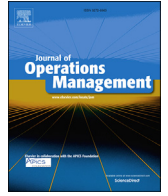




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# The effect of the Rana Plaza disaster on shareholder wealth of retailers: Implications for sourcing strategies and supply chain governance<sup>☆</sup>

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## ABSTRACT

Supply chain and reputational risks are often assumed to motivate firms to source production in developed, high-cost countries rather than developing, low-cost countries. To examine this assumption, we provide evidence from the collapse of the Rana Plaza building on April 24, 2013, which with its 1133 fatalities and 2438 injuries is seen as one of the worst industrial accidents in history. Do markets react negatively enough to such events to motivate firms to shift their sourcing strategy? We analyze the stock market reaction to the Rana Plaza disaster in the Bangladeshi ready-made garment industry to address this question. Our analysis is based on a sample of 39 publicly traded global apparel retailers with significant garment sourcing in Bangladesh. Stock market reaction to retailers on the day of the Rana Plaza disaster is negative, but its magnitude and significance dissipate by the following day. We find no evidence of significant stock market reaction during the 11 trading days (approximately two weeks in calendar time) following the disaster. Retailers responded to the disaster by developing two different agreements to improve factory and worker safety in Bangladesh – the Accord on Fire and Building Safety in Bangladesh (AFBSB), and the Alliance for Bangladesh Worker Safety (ABWS). We find no evidence of significant stock market reaction to the announcements of the AFBSB and the ABWS. The insignificant negative economic impact from the Rana Plaza disaster suggests that retailers have little economic incentive to move sourcing out of Bangladesh or other low-cost countries so as to reduce the risk of being involved in such events. We discuss the implications of our results for retailers, non-governmental organizations (NGOs), garment factory owners in Bangladesh, the Bangladeshi government, and academic researchers.

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## 1. Introduction

At approximately 9:00 a.m. local time on Wednesday, April 24, 2013, Rana Plaza, an eight-story commercial building in Savar, Bangladesh, collapsed. The building housed several garment factories employing approximately 5000 workers. Due to the nature of the disaster site and the caution required to not further injure survivors, recovery efforts took several days; the final survivor was not rescued until May 10, 16 days after the building collapse. Despite immediate local and international rescue response, there

were 1133 fatalities and 2438 injuries (CPD, 2013). Although garment factories in Bangladesh and other developing countries had previously experienced industrial accidents, the Rana Plaza disaster is one of the worst industrial accidents in history (Hobson, 2013). The scale of this unspeakable tragedy increased awareness of the risks and costs of sourcing from low-cost countries, as well as the need to improve supply chain governance mechanisms for working conditions and safety in the global garment industry.

A commonly held assumption is that, for firms sourcing in developing countries like Bangladesh, incidents like the Rana Plaza disaster cause enough financial and reputational damage to motivate firms to either: 1) move production to more developed, high-cost countries with a higher level of worker protection; or 2) actively engage in improving working conditions in the developing, low-cost country. Further, the media and risk exposure resulting

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from the Rana Plaza disaster suggests that protection from such exposure might represent an advantage for producers in developed economies where worker safety is well managed. In this paper, we study whether such an advantage exists by estimating the shareholder wealth effects of the Rana Plaza disaster for firms with significant apparel sourcing contracts in Bangladesh. The magnitude of economic impact can provide insights into the degree to which retailers are willing to pay a premium to ensure safe working conditions.

Our research approach builds upon the work of [Hendricks and Singhal \(2003, 2005a, 2005b\)](#) who find the shareholder wealth impacts of supply-chain disruptions to be significantly negative and typically greater in magnitude than many other types of operational, marketing, and financial events ([Hendricks and Singhal, 2003](#), Table 4). Their results provide evidence that investors are concerned about supply chain risks, react when risks are realized, and hold focal firms responsible for the performance of the supply chain. In this paper, we document the economic impacts of the Rana Plaza disaster, and thereby inform policy and practice of the role of market forces in motivating the improvement of working conditions in developing countries and avoiding future tragedies.

Improvements to working conditions require engagement and collaboration among stakeholders including national governments, factory owners, buyers, and non-governmental organizations (NGOs). It is unclear what mechanisms will be effective in mitigating industrial accidents and monitoring safety in the garment industry, and how the responsibility for worker safety will be distributed among the stakeholders. In the aftermath of the Rana Plaza disaster, retailers took the brunt of the criticisms for the safety conditions in the Bangladeshi garment industry (e.g., [Blair, 2013](#); [Silcoff, 2013](#)). Labor unions pointed fingers at retailers for ignoring safety violations in factories, and – together with NGOs – argued that retailers should take responsibility for working conditions in Bangladeshi factories. The failure of retailers to take action was claimed by labor unions to amount to criminal negligence ([CCC, 2013](#)). The popular press and social media also criticized retailers for their inability to ensure safe working conditions, contending that retailers have a moral and ethical obligation to offer such conditions. Others countered that retailers were being made the scapegoats, and that blame should instead belong to the indifferent factory owners who neglected safety, and the national and local governments that failed to enforce industrial and labor laws ([Bhagwati and Narlikar, 2013](#)).

Although major retailers initially discussed a single coordinated industry response, two different industry agreements emerged. The Accord on Fire and Building Safety in Bangladesh (hereafter referred to as AFBSB) was established by a group dominated by European retailers, international labor organizations, and NGOs. An alternative agreement, the Alliance for Bangladesh Worker Safety (hereafter referred to as ABWS) was established by North American retailers.

The Rana Plaza disaster is important to study not just because of the human scale of the tragedy but also due to the prominence of Bangladeshi exports in the global garment industry. Global apparel retailers (hereafter referred to as *retailers*) are skilled at finding and sourcing garments from low-cost production locations. As China—previously a primary location for low-cost garment sourcing—experienced wage increases and capacity pressures, retailers looked for alternative production sources. Bangladesh emerged as an attractive location due to its abundant supply of labor, and its labor costs among the lowest in the world. As an added bonus, governments in many developed economies lowered their import tariffs from Bangladesh to spur its economic development, further reducing the cost of sourcing from Bangladesh. A 2011 McKinsey & Company survey of Chief Purchasing Officers at European and US

apparel companies indicated that 86% would decrease or strongly decrease sourcing from China within the next five years, and that Bangladesh was their preferred alternate location ([Berg et al., 2011](#)). Consequently, the Bangladeshi garment industry has become a major exporter to the West, second only to China. It employs approximately 4 million Bangladeshis in over 5000 factories, and accounts for 45% of the country's total industrial employment. In 2012, the Bangladeshi garment industry exported about \$20 billion of garments, which accounted for nearly 75% of national export earnings and 10% of GDP ([BGMEA, 2014](#)). Approximately 75% of the exports were to European retailers and 25% to North American retailers ([OECD, 2014](#)). Hennes & Mauritz in Europe and Wal-Mart in North America are the largest importers of garments from Bangladesh ([D'Innocenzio, 2013](#)).

The results of our study are based on an analysis of the stock market effects on 39 publicly traded retailers that signed either the AFBSB or ABWS within 60 trading days following the Rana Plaza disaster. Stock market reaction to retailers on the day of the Rana Plaza disaster is negative and significant, but its magnitude and significance dissipate the following day. There is no evidence of significant stock market reaction during the 11 trading days following the Rana Plaza disaster. Over the 60 trading days following the Rana Plaza disaster the stock market reaction (adjusted for other contemporaneous announcements unrelated to the Rana Plaza disaster) is statistically insignificant. These results suggest that investors do not appear to hold retailers responsible for disasters at the end of extended supply chains, do not see the Rana Plaza disaster as seriously damaging the reputation of retailers that source from Bangladesh, and do not expect such disasters to significantly disrupt their apparel supply chains.

We find no evidence of a significant stock market reaction to the announcements of the AFBSB and the ABWS, suggesting that investors may view these agreements as not that different from what retailers were already doing to improve working conditions and safety in Bangladeshi garment factories.

The lack of significant stock market reactions may be surprising to many, especially in light of the significant negative impacts of other supply chain disruptions ([Hendricks and Singhal, 2003, 2005a, 2005b](#)). The insignificant negative economic impact from the Rana Plaza disaster suggests that retailers have little economic incentive to move sourcing out of Bangladesh or other low-cost countries so as to reduce the risk of being involved in such events. Our findings thus have important policy implications for governments, NGOs, consumers, and other stakeholders seeking to understand the degree to which incidents such as the Rana Plaza disaster shift the competitive playing field away from low-cost countries; and whether market forces alone are sufficient to improve working conditions in developing countries and avoid future tragedies.

Section 2 discusses how disasters like Rana Plaza can potentially impact the shareholder wealth of buying firms. Section 3 describes the sample and methodology. Section 4 presents the results. Section 5 summarizes and discusses the similarities and differences of our findings from existing research, and the implications of our findings for various stakeholders.

## 2. Shareholder wealth impacts of Rana Plaza

There are at least two major mechanisms for disasters like Rana Plaza to potentially impact the shareholder wealth of buying firms: damage to reputation, and supply disruption.

### 2.1. Reputation

Corporate reputation signals to consumers and investors such

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