

# THE 11 MARCH JAPAN EARTHQUAKE

## ESTIMATING THE ECONOMIC COST

It is too soon to quantify the economic and air transport market impact of the Japanese earthquake and tsunami. There are many uncertainties remaining. However, it is possible to put some scale to the problems by measuring the size of Japan's air travel markets and making a comparison of the economies of the prefectures affected by the present crisis with those affected by the 1995 Kobe earthquake.

	Passengers million	Revenues	
		US\$ million	% total
Japan domestic	82.8	19,100	31%
Japan-US	9.2	10,502	17%
Japan-China	8.6	6,480	10%
Japan-S Korea	9.6	3,119	5%
Japan-Taiwan	4.2	2,288	4%
Japan-Hong Kong	3.2	1,957	3%
Japan-Thailand	2.3	1,623	3%
Japan-France	1.0	1,505	2%
Japan-Germany	0.9	1,484	2%
Japan-UK	0.7	1,094	2%
Japan-Australia	1.3	1,087	2%
<b>Total</b>	<b>134.8</b>	<b>62,479</b>	<b>100%</b>

- Japan's air travel market represents 6.5% of worldwide scheduled air passenger travel.
- However, the US\$62.5 billion revenues generated on these markets represents more than 10% of airline revenues.
- The large domestic air travel market represents 31% of total passenger revenues from Japanese markets.
- The largest international air travel market with Japan is the US, which generates 17% of revenues.
- The next five largest markets are Asian, with China representing 10% of revenues.

	% market revenues
Japan domestic	100%
China	23%
Taiwan	20%
S Korea	20%
Thailand	15%
US	12%
Hong Kong	11%
Singapore	9%
France	7%
Germany	6%
Australia	6%
UK	3%

- The Japanese domestic market is clearly most exposed to any reduction in air travel in Japan.
- The next largest exposure is China's international air travel markets, with 23% of their revenues generated by travel to and from Japan.
- Taiwan, South Korea and Thailand have 15-20% of their international air travel revenues at risk.
- The US is much more exposed than individual European economies, with 12% of its international revenues exposed, compared with 6-7% for Germany and France and 3% for the UK.

	Population 000s	GDP JPY bn	GDP share %	Primary	Manufacturing	Employment 000s
				industry share %	share %	
<b>Tohoku region</b>						
Iwate	1,340	4,544	0.9%	3.0%	0.7%	689
Miyagi	2,336	8,286	1.6%	2.4%	1.1%	1,108
Fukushima	2,040	7,883	1.5%	2.6%	1.9%	1,010
Ibaraki	2,960	11,578	2.2%	4.4%	3.6%	1,462
as % of national total	6.8%	6.2%	6.2%	12.4%	7.2%	6.9%
<b>Hanshin/Kobe region</b>	17,006	68,151				7,756
as % of national total	13.3%	14.4%	13.1%	3.1%	13.6%	12.6%

- The 11 March earthquake did not hit Japan's industrial heartland.
- The four affected prefectures account for around 6% of Japan's economy and are predominantly rural.
- This compares with over 14% for the three, largely industrial, prefectures affected by the 1995 Kobe earthquake. The table above was adapted from Standard Chartered Bank 'Japan - assessing the crisis'.
- A number of investment banks estimate the financial cost of the earthquake and tsunami damage could be more than US\$200 billion. There should be no major problems in Japan's government raising the required funding and implementing this reconstruction, perhaps in the second half of this year.

- However, the larger economic consequences from the 11 March earthquake are likely to come from the damage to Japan's power supplies.
- The 1995 Kobe or Great Hanshin earthquake had little direct material impact on the path of Japan's GDP, or at least none that was not offset by other developments at the time.
- This time the impact on Japan's GDP in the short term will be brought about by the power cuts, disruptions to business activity and reduced consumer confidence. A number of investment banks estimate that the impact these disruptions have could reduce Japan's GDP in the second quarter by 0.5-1%. However, second half reconstruction could offset the initial economic declines, if implemented fairly quickly. Some economists suggest there may be no net effect on 2011 GDP, as a result of a 'V'-shaped profile to the economic impact.
- However, there are huge uncertainties remaining and the downward leg of the 'V' could be longer than some have initially estimated. The power and nuclear safety situation are one of the key uncertainties that could affect the economy and inbound tourism.
- When the Kobe earthquake happened in 1995 the Japanese economy represented some 8-9% of world output. Today Japan has a smaller share at around 5-6% and domestic demand has been relatively weak. In terms of aggregate demand the 11 March earthquake may not lead to much reduction. However, Japanese companies do still retain an important place in the global supply chain, supplying important components to the electronics and autos industry. These are key shippers for the air freight industry and so could cause disruption for this air transport market segment.
- Air transport markets more generally are likely to be impacted with a similar 'V'-shaped profile to that of Japan's GDP: reduced travel and freight in the second quarter and possibly the third, followed by a second half upturn. If GDP is unchanged on average, as some suggest, then air transport markets may be similarly restored over time.
- Japan is also a relatively large refiner of jet kerosene, producing an average of 240,000 barrels per day in 2010, which is some 3-4% of global production. A significant proportion of this was exported to the Asia region. Until refinery runs can be raised elsewhere this is likely to put some upward pressure on jet kerosene margins over crude prices.

21<sup>st</sup> March 2011