The Use of Multiple Risk Management Strategies: Evidence from the Natural Gas Industry

THE RISK INSTITUTE RESEARCH TRANSLATION SERIES
The Use of Multiple Risk Management Strategies: Evidence from the Natural Gas Industry

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Previous risk management studies characterized some risk managers as having a “risk silo” mentality because of their focus on one financial risk at a time. The risk managers traditionally chose derivatives as their risk management tool. However, understanding risk management requires a broader context that focuses on firms that use multiple risk management strategies to manage different sources of risk that could negatively impact firm value.

To explore that broader context, researchers Bernadette Minton at the Fisher College of Business at The Ohio State University, and Christopher Géczy and Catherine Schrand at the Wharton School at the University of Pennsylvania analyzed risk management activities in the natural gas industry. Their study “The Use of Multiple Risk Management Strategies: Evidence from the Natural Gas Industry” focuses on the complementarity and substitutability of four risk management strategies firms used to manage those risks. The researchers chose the natural gas industry because risk management tools can be more reliably measured using regulatory reports.

From 1978 through the 1990s, the natural gas pipeline industry faced changes in regulation that increased price volatility, separated production from transportation, and changed purchase and sales contracts. This provides a direct opportunity to study how natural gas pipeline companies use various risk management strategies such as derivatives use, operational hedging and the use of cash holdings to hedge price and volume risks.

The study found some connections among the risk management tools firms use. For example, holding cash and storing gas are the most compatible hedging tools. Firms that hold cash and store gas tend to have fewer financial constraints, which are indicated by higher interest coverage ratios, lower long-term debt ratios, and better S & P bond ratings, than firms that do not use these risk management tools. These strategies also positively correlate with diversification within firms that also do not have financial constraints.
The study found derivative usage is not often used in conjunction with the other risk management strategies. For instance, commodity derivatives and gas storage hedge different risks. Natural gas companies use gas storage as a risk management strategy primarily to hedge volume when storing costs are relatively low. In contrast, commodity derivative usage allows managers to hedge their companies’ sensitivity to natural gas price changes.

The researchers also found a negative correlation between derivative usage and diversification. When a firm diversifies through acquisitions or divestitures, it is less likely to use derivatives to manage price fluctuations. Altering a diversification decision through future acquisitions and divestitures involves significant costs. In addition, there are “costs” associated with diversification in that diversification can reflect, and might primarily reflect, other strategic motivations besides risk management. In contrast, a firm can alter the extent of its use of derivatives dynamically and at relatively low cost. Yet, firms that use diversification and derivatives have similar characteristics. The similarities indicate that the two strategies could be used as substitutes for each other.

Researchers started with the goal of understanding risk management strategies beyond previous “risk silo” research. Using natural gas pipeline data from regulatory sources, they were able to identify the source of volatility (industry deregulation) and the usage of specific strategies – holding cash, gas storage, derivatives, and diversification. Based on their research, they were able to conclude that effective risk management strategies helped natural gas firms manage the price and volume risks regulatory changes created.

Original article


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