



Causeway Capital Management LLC

Japan's March 11 Earthquake and Tsunami

Economic Implications

3/16/11



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Although new information has arrived in the past five days, we adhere to our original premise that this disaster is essentially local, with the economic impact aimed largely at Japan. The overall cost now looks likely to exceed the 10 trillion yen (\$125bn), or 2% of Japan's gross domestic product (GDP), wrought by the Great Hanshin earthquake of 1995 that devastated Kobe. We also expect a response from the Japanese government similar to 1995. The post-Kobe reconstruction effort amounted to roughly 9 trillion yen (\$113bn), and contributed to the Japanese economy's subsequent cyclical upturn. Although last week's disaster hit a more remote section of Japan than the 1995 quake, the breadth of destruction is enormous. Most of the damage has occurred in the Tohoku region (six total prefectures, 7% of Japan's population), most specifically in the four prefectures of Miyagi, Iwate, Fukushima and Ibaraki, which, according to the most recent data (2007), account for approximately 6% of Japan's total GDP. Manufacturing is spread across multiple sectors in this region, with a concentration of businesses in consumer electronics, semiconductors, petrochemicals, and industrials. At present, Japanese businesses are concerned with supply shortages in parts, other equipment, and power, with ramifications for the entire country's manufacturing output. The loss of three critical nuclear power facilities exacerbates power shortages and may threaten the population's health if containment efforts fail. It may take several months before we understand the long-term ramifications of radiation leaks from the crippled nuclear power facilities.

Overall Impact on the Japanese Economy:

- We expect the government to deploy a special economic package similar to the one it introduced after the Kobe earthquake, a package totaling several trillions of yen. The Kobe earthquake occurred on land, which amplified the damage to buildings and infrastructure. This recent earthquake occurred offshore, mitigating the insurance cost and probable reconstruction time. The areas hit by the tsunami included farms, fisheries, residential and some manufacturing, but very few commercial office facilities.
- Although currently rationed, normal electrical power services should resume by the end of April, according to Tokyo Electric Power. Japan has lost an estimated 10% of its total electrical power, with roughly half of that loss from nuclear plants that will not return to service.
- The yen has risen since the earthquake, likely in anticipation of (or response to) yen repatriation. (The yen appreciated versus the US dollar from 100 to 80 at the time of Kobe earthquake). The yen has risen to a 52-week high of 80 today (March 16), adding urgency to the need for further monetary accommodation and stimulative economic policies.
- Political gridlock should end. We expect the opposition parties to become more cooperative in response to a national catastrophe. As a result, the passage of the current budget may now be approved as soon as April, and the debt ceiling will likely be raised. We consider this additional financial flexibility beneficial for the domestic economy.

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Industry Impact:

Industrials

The four prefectures impacted by the earthquake comprise an estimated 7.2% of manufacturing production in Japan. The affected region is home to more than a dozen large Japanese machinery and precision equipment manufacturers. The health of sub-suppliers and the availability of electricity in the region are primary determinants of the path of manufacturing recovery.

While direct damage looks limited, as quake-damaged logistics and power lifelines have yet to be fully restored, companies are struggling to make detailed assessments of the effects on their facilities and forecast how long operations might be suspended.

Two groups of stocks have seen a relatively steeper decline: first, the group of companies which has production plants in the Tohoku region, that suffered the most damage from the earthquake and second, the group that engages in businesses that are closely related to nuclear power plants.

Unfortunately, it is likely that the danger associated with Tokyo Electric Power's Fukushima nuclear power plant will continue for many days ahead. Radiation leaks may well dampen the popular support in Japan for new nuclear facilities.

Automobiles

In the immediate aftermath of the earthquake, almost all Japanese automobile manufacturers halted production until March 17, as they assess potential damages, insure safety, and review the supply chain. In terms of demand, there will certainly be some type of domestic demand reduction in the immediate aftermath of the accident, although this should be temporary.

Insurance

A Japan earthquake/tsunami is one of the major catastrophe risks worldwide (including US hurricanes) that affects all major global non-life reinsurers. All major reinsurers will have exposure.

Typically, three or more weeks must elapse from the time of the disaster in order to calculate the insurance losses. Conservatively, we currently estimate this event to be a medium-large loss, equating to an insured loss of anywhere between \$10 and \$25 billion. For comparison, the second New Zealand earthquake of earlier this year generated insurance losses of roughly \$10 billion. Due to traditionally low levels of private reinsurance, the 1995 Kobe earthquake cost insurers an estimated \$3.5 billion.

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An insurance industry loss of \$10-25 billion might lead to losses for individual companies equating to about 3% of book value. We do not expect this to lead to substantial reinsurance price increases, although Japanese catastrophe risk pricing may climb. Even with higher property and casualty prices in Japan, we currently believe this disaster will not remove enough spare underwriting capacity to push the global property and casualty pricing cycle upward. For well-capitalized global insurance giants, this disaster will likely reduce current year earnings by an estimated 20%, but may not lead to a reduction in book value or a need to raise additional capital.

Overall, earthquake insurance is not a popular type of coverage in Japan. Commercial property owners must comply with extensive anti-seismic building codes, and do not typically use insurance as further protection.

Real Estate

Reports we have received from our contacts in Tokyo suggest that central business district buildings are largely unaffected. Shops, restaurants, bars, and convenience stores are open, and subways and trains have resumed, although operations are subject to rolling blackouts and loss of power. After completing their reviews of any runway damage, airports are functioning smoothly.

After the 1995 Kobe quake, Japanese builders made further improvements to the anti-seismic structure/reinforcement of the country's commercial buildings.

Chemicals

Many chemical production facilities in the Tohoku/Kanto region have halted production, at least temporarily. The damage is not clear, but production and shipments may be impeded by damage not just to equipment but also to infrastructure (electricity, water, and distribution). The Tohoku region does not have a major concentration of chemicals firms, but does have some important plants.

If the Tokyo/Chiba/Yokohama stoppages continue, the Japanese chemicals industry will be strongly impacted. Chiba prefecture has five naphtha cracker facilities (plants that produce ethylene from naphtha) with annual production of 2.73 million tons. Damage seems lighter than in Tohoku and North Kanto, but a Chiba oil refinery incurred major damage. The damage also seems lighter in Kanagawa prefecture, but there are several plants there, including two naphtha cracker plants. Long-term stoppages in Tokyo, Chiba, or Yokohama could seriously impact domestic production of all Japanese chemical products. We do not anticipate such disruption, and expect production to resume as facilities are inspected.

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Utilities

All the nuclear power stations units at Fukushima and Onagawa have halted operation. Even though these facilities are now closed, the plants must be continuously cooled to remove decay heat from the reactor fuel. Makeshift facilities are now in place to cool the reactors, but we cannot be sure that these efforts will succeed. We are concerned about a wider spread of radiation contamination from the four quake-hit reactors of the Fukushima Dai-Ichi nuclear plant. We are watching the situation closely.

Health Care

Japan is the second largest pharmaceutical market in the world, representing approximately 10% of global sales. Japan's pharmaceutical spending accounts for 21% of healthcare spending and 1.5% of GDP (lower than the US at 2.1%). In total, the three prefectures most impacted by the earthquake account for less than 5% of sales (300 billion yen). A plant in the Iwate prefecture has been damaged and cannot currently operate due to the power outage. One pharmaceutical company with plants in Iwate and Fukushima is still assessing the damage. Other pharmaceutical plants in the area report that they have not suffered any damage. Japanese pharmaceutical and healthcare companies in general have outperformed the Nikkei index since the disaster. Large cap pharmaceuticals has outperformed the TOPIX index, while medical technology has underperformed the larger group.

Technology

Japan is very important in the wider global technology supply chain, dominating areas like batteries, displays, passive components, intermediate substrates/materials, finished semiconductors, cameras etc. For example, two Japanese chemical companies account for roughly 80% of BT (bismaleimide triacine) substrate, used to package both memory and logic semiconductors. One company reports that two of its factories have halted production. Similarly, it is worth noting that Japan has an estimated 70% market share in passive electronic components. Many types of components must be quality and performance tested, and often have large lead times. Even if facilities are not physically damaged, semiconductor manufacturing requires a high quality power supply, and the production runs are long. A single power interruption can result in the scrapping of several weeks of output. If there are significant supply chain disruptions, the implications go far beyond technology, and far beyond Japan. Certainly automobiles would be affected, as well as other areas including industrial equipment and aerospace/defense.

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Energy

Tokyo and the Japanese Pacific coast have multiple oil refineries. Six Japanese refineries capable of processing almost 1.4 million barrels of crude oil a day (b/d) have been shut because of the earthquake.

Current total Japan refinery capacity is 3.8 million b/d as of March 2010, of which 0.4 million is currently closed. Of the current 3.4 million b/d remaining refining capacity, about half, 1.75 million b/d, comes from along the Pacific coast (from Sendai, the main affected city, to the Tokyo area along the Pacific coast).

One hub refinery, which accounts for 12.6% of the Pacific coast capacity at 220,000 b/d, has confirmed a fire explosion and significant equipment damage. Details are not yet available, as employees evacuated the site. This refinery is also the petrochemical hub in the Tokyo Bay area, and we can expect a minor write down in asset values.

Overall, we currently estimate that there will be a six-to-twelve month disruption to the Japanese economy, and a drag on the country's real GDP growth of at least 0.5%. In a year, reconstruction efforts should have a stimulative effect on the economy, with power supply shortages resolved and – barring any serious radiation contamination – a recovery in consumer confidence.

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