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The Role of Business Insurance in Managing a Manufacturer's Product Quality Risk

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We consider a risk-averse manufacturer that decides whether to accept an order from a retailer and can purchase a business insurance contract. Once the order is delivered to the retailer, a random part of it would turn out to be defective associated with external failure cost. We find that business insurance can substitute and complement with an operational strategy that shares external failure cost or reduces the probability of product defects occurring.

Key words: yield uncertainty, business insurance, quality risk, risk aversion.

1 Introduction

The growing complexity of production processes and the widespread adoption of outsourcing strategies enhance product quality risk. Such risks may result in the adverse variability of a manufacturer's profit, which usually leads to cash flow stress. In 2013, due to a quality defect in cellphone appearance or functionality, Foxconn, the world's largest contract manufacturer of electronics, received nearly 5 million returned iPhones from Apple and lost almost RMB1.6 billion, accounting for two thirds of the company's total profits from iPhone production in 2012 [13]. Apple simply uses an inspect-reject policy for quality assurance. Foxconn is fully responsible for product quality. Furthermore, such loss could be worse due to capital market imperfections and threatens a manufacturer's survival. Practically, ACE Westchester provides ACE recall plus SM for small businesses

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