

Impact of the Earthquake in Japan on the Asian Economy



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The World Bank (WB) has stated that, after the Japanese earthquake and tsunami of March 11, 2011, the reconstruction efforts are likely to cost an estimated US\$ 235 billion and could take up to five years to complete. The WB also estimated that the cost of reconstruction could be up to 4% of Japan's GDP. In comparison, the Kobe earthquake in 1995 had a reconstruction cost of US\$ 100 billion, or around 2% of Japan's GDP. Therefore, the damage to Japan this time is enormous in economic terms, not to mention the tragedy in human terms (more than 26,000 dead or missing). Japan's importance as a key cog that turns the global economic wheel has also meant that the quake's impact was felt far beyond its shores.

The World Bank's chief regional economist, Vikram Nehru, commented that in the immediate future, the impact of the Japanese earthquake is likely to be in terms of trade and finance. The East Asian region also comprises some of Japan's key economic rivals such as China, South Korea and Taiwan. Sino-Japan rivalry in particular has been cast into the spotlight because China overtook Japan in 2010 to become the second-largest economy in the world after the US. Some economic analysts have even commented that Japan's role as a "barrier" to China's outward growth to the West was very much unappreciated and that after the quake there is no serious competitor in the region. Some analysts believe that, while the quake may provide greater incentive for regional cooperation and trade, the regional political and economic power could shift in favor of China.

The destruction wrought by the 3.11 quake and tsunami has disrupted critical supply chains throughout the Asian region. Over the last few decades, regional supply chains that have developed were a result of labor-intensive production being shifted out of Japan and into lower-wage countries like China, Malaysia, Thailand and Vietnam. Apart from automotive components and consumer electronics,

Japanese companies also manufacture highly-engineered products whose technologies and production are mostly still kept in Japan to maintain a competitive advantage over its rivals. However, there is a downside to this set-up. If output is lost from one or two key factories producing the component in Japan that is required in assembly plants elsewhere, production will come to a halt for companies using these components as inputs. Damage to key export infrastructure such as its ports complicates the blockages to the supply chain.

Even before the 3.11 earthquake, a number of multinational companies (MNCs) that had sourced components from Japan had expressed concerns about their supply chain vulnerability. The MNCs were of the view that they were becoming too dependent on a single source of production.

Now more than ever, after the 3.11 disaster, these MNCs strongly feel the need to diversify the production of their high-tech parts to more countries. There have been growing calls for Japanese companies to shift more key component production to other countries. While this will reduce Japan's competitive advantage vis-à-vis its rivals, Japanese companies may have no choice if they wish to keep their market share and brand loyalty. In addition, power supply is also a "headache" as many electricity generation plants have shut down or are on low production levels after the disaster. Nonetheless, there seems to be some surplus electricity capacity in western Japan and relevant authorities are working to resolve technical problems connecting grids of different specifications to improve the power situation.

Another trend that has emerged is that food exports to Japan will increase dramatically to compensate for the disruption of Japan's food-producing capacity. For example, the northern region of Tohoku, which is affected by nuclear radiation fallout, was Japan's fourth-largest food provider and produces about 20% of the country's rice

Photos: Courtesy of Mercy Relief Singapore



Scenes of damage from the Tohoku earthquake and tsunami



East Asia

Media reports have stated that South Korea and Taiwan have a similar pattern of exports to Japan's. They look the most ideally placed to benefit from any reduction in Japanese exports. Several South Korean companies are already benefiting from the shutdown of manufacturing plants in Japan in sectors such as steel and semiconductors. South Korean companies stand to benefit as they are competitors to Japan. However, this benefit will last only as long as the Japan quake does not affect the components that

and a major portion of its beef, poultry and pork supplies. As shown in the [photos](#) above, some aid agencies such as Mercy Relief have brought in supplies of fresh vegetables and frozen meats to Japan.

According to analysts, the whole northeastern region of Tohoku accounted for about 8% of the Japanese economy compared with 4% generated by Kobe City. While the increased demand for food exports to Japan will provide more profits for foreign food producers, the increased demand for food exports is also likely to heighten inflationary pressures in Asian countries. Rising inflation will be an added burden on the Asian region, which is already exposed to rising prices of food, energy and basic commodities.

The 3.11 disaster has adversely affected the civil aviation and tourism sectors. Both service industries are usually the first economic sectors to feel the impact of natural disasters. Significantly, Japan represented 6.5% of global scheduled air traffic and accounted for one-fifth of air traffic within the Asia-Pacific region. Air connectivity reroutings from and to Japan have affected both inbound and outbound travel across Asia and beyond. The Centre for Asia Pacific Aviation (CAPA) reported that the number of foreigners arriving at Tokyo's Narita Airport from March 11 (when the earthquake struck) to March 22 declined by 60% year-on-year to approximately 67,000 arrivals. Meanwhile, departures and arrivals by Japanese nationals during the same period declined by around 100,000 in each direction.

According to analysts, spending in the tourism sector is discretionary and could face severe contraction in the Asian region as a result of the 3.11 disaster. As Japanese businesspeople and tourists postpone their travel overseas to focus on problems at home, the number of Japanese visitors to East Asia has dropped. In financial terms, the most exposed tourism market because of the quake is China. Japan accounted for 23% of China's tourism revenue, Taiwan and South Korea 20% each, Thailand 15%, Hong Kong 11%, and Singapore 9%.

While the Japanese disaster has resulted in uncertainties in Asian trade and the stock exchanges, it could ultimately lead to a regional economic boost when Japan begins its reconstruction phase. The reconstruction phase in Japan will mean repatriation and appreciation of the yen. In financial terms, one-fourth of the East Asian region's long-term debt is denominated in yen. A 1% appreciation of the yen would translate into an approximately US\$ 250 million increase in debt servicing on yen-denominated assets held by developing nations in the region. Costs of production in the region will also increase, especially in companies that require imports of components from Japan. Some analysts suggest that supply chain disruptions are likely to last only a few months. Let us take a closer look at the impact of the 3.11 disaster on the different parts of Asia.

Japan supplies to Korean companies such as Samsung Electronics. Companies in South Korea are heavily dependent on Japan for supplies of electronic components such as LCD glass, microchip equipment and silicon wafers to produce semi-conductors.

[Table](#) below shows the impact of the supply chain disruption on South Korean manufacturing. South Korea also houses the world's top three shipbuilders, namely, Hyundai Heavy Industries, Daewoo Shipbuilding, and Marine and Samsung Heavy Industries. Japan exports about 40% of its steel output, and these Korean shipbuilders that were reliant on Japanese steel will face supply constraints as the earthquake affected 20% of Japanese steel production.

News reports stated that in Taiwan, manufacturers of display panels, semiconductor equipment and auto components are likely to suffer. Taiwanese microchip manufacturers have about one to two months' worth of supply in their inventory but beyond that manufacturing will be affected. Some of the companies likely to be affected are mobile phone producers like HTC, semi-conductor companies like TSMC, and the car factories owned by Japanese automobile companies, Honda, Nissan and Toyota. South Korea and Taiwan are highly dependent on imports from Japan. Taiwan imports 20.7% and South Korea 14.9% of their total imports from Japan. Taiwan has the highest import dependence on Japan in the region.

China is also host to a large number of Japanese companies in places like Tianjin, Liaoning and Shandong. Japan is also China's biggest source of imports and accounted for 13% of its overseas purchases; much of what Japan exports to China is assembled into final products and then exported across the globe. However, China has considerable stocks and is likely to find some alternatives among its domestic manufacturers to

Japan earthquake's impact on major Korea IT industries

Industries	2010 global market share	Impact
LCD panel	51%	May be affected by component shortages from Japan
DRAM	58%	Samsung and Hynix purchase 50-60% of their wafers from Japan-based Shin-Etsu Handotai and Sumco and their shipments could be affected.
NAND flash	48%	
Secondary battery cell	39%	Designers of battery pack ICs have shut down operations due to the earthquake; will have impact on battery shipments.
ODD	50%	Sony's plants for producing pick-up head and Blu-ray players in Japan affected by the earthquake; but Blu-ray products still account for a rather low shipment proportion, and the impact will be limited

Source: DigiTimes Research, compiled by DigiTimes, March 2011

supplement production. Morgan Stanley Asia Chairman Stephen Roach has said that the direct impact to the Chinese economy of the Japanese earthquake is minimal. This view is supported by the World Bank's Chief Economist for East Asia and the Pacific region, Vikram Nehru, who said that the Japanese earthquake is likely to cause a short-term decline in Chinese exports but then this trend will have a rebound.

Australia

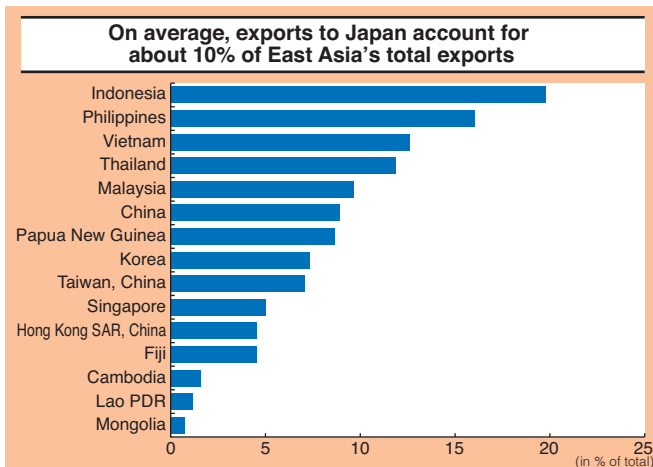
One of the immediate concerns for Japan is energy production, because of the damage to its nuclear power plants. Japan needs to look for alternative energy sources and Australia as a major exporter of thermal coal and liquefied natural gas (LNG) is well situated to supply Japan's demand for energy products. As a major exporter of iron ore and coking coal, Australia also stands to benefit from Japan's reconstruction efforts, especially the demand for steel. While the Australian commodity markets have experienced some of the volatility of the Japanese markets, the markets should eventually stabilize and reverse losses as demand for commodities picks up because of Japanese reconstruction.

Southeast Asia

The *Chart* below indicates that on average, Japan accounted for 10% of East Asia (including Southeast Asia)'s total exports. Indonesia could be another source of energy and raw materials as it mainly exports commodities like iron ore, oil and gas to Japan. However, Indonesia may not be able to increase petroleum production quickly because of a lack of new reserves, and the Indonesian government has prioritized domestic demand for its LNG production. Japan comprises 10% of Malaysia's total exports and 12% of Malaysia's total imports. Malaysia is the largest exporter of timber to Japan and the latter relies heavily on imported timber products like plywood. The demand for agricultural products from Japan will create opportunities for Cambodia, Thailand and Vietnam as food-exporting countries in the region.

Countries in mainland Southeast Asia also fear that Japan will reduce its overseas development aid to them. However, Japan appears to be staying engaged in the Southeast Asian region and continues to provide grant and aid packages. For example, Cambodia

Japanese Exports to Asia



Source: Cabinet Office "Consumption Composite Index" "Consumption Survey"

will receive a grant aid package of US\$ 94 million from Japan for flood protection, water distribution systems and de-mining activities.

South Asia

As the largest economy in South Asia, India is likely to be affected indirectly because Japan is a major source of foreign direct investment (FDI) into the country, particularly in the information technology (IT) industry. Japan is ranked seventh in terms of cumulative FDI in India, accounting for US\$ 3.714 billion in the period from April 2000 to March 2010, of which US\$ 1.183 billion came in the period April 2009-March 2010. According to Japan External Trade Organisation (JETRO), Japanese firms are beginning to prefer India as an investment destination over China. Indian media reports mentioned that the number of Japanese companies in India has grown sevenfold, from approximately 100 companies in 2006-07 to 745 in January 2011. According to investment bankers, India may witness US\$ 20 billion worth of Japanese investment by 2012. In terms of supply chain management, despite considerable local manufacturing, auto producer Maruti Suzuki imports a sizeable portion of its components as well as completely-built units (CBUs) from Japan. Another example is Toyota Kirloskar Motors, which depends on auto components and CBUs shipped from Japan.

In the area of technology, India and Japan have decided to jointly develop a solar city in India. The project aims to reduce India's projected demand for conventional energy at the end of five years, through energy-efficiency measures and generation from renewable energy installations. Currently in an expansion phase, India's nuclear power program will face some pressure to re-think its development plans. The Indian government and its nuclear establishment need to reassure the general public that India has diesel-powered back-up generators for the nuclear plants and that these back-up generators, when located in tsunami-prone areas, are at high altitudes.

Conclusion

The Japan earthquake has resulted in some noticeable impact on the Asian economy in terms of trade, finance, and movement of people. The disruption to the regional supply chains has affected a number of companies outside Japan. Regional competitors of Japanese producers will stand to gain if they can provide suitable alternatives to critical Japanese components. While regional economies will receive a boost from reconstruction efforts, inflationary pressures will also have an impact on food, energy and commodity prices. The agricultural producers in Japan were badly affected by the tsunami and they are a strong political lobby group in Japan. This may have an impact on Japan's negotiation of trade agreements with its trading partners. Regional economies heavily dependent on inbound Japanese tourists may have to look for other sources of foreign tourists. With Japanese companies repatriating yen to help in the reconstruction efforts, this might reduce the outflow of Japanese FDI and aid money. Mitigating the radiation pollution and expanding clean-up efforts will likely inflate the reconstruction costs further in Japan. **JS**

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