

SUMMARY OF MASTER'S DISSERTATION

Student Identification Number	81134556	Name	John Roland Tainton
<p>A Study on Extreme Events in Global Supply Chains - The Diffusion and Secondary Effects of Disasters on Economies and Trade -</p>			
<p>Extreme events and disasters have always been part of our lives, however as the world has become more globalized over the past few decades in an attempt to reduce production costs and access new markets, these events are more likely than ever to affect businesses. It is therefore important for business to understand how these events affect their supply chains.</p> <p>This thesis identifies behavioural patterns of manufacturing supply chains under the effects of extreme events and then after identifying the behavioural patterns provide mitigation measures for companies based on the different pattern types.</p> <p>This thesis analysed the behaviour of automotive supply chains in Japan from January 2006 until December 2012. This time period includes two large impact events: The Financial crisis of 2008 and the Tohoku earthquake in 2011. After analysing these events, it was found that the events affected the supply chains differently. Three behavioural types were identified: Demand Disruption, Supply Disruption and Mixed Disruption events. A simulation model was then constructed to analyse the underlying structure and behaviour of the supply chain under the disruption events. The findings were verified by finding the same behaviour patterns in other large impact events</p> <p>Demand disruptions were found to have relatively short impact periods; however the recovery periods are significantly longer. Mitigation strategies for demand disruption events include flexible manufacturing and lean supply chains. Profit margins and large cash reserves in relation to expenses were also identified as important.</p> <p>Supply disruptions were found to have short impact periods as well as short recovery periods. Mitigation strategies for supply disruptions include increasing inventory levels, supply chain globalization and supply chain redundancy.</p> <p>The mitigation strategies were confirmed through discussions with members of industry.</p>			
Extreme Events, Supply Chain Risk Management, Disruption Behaviour			