FM Global Supply Chain Risk Study:

China and Natural Disasters – A Case for Business Resilience

FM Global®

Executive Summary

The Japan earthquake and tsunami of March 2011 was a close call and a call to action for many global companies with supply chains in China, according to a survey of senior financial executives. Financial executives now seem to realise that if a similar earthquake and tsunami occurred off the coast of China, the worldwide impact to supply chains could be much worse.

With China being a major economic centre and supply chain hub exposed to many of the same natural catastrophe threats as Japan, if not more so, many multinational companies say they are concerned about their operations in this fast developing country—a region that has not yet fully embraced many of the risk management practices of its western counterparts.

Key Findings

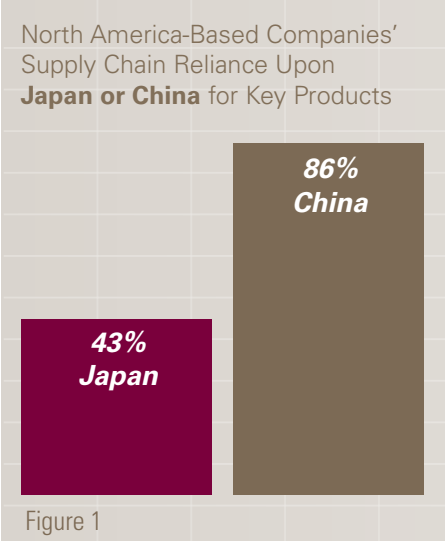
1. Nearly nine in 10 companies surveyed (86 percent) are more reliant on China as part of their supply chain for their key product lines than they are on Japan (43 percent). *(Figure 1)*

2. An overwhelming majority of companies surveyed (83 percent) consider supply chain disruption to be a "moderate" to "greatest risk" overall, considering all of the factors that can affect the financial well-being of their organisations. *(Figure 2)*

3. As a result of the Japan earthquake and tsunami, 94 percent of companies reliant on China for their supply chain are concerned about natural disaster-related supply chain disruptions in China. *(Figure 4)*
   - 61 percent of those companies say they were "somewhat" to "extremely" concerned about supply chain disruptions in China prior to the Japan earthquake and tsunami. *(Figure 3)*
   - 39 percent of those companies say the Japan earthquake and tsunami has increased their level of concern about supply chain disruptions in China. *(Figure 4)*
   - 55 percent of those companies say they still have the same level of concern as they did before the Japan earthquake and tsunami. *(Figure 4)*

4. More than six in 10 companies reliant on China for their supply chain are looking at their supply chain risk in China more diligently as a result of the Japan earthquake and tsunami. *(Figure 5)*

   As a result of the Japan earthquake and tsunami:
   - 61 percent of those companies are considering "implementing a more robust risk assessment process" to mitigate their supply chain natural hazard exposures in China. *(Figure 5)*
   - 65 percent of those companies are considering "increasing collaboration with suppliers on mitigating risk at their locations" to mitigate their supply chain natural hazard exposures. *(Figure 5)*
   - 70 percent of companies reliant on China for their supply chain are considering "increasing alternative sourcing" to mitigate their supply chain natural hazard exposures. *(Figure 5)*



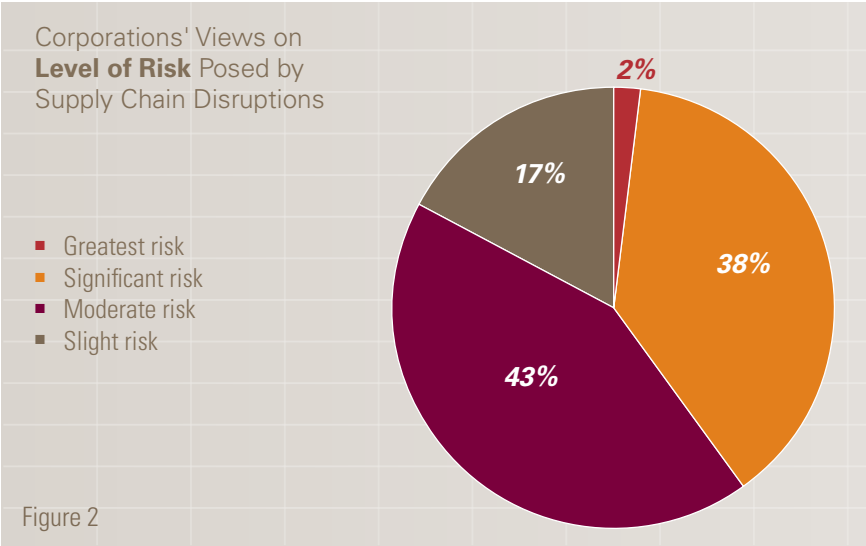


Figure 2

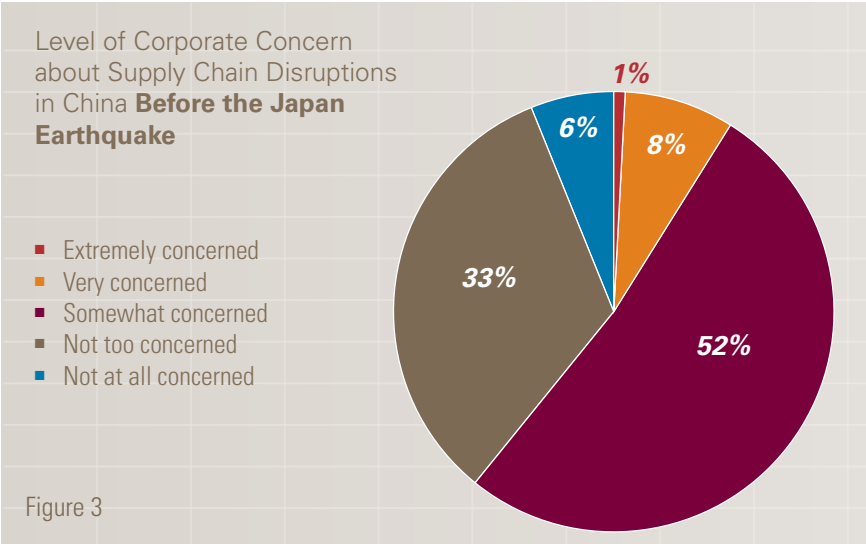


Figure 3

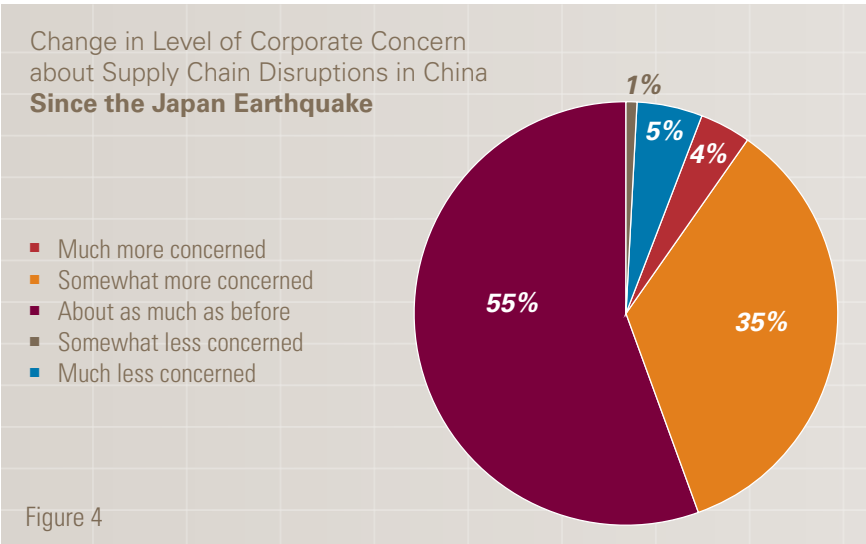


Figure 4

Business Implications

Natural disasters can quickly disrupt even the best managed supply chains as seen by the 2011 earthquake and tsunami in Japan and even by the floods in Thailand. Should similar natural disasters strike China, the impact could be even more devastating.

"The findings of the FM Global Supply Chain Risk Study should be a wake-up call for companies that have substantial investment and dependency on supply chains in China," says Vinod Singhal, Brady Family Professor of Operations Management at the Georgia Institute of Technology's College of Management. "A natural disaster-related supply chain disruption in China would have far-reaching and long-lasting negative economic impact. It would slow down the global economy as China is not only a major exporter of goods, but also a major importer of goods.

"It would cause shortages in many consumer and industrial products that could lead to inflation. And finally, it would devastate the share price of companies," Singhal adds.

The increased supply chain risk exposure in China underscores the need to look at supply chain resiliency beyond just certain risk management tactics and geography. It should be more fundamental and strategic. The commitment to supply chain resiliency starts at the top of the organisation. The most progressive organisations view supply chain resiliency as a competitive advantage.

In such organisations, a supply chain disruption is viewed not merely as a threat, but rather as an opportunity to gain market share. Once a company

loses a client due to a lack of product availability emanating from a supply chain disruption, it could lose that business for good.

In particular, resiliency that is sustainable is about establishing a corporate culture that encourages forward-thinking; designing products and manufacturing processes that incorporate supply chain risk; building collaborative relationships with suppliers to mitigate risk; and having the agility to quickly and effectively deal with a disruption as a result of robust business continuity planning.

"The findings in this report point to how interdependent risks can have severe financial consequences in global supply chains," says Dr. Howard Kunreuther, the James G. Dinan Professor of Decision Sciences and Public Policy at The Wharton School of the University of Pennsylvania (USA), where he is co-director of the Risk Management and Decision Processes Centre.

"Successful mitigation of interdependent risk is strategic in nature and involves the entire organisation, including key external business partners. More specifically, firms need to undertake proactive measures, such as finding several sources of supply so that they are not dependent on one company that may be adversely affected by a future natural disaster. Finally, there needs to be a realisation that the process of developing a resilient supply chain takes time," Kunreuther says.

When thinking about your organisation's resiliency, especially when looking at emerging markets such as China, consider the following:

1. Does your senior management view resiliency as a competitive advantage and has it made the necessary commitment?
2. Has your organisation examined how it can mitigate risk within its products and processes?
3. How well does your company collaborate with its suppliers to assess and mitigate risk?
4. Does your corporation have appropriate business continuity and disaster recovery plans for supply chain disruptions emanating from emerging markets, such as China?

If you are not addressing these questions, your competitors may well be doing so. The number one killer of businesses is complacency.

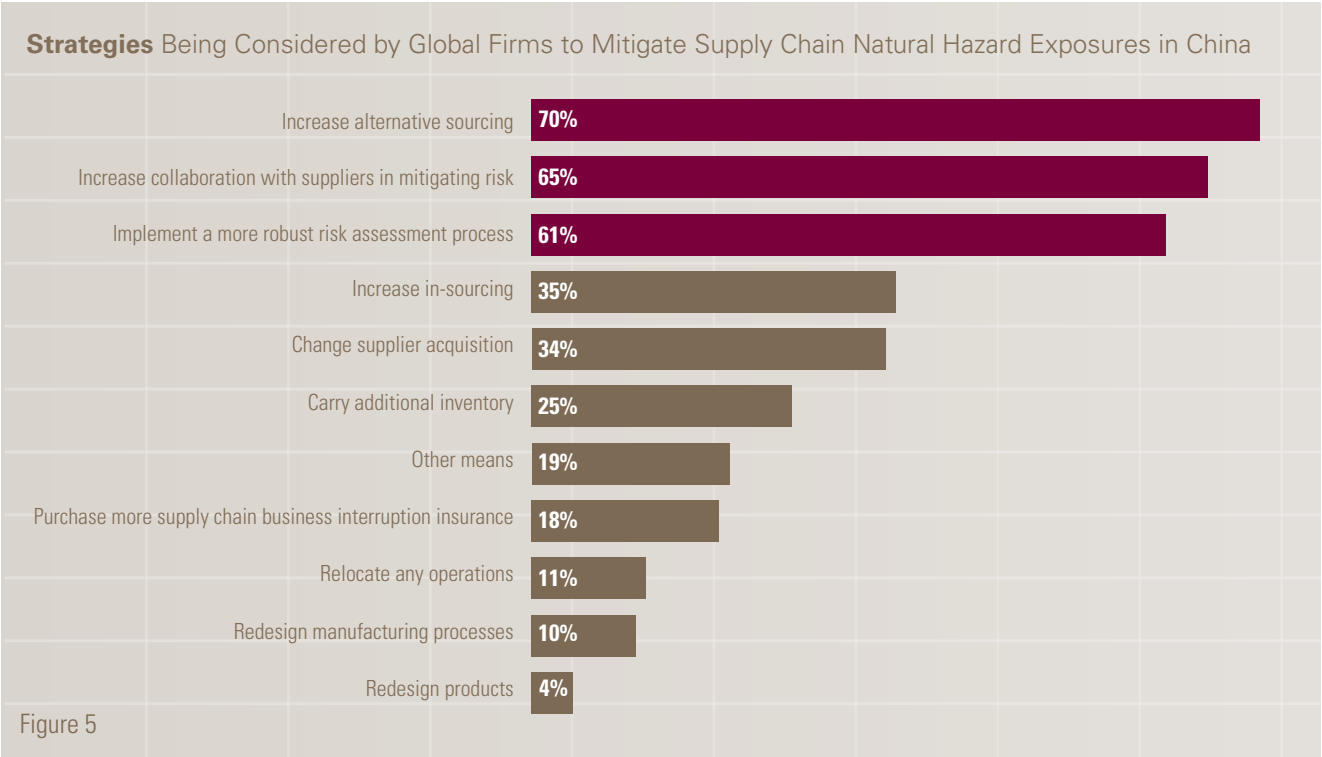


Figure 5

Study Methodology

Commercial and industrial property insurer FM Global commissioned TNS, a global market research firm, to conduct the study. One hundred financial executives (chief financial officers, treasurers and senior vice presidents of finance or financial officers at higher levels) from large global corporations (more than US$1 billion in sales) headquartered in North America were interviewed by phone between July and September 2011.

Important Facts about China

- **Economy**: The world's third largest economy *(Source: CIA World Factbook)*
- **Gross Domestic Product**: US$10 trillion on a purchasing power parity basis (compared with nearly US$15 trillion for the European Union and the United States). Growth in GDP has been close to 10 percent per year. *(Source: CIA World Factbook)*
- **Economic Centres**: Nearly 60 percent of economic activity in China as measured by GDP takes place on its East Coast provinces. *(Source: China National Bureau of Statistics [NBS] - December quarter GDP 2010 by provincial-level divisions)*
- **Natural Hazards Exposure**: Earthquakes, floods and typhoons are commonplace along the East Coast of China where the majority of its economic activity takes place. *(Source: AXCO)*
  - The Pearl River Delta region is a prime example of significant economic activity overlaid with significant risk. If it were its own country, the Pearl River Delta would be the 16th largest economy in the world, and yet most of the region is below sea level and prone to significant flooding and storm surge. The risk is increasing daily as the region is sinking due to upstream trapping of sediment from dams and reservoirs. *(Source: Human activity threatens world's river deltas, University of Colorado study, September 2009)*
  - According to FM Global research, there is a 26-percent chance of a major event happening in the roughly 30-year lifespan of a building. *(Source: FM Global)*
- **Risk Quality**: According to various insurance industry studies in China, there is enormous variation in the quality of industrial facilities, ranging from the remnants of the communist industrialisation to state-of-the-art facilities imported from abroad. In addition, the practice of risk management is almost wholly undeveloped in China. The local economy is still significantly influenced by state-owned enterprises, many of which either do not insure at all, or only insure their assets to the extent required by banks. *(Source: AXCO)*

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For additional information about the findings contained in this report, please contact:
Steven Douvas, assistant vice president, market research
FM Global
270 Central Avenue
Johnston, RI 02919 USA
+1 (1)401 415 1889
steven.douvas@fmglobal.com

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