taking the lessons learned from the failure of the complete restoration of the Port of Kobe. Conventional global supply chains of Japanese corporations have been constructed for consumer markets in advanced Western countries. In this century, however, it is in emerging countries where a large expansion in the demand for industrial products is expected. In order to participate in global growth, current global supply chains and
corporate strategies must be fundamentally reviewed, and Japanese companies must depart from their management practices centered on Japanese personnel. To ensure progress in the global economy, each company should boldly promote overseas operations. On the other hand, the Japanese government should prevent the hollowing-out of the manufacturing industry by retaining in Japan those core components, materials and manufacturing machinery industries, that are the source of competitiveness for Japanese advanced manufacturing industries, and make efforts for attracting foreign investment. Specifically, the government should make all-out efforts to bring the nuclear power plant accident under control and ensure the stable supply of power, promote free trade agreements (FTA) and economic partnership agreements (EPA), reduce the corporate tax rate to the international level, prevent a rise in the value of the yen, and resolutely implement a mid-to-long-term growth strategy.

A number of experts and business leaders, including MITARAI Fujio, chairman emeritus of Keidanren (Japan Business Federation), have proposed the establishment of a headquarters with comprehensive supervisory powers in the Tohoku region, in view of a possible transition to a new regional administrative system referred to as doshusei provincial system in the future, for leading the rapid implementation of recovery measures. I also support this proposal. Specifically, the Reconstruction Agency, whose establishment is specified in the Basic Act on Reconstruction from the Great East Japan Earthquake, or its de facto executive organ should be established in the Tohoku region as a basis for the prospective "Province of Tohoku." I would like to propose realizing doshusei by gradually extending this prototypical system to other parts of Japan. This is necessary also for reducing the impact of the paralysis of urban functions in Tokyo, which could result from the direct impact of a near-field earthquake.

The centralized nation state with Tokyo as its capital, which emerged via the abolition of feudal domains and the establishment of prefectures in the Meiji Restoration, functioned well in the phase during which Japan tried to catch up with Western industrialized societies. Japan’s stagnation after the collapse of the Japanese bubble economy, however, indicates that the entire Japanese socio-economic system has a major structural problem. In the days when growth was possible by modifying and improving advanced knowledge absorbed from Western countries, the traditional Japanese socio-economic system focusing on common knowledge functioned well. However, if Japan is to develop as a knowledge-creating society in the current age of globalization, it must cultivate the frontiers of knowledge not only in the area of science and technology but also in broader areas including society and economy. For this purpose, it is indispensable to reconstruct a socio-economic system which emphasizes the specific knowledge of each individual and is much more diverse and autonomous than before.

The realization of doshusei is preferable in order to develop highly autonomous and diverse regions. This is exemplified by the fact that, in recent years, the majority of the top 10 Organisation for Economic Co-operation and Development (OECD) countries on a per capita GDP basis have been small countries in northern Europe. The average population of these countries is about 6.3 million, which is smaller than the total population of the six prefectures in the Tohoku region (about 9.3 million). The aforementioned countries have their own language and culture as well as unique industrial concentration and economic, social, and educational policies and have developed knowledge-creating societies rich in diversity.

We can therefore see that a large-scale population is not very essential for a country to develop as a member of the knowledge-creating societies. Japan can be revitalized as a knowledge-creating society if a decentralized system of government based on doshusei—rich in autonomy and diversity—is constructed by drastically reexamining the division of roles between the national and local governments with a view to promoting regional competition and collaboration. It is necessary to develop the whole Tohoku region as a place rich in diversity for innovation that enables participation by all stakeholders. For instance, the region can be expected to play a major role in the comprehensive technological development of renewable energy and the construction of a relevant social model. The Japanese government needs to improve support for university research centers in the Tohoku area and boldly promote industry-academia collaboration by utilizing a system of special reconstruction zones and other means. Hardware-related scientific technology alone cannot make the Tohoku region an attractive area, however. It is presumably important to proceed with post-disaster reconstruction by involving experts in economics, business management, culture, and art.