The Economic Fallout of the Kyushu Earthquakes

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A series of large earthquakes, including the largest tremor since the 2011 earthquake that caused the Fukushima nuclear disaster, hit southern Japan in April. A 6.5 magnitude earthquake was followed a few days later by a 7.0 magnitude tremor. The city of Kumamoto and surrounding area on the island of Kyushu were the most affected. Kyushu is 35,640sq km (roughly the size of Taiwan) and has a population of 13 million. Around 50 persons have died, thousands have been injured, and nearly two hundred thousand have been forced to evacuate. Tens of thousands of people remained in shelters as of early May.

The infrastructure in the region was severely damaged; the Great Aso Bridge collapsed and the two main motorways were damaged by landslides. Bullet trains on the island were suspended. The region is a hub for electronic devices and automobile parts, and many major Japanese manufacturing companies have either plants in the region or are relying on suppliers from there (Sony, Toyota and Honda for instance). Toyota was forced to temporarily shut down factories across the country due to a shortage of parts from Kyushu. Some local companies have shut down factories as a precautionary measure rather than due to actual damage, but we expect to see an impact on Q2 results, on electronics exporters in particular. While the economic significance of the disaster at a national level will be limited, the local economy will need months to fully recover. According to the latest Tankan business survey (published by the Bank of Japan), the region was already affected by dwindling business sentiment, including in the important tourist industry.

Earthquakes are the highest risk factor for Japan. Small earthquakes occur on an almost daily basis, and catastrophic ones can occur as often as once a decade. While Japan’s risk-preparedness is good, its location, population density, and the magnitude of the earthquakes make the country particularly vulnerable to this type of natural disaster. After the 2011 earthquake which caused the Fukushima nuclear disaster, many companies in Japan improved the resilience of their buildings and put detailed contingency plans in place, all of which was visible in the very quick recovery from the latest major incident.

Companies in seismically active areas should:

- have back-up facilities in different parts of the country.
- have contingency plans for catastrophic events.
- have inventory policies that take into account the possibility of lengthy production and supply disruptions.

- to the extent it is possible, have bilateral agreements with business partners as to transferring production facilities in the case of a catastrophic event.
- to the extent it is possible, have plans for temporary shifting production to other owned facilities, or diverting output/increasing production from other facilities.

Companies active in industries related to infrastructure and construction should seek business opportunities in Kyushu.

Companies relying on suppliers from the core affected areas can expect delays; for the longer term, companies should have back-up plans for alternative suppliers.

After an initial assessment of the damage to Kumamoto Prefecture’s public infrastructure, costs are estimated at JPY170bn (USD1.6bn) at least. In terms of buildings, about 30% of the surveyed buildings in affected areas have been deemed dangerous or at risk of collapse (the majority in Kumamoto City, Mashiki and Nishihara), and this excludes some core damaged areas where surveys have not been conducted yet. In absolute numbers, 12,000 buildings out of a surveyed 43,000 are at risk of collapse or pose danger (as of end-April).

As of the first week of May, bullet train services (Shinkansen) in Kyushu had resumed across the entire line but with fewer trains and some delays. Regular trains have resumed services with the exception of the JR Hohi Line between Higo-Ozu and Bungo-Ogi (substitute buses are running between Miyaji and Bungo-Ogi) and the entire line of Minamiaso Railway (it is estimated that a full recovery of the line will take more than a year).

According to Japanese traffic monitoring sites, as of 5 May there were road closures between Beppu and Yufuin in Oita prefecture (part of the Oita Expressway), and traffic was difficult in parts of Kumamoto prefecture (between Mashikikumamotokuko and Oiketakayama on the Kyushu Expressway) but no major arteries were closed. Small road closures occur, predominantly between Kumamoto City and Mount Aso. A collapse occurred at the mouth of the Tawarayama Tunnel between the villages of Nisihara and Minami-Aso.

All the airports have re-opened.

Kyushu is also the location of the only nuclear facilities that have restarted (Sendai 1 and 2) since the shutdown caused by the 2011 tsunami and Fukushima nuclear disaster. Authorities report that the nuclear facilities were not damaged in this latest incident.
DIRECT IMPACT ON NATIONAL ECONOMY

GDP in the prefectures of Kumamoto and Oita (the most affected prefectures on Kyushu) represent 1.1% and 0.9% respectively of national GDP; hence, the direct impact on Japan’s GDP is likely to be small. It is likely that we will see a drop in industrial production in Q2 due to the role of Kyushu in national supply chains, but this should be reversed in H2 2016. In the last earthquake of a similar magnitude, nationwide production recovered to pre-earthquake levels within one month. Tourism expenditure in Kyushu is around JPY580bn a year; a 30% year-long drop in tourism means only around 0.04% of national GDP. It is difficult to say at this stage what the impact will be on consumer sentiment at a national level, but it is not estimated to be great. Both the public and the private sectors’ preparedness and emergency responses to the disaster have been very good.

INDIRECT IMPACT ON THE NATIONAL ECONOMY

The Kyushu earthquakes may end up having a more lasting effect on the national economy via their indirect effects on economic policy rather than the actual physical damage. After an impressive start to Abenomics, the country’s economic recovery all but ground to a halt in 2014. Many blame the VAT hike of April 2014, which sapped consumer and business sentiment. Inflation, which is seen as crucial in the battle against economic stagnation, has not increased markedly beyond the artificially induced effect of the tax hike and the weak yen.

Given the anaemic recovery, the second stage of the VAT increase was postponed to 2017, in the hope that by then the economy will be more resilient and the recovery on a surer footing. However, growth has not picked up, and speculation about another postponement had already started before the Kyushu earthquakes. It would have been politically difficult for Prime Minister Abe to once again backtrack on the promise to move Japan closer to fiscal sustainability, and also an embarrassing admittance of the failure of Abenomics, but the earthquake arguably provides a compelling excuse to once more postpone the tax increase.

While Japan’s public finances are in a dire state (Japan’s public debt is the largest in the world), the demonstrably negative short-term effects of the consumption tax hike on economic growth, the weak global growth environment and Japan’s sputtering economic recovery, currently outweigh the benefits of setting public debt on a slightly more sustainable trajectory. Moreover, there are mitigating factors to Japan’s fiscal situation, such as the overwhelmingly domestic ownership of public debt. The main risks are that as the debt grows, it will be increasingly held by foreigners. An influential former chief economist of the IMF has cautioned that as foreigners become important marginal holders of Japanese government debt, they will demand higher returns than domestic investors, which can quickly render Japan’s enormous public debt unsustainable. This is a medium-term threat rather than a short-term one, but worrying nonetheless.

In Dun & Bradstreet’s view, the most positive scenario would be that in which the government not only uses the earthquake as an excuse to postpone the tax hike, but then also uses the postponed tax hike as an excuse to implement the vital structural economic reforms that have met so much resistance from the political class and electorate. Chief among these is addressing issues that make the labour market very inflexible, a more vigorous effort at counteracting the effects of Japan’s catastrophic demographic (encouraging immigration and female labour participation) and liberalising those sectors of the economy that remain shielded from competition. Sound structural reforms would increase the country’s potential growth rate and generate the economic dynamism which would then allow the government to increase taxes without sacrificing growth.

CONCLUSIONS

As we mentioned above, the direct impact of the earthquake on the economy is not expected to be large. Moreover, reconstruction efforts are likely to deliver a boost in H2 2016, as will the supplementary budget that is currently being prepared (a decision over the size of the budget is expected in mid-May).

While the nuclear reactors in Kyushu escaped any damage, the earthquakes may further complicate the debate over the appropriateness of having nuclear facilities in Japan, and delay the restart of the other reactors. The Kyushu region was supposed to have been among the least seismically risky in Japan.
The car and electronics industries were the most affected by the earthquakes, Kyushu being a hub for semiconductors and auto parts. As of early May, most local businesses had resumed activity.

Of the large Japanese companies, Toyota was the most affected because it produces a larger share of its output domestically. As of the first week of May, Toyota had resumed production at all the vehicle assembly factories in Japan that it had shut down after the earthquakes. The company had been forced to shut down factories across the country as crucial parts produced in earthquake areas could not be made and/or delivered. Toyota had gradually resumed production over the course of April as factories reopened and parts were sourced elsewhere; it was able to supply those parts again by diverting some of the output from its factories in China and Mexico. Company officials estimate that the three-week shutdown has caused production to fall by some 80,000 units.

Sony’s image sensor factory in Kumamoto remained offline as of early May, and was not expected to resume production before the end of the month. The shutdown also affects production at other Sony sites that rely on image sensors. The company accounts for 40% of the global CMOS image sensor capacity, and any extended delays will have an impact on relevant supply chains across the globe.

Renesas Electronics, a major producer of microchips and a company which was badly affected in the 2011 earthquake, causing disruptions across global supply chains, this time fared better, and has already re-opened its factory in Kumamoto City.

Mitsubishi Electric aims to resume partial production at its factory in Koshi in the second week of May, and at its LCD factory in Kikuchi by the end of May.

The local government estimates that the damage to the local agriculture and forestry industry is at least JPY23.6bn (USD221m) in Kumamoto prefecture alone, and this without having assessed the most damaged areas. The figure includes damage to forest roads and forestry infrastructure, and damages to crops and ruptured canals. The damage to fisheries has not yet been assessed, but there has been mud inflow to rivers and collapsed seawalls which will likely have affected clam farmers and other fisheries.

Several major tourism attractions have suffered damage, among these Kumamoto Castle (collapsed turrets, fallen roof tiles etc) which will remain closed for an extended period, and the Aso Shrine (collapsed gates and rooms). Damages to parks in Kumamoto prefecture are estimated at JPY35.6bn.
COMPANY-LEVEL IMPACT: DUNS NUMBER ANALYSIS

Dun & Bradstreet Japan and Worldwide Network partner Tokyo Shoko Research determined that almost 44,000 entities in Kumamoto and Oita prefectures were located in areas that may have been directly impacted. That is close to 1% of the national total of registered company entities. An area was included in the impact zone if there was any reporting of deaths, if it sustained damage to 10 or more structures, reported more than 100 evacuees, or was subject to evacuation instructions or advice.

The greatest number of entities in affected postal codes, by far, was located in Kumamoto prefecture (97%) which felt the epicentre of the magnitude 7.0 main shock of 16 April. Of the prefecture’s 1,897 postal codes, well over 1,000 were in the overall area of potential impact. The entities in the area include 3,903 manufacturing companies (over 400 industrial and commercial machinery manufacturers, over 200 electronics manufacturers, and 200 chemicals manufacturers) and more than 10,000 retail establishments.

Reconnaissance surveys by catastrophe modeller RMS conducted in April determined that the areas of principal impact, around the main shock focus east of Kumamoto City, were in the districts of Nishihara-mura, Minamiaso-mura, and Mashiki-machi. This location set encompasses 42 postal codes and 1,405 companies and other entities. Entities in the areas of principal impact face a high risk that facilities, physical access to sites and critical services such as utilities have been disrupted.

Entities in the broader potential-impact zone as determined by Dun & Bradstreet/TSR criteria, may face moderate to severe disruption to inward and outward logistics and critical services such as utilities, even if their physical facilities are unharmed. More broadly, logistics services still cannot be guaranteed due to damage to arterial road and rail connections. Some delays in inward and outward logistics compared to normal performance may be expected over a broader area spanning Kumamoto, Miyazaki, Kagoshima Prefectures in postcodes 860xxxx – 869xxxx, 880xxxx – 889xxxx and 890xxxx – 899xxxx respectively.

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