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Supply Chain Disruptions and Stock Prices

The Effects of Hurricane-Induced Disruptions on Company Stock Price

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Chapter 6

Conclusions

This chapter concludes the book, summarising key takeaways for both practitioners and academics on managing Hurricane-Related Risks based on our research findings. The summary encapsulates the critical outcomes of our research, shedding light on the intricate relationship between hurricanes, supply chain disruptions, and firm performance. Our study draws from a diverse range of academic sources, offering profound insights into the imperative of proactive management and transparent communication during hurricane-induced supply chain disruptions.

6.1 Contribution to Knowledge

6.1.1 Hurricane Announcements Lead to Mostly Negative Reactions

Our research reinforces existing studies highlighting the adverse impact of disasters on stock prices (Caporale and Makarenko, 2019; Papadakis, 2006). We introduce a unique perspective by comparing hurricane incident announcements and hurricane announcements, shedding light on investor behaviour and the role of communication in mitigating stock price reactions. Our findings corroborate the efficient market hypothesis (Fama et al., 1969), underscoring the significance of timely information dissemination.

In exploring Hypothesis 1, we confirm that hurricanes and hurricane-related incidents indeed have a substantial impact on stock prices, aligning with the broader body of research recognising the disruptive influence of disasters on financial markets (Caporale and Makarenko, 2019). Moreover, we find that the effect of such announcements is primarily negative, highlighting the rapid reaction of markets to new information (Fama et al., 1969). An intriguing aspect of our study is the distinction between announcing and non-announcing firms as a control group, revealing that stock prices can react even before official announcements, underscoring the role of uncertainty and investor anticipation (Blose et al., 1996).

6.1.2 Industry Moderates Stock Price Reactions

Our research expands our understanding of how various industries respond to hurricane announcements, aligning with prior studies emphasising sector-specific vulnerabilities (Hendricks and Singhal, 2003; Worthington and Valadkhani, 2005). The negative impact on stock prices is not uniform across all sectors. We discover that industries such as consumer services, consumer non-durables, capital goods, and basic industries tend to endure the most negative effects. This underscores the importance of industry-specific preparation and supply chain risk management (Worthington and Valadkhani, 2005).

Furthermore, we delve into industry-specific stock price patterns following hurricane announcements. While the transitory change function prevails across industries, the proportions of other best-fitting patterns differ. For instance, the capital goods sector predominantly exhibits negative reactions and step functions, indicating sustained stock price declines. In contrast, the healthcare and consumer durables sectors often display positive reactions, suggesting resilience to hurricane incidents (Dietch and Corey, 2011; Donadelli and Lucchetta, 2013).

6.1.3 Minor Supply Chain Disruptions Elicit Positive Reactions

Our research distinguishes between major and minor supply chain disruptions and their impact on stock prices. While previous studies have primarily focused on the negative effects of supply chain disruptions, our findings introduce a novel perspective. Major supply chain disruptions indeed lead to predominantly negative stock price reactions, aligning with prior research (Hendricks and Singhal, 2003, 2008; Zsidisin et al., 2016). However, our research uncovers a unique phenomenon – minor supply chain disruptions often result in positive stock price reactions. This novel insight suggests that shareholders value effective supply chain risk management that prevents more severe disruptions (Zsidisin et al., 2016).

Furthermore, our study categorises supply chain disruptions and other damage, providing a comprehensive understanding of their distinct effects. This approach enriches the literature on supply chain disruptions by highlighting the financial implications of different types and severities of disruptions (Caporale and Makarenko, 2019).

6.1.4 Transparency in Communication Matters

Transparency in corporate communication emerges as a crucial factor in shaping stock price reactions. Our research underscores the significance of providing specific information on damage following hurricane incidents, a factor previously overlooked in the literature (Dietch and Corey, 2011). Shareholders appreciate detailed infor-

mation, which reduces uncertainty and fosters trust. This aligns with principles of information transparency and its positive impact on investor behaviour (Bloese et al., 1996).

Our findings suggest that companies that offer more comprehensive information on the extent of damage experience fewer negative stock price reactions and, in many cases, positive reactions. This indicates that investors value a high level of detail in hurricane incident announcements and penalise a lack of transparency. Managers can leverage this insight to enhance their response to and preparation for hurricane-related events, both in terms of SCRM and corporate communications (Bloese et al., 1996).

6.1.5 Proactive Measures Are Supported

Our research explores preventive closures of production facilities during hurricanes, revealing that shareholders support such proactive measures, even when they result in temporary supply chain disruptions (Papadakis, 2006). Companies that choose voluntary closure of production facilities are unlikely to experience negative stock price reactions, highlighting the value of proactive supply chain risk management efforts.

In practice, our findings suggest that companies should not hesitate to implement preventive measures during hurricane threats. The potential benefits of preventing extensive damage and maintaining operational continuity outweigh the short-term disruptions. Companies can communicate these decisions transparently to shareholders, emphasising their commitment to supply chain resilience and risk management.

6.2 Contribution to Practice

6.2.1 Active Management of Hurricane Risks

Our research underscores the proactive management of hurricane-related risks, aligning with the principles of disaster risk reduction. It emphasises the importance of timely communication to mitigate stock price reactions and provides guidance on the nature of communication, including the use of negative announcements.

In practice, our findings serve as a compelling reminder to companies that hurricanes are not “black swan” events but foreseeable risks that require strategic preparation. By actively managing hurricane risks through effective SCRM and transparent communication, companies can better navigate these challenges and minimise their impact on stock performance.

6.2.2 Sector-Specific Preparation

Our findings offer practical insights for firms across industries, emphasising the importance of active hurricane risk management. Sector-specific preparations are essential, and our research aids in understanding expected stock price reactions based on industry, guiding strategic decisions. Practically, our research encourages companies to recognise that while hurricanes pose risks to all sectors, tailored preparations are necessary to address sector-specific vulnerabilities. Boards and senior management can use our insights to inform strategic decisions regarding supply chain risk management and disaster preparedness.

6.2.3 Prioritise Supply Chain Resilience

Our research encourages firms to prioritise supply chain resilience, especially in the face of major supply chain disruptions (Zsidisin et al., 2016). The positive stock price reactions to effective supply chain risk management underscore the financial benefits of reducing the severity of disruptions. In practice, our findings suggest that companies should allocate resources and efforts toward managing and mitigating supply chain disruptions. Effective supply chain risk management strategies, such as diversifying suppliers, implementing redundancy plans, and improving visibility across the supply chain, can help reduce the financial impact of disruptions.

6.2.4 Transparent Communication Builds Trust

Our research highlights the critical role of transparent communication in reducing stock price reactions (Blose et al., 1996). Providing specific information on damage fosters trust and minimises uncertainty, aligning with principles of information transparency. In practice, our findings underscore the importance of clear and detailed communication during hurricane-related incidents. Firms should proactively provide information to shareholders, the media, and the public to ensure that accurate information is disseminated swiftly. This not only reduces uncertainty but also helps maintain the trust of stakeholders.

6.2.5 Take Proactive Measures

Our findings encourage firms to proactively implement preventive closures when necessary, aligning with principles of risk reduction (Papadakis, 2006). Shareholders generally support such measures, even when they result in temporary disruptions, as they prevent more severe damage. In practice, our research suggests that companies

should not hesitate to implement preventive measures during hurricane threats. The potential benefits of preventing extensive damage and maintaining operational continuity outweigh the short-term disruptions. Companies can communicate these decisions transparently to shareholders, emphasising their commitment to supply chain resilience and risk management.

6.3 Conclusion

In conclusion, our research emphasises the proactive management of hurricane-related risks through effective supply chain risk management and transparent communication. Hurricanes are not “black swan” events but foreseeable risks that require strategic preparation. By applying the insights from this research, companies can enhance their resilience and minimise the impact of hurricanes on their performance, aligning with principles of disaster risk management and corporate governance. These findings not only contribute to the academic literature but also offer practical guidance for companies seeking to navigate the complex landscape of hurricane-related risks and supply chain disruptions.

6.4 Prospects for Future Studies

The horizon for future research in this field is broad and diverse. In the context of hurricanes, studies could delve into the impact of sequential hurricanes or analyse how various hurricane categories and their distinct characteristics influence stock prices. Comparative research is also ripe for exploring how different types of disasters, both historical and contemporary, affect market values. An examination over time could reveal patterns in how stock prices respond to assorted disasters, individually and collectively.

Cross-national studies could investigate how disaster impacts on stock prices vary by the country of the stock’s listing. It would be particularly insightful to focus on disasters that have a global reach or, even more pertinently, a single disaster impacting multiple nations. Additionally, establishing and examining different reference points could yield significant findings. Other potential factors that may influence stock prices warrant identification and examination.

One emergent area of interest is the economic influence of the COVID-19 pandemic on businesses worldwide, which presents an opportunity to study the varied responses of global indices and different industry sectors. The effects of statements by political figures updates from relevant organisations like the World Health Organization, or breaking news developments offer further fertile ground for research. Comparing the current pandemic’s economic impact with past health crises, such as the Ebola and Swine flu outbreaks, could provide valuable context. Overall, the

research methodology employed here holds great promise for uncovering a wealth of nuanced insights into how disasters shape financial markets.

References

- Blose LE, Bornkamp R, Brier M, Brown K, Frederick J (1996) Catastrophic events, contagion, and stock market efficiency: the case of the space shuttle challenger. *Review of Financial Economics* 5(2):117–129
- Caporale GM, Makarenko I (2019) Force majeure events and stock market reactions in ukraine. *Investment Management & Financial Innovations* 16(1):334
- Dietch EA, Corey CM (2011) Predicting long-term business recovery four years after hurricane katrina. *Management Research Review* 34(3):311–324
- Donadelli M, Lucchetta M (2013) Emerging stock premia: Some evidence from industrial stock market data. *Asian Economic and Financial Review* 3(4):398
- Fama EF, Fisher L, Jensen MC, Roll R (1969) The adjustment of stock prices to new information. *International economic review* 10(1):1–21
- Hendricks KB, Singhal VR (2003) The effect of supply chain glitches on shareholder wealth. *Journal of Operations Management* 21(5):501–522
- Hendricks KB, Singhal VR (2008) The effect of supply chain disruptions on shareholder value. *Total Quality Management* 19(7-8):777–791
- Papadakis IS (2006) Financial performance of supply chains after disruptions: an event study. *Supply Chain Management: An International Journal* 11(1):25–33
- Worthington A, Valadkhani A (2005) Catastrophic shocks and capital markets: a comparative analysis by disaster and sector. *Global Economic Review* 34(3):331–344
- Zsidisin GA, Petkova BN, Dam L (2016) Examining the influence of supply chain glitches on shareholder wealth: does the reason matter? *International Journal of Production Research* 54(1):69–82