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Enterprise Risk Management (ERM): Key Risks, Responses and Applications

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Abstract

As a member of the Society of Actuaries (SOA), I've taken on numerous roles over the course of my career. I started as an analyst, working primarily on data management. This highly technical role involved a lot of data manipulation and process automation within Excel and Access. I later moved into the role of assistant actuary, where I drove the conversion and redesign of the retirement plan predictive models by providing data and reporting analytics support, communicating across functional teams and conducting source-of-earnings and attribution analysis. Additionally, I utilized these stochastic and deterministic financial projection models to actively contribute to the analysis (involving the identification and measurement of key risk drivers); communication of results; design and planning of long-term liability projections such as embedded value, economic capital, asset adequacy testing and budget valuation. In my most recent role, on the pension risk transfer research and development team, I assisted in the pricing of U.S. funded buyout pension deals as well as the development of the U.K. longevity reinsurance collateral models.

I'm currently a chair for the SOA's Project Oversight Group. In this role, I use my knowledge and experience of financial and risk management methods and tools to help provide research that contributes to the intellectual capital of the actuarial profession and advances our knowledge base. I'm also a member of the Predictive Analytics Council. Although I'm relatively new to the council, this topic has been a passion of mine since the start of my actuarial career. I find the use of past data to make inferences about the future to help companies manage their risk and uncertainty to be highly fascinating. In addition to this, I'm a member of the Investment Section.

The purpose of this paper is to discuss various types of risks within an enterprise risk management (ERM) framework, responses to those risks and the implementation of an ERM framework. The key risks to be discussed include financial risk, market risk, physical assets risk, operational risk, strategic risk, reputational risk and supply chain risk. Although ERM is a relatively new term, the concepts that encompass an ERM framework have been in practice for generations. It is only recently that these concepts have been thoroughly examined and properly subdivided into the seven risk classes identified here. In addition to a discussion of these risk types, this paper aims to identify how to properly respond to such risks by either reducing, removing, transferring or accepting the risk.

Considering the scope of this paper and the broad range of risks being discussed, the idea being debated can be considered both theoretical as well as applied. The goal of this paper will therefore be to discuss the risks individually to better understand each, identify areas in which

they overlap, demonstrate ways to respond to them and show the methods by which they fit into an ERM framework. Additionally, the paper will delve into some of the current types and applications of the ERM platform. These applications include discussions on current processes that are being used in the measurement and management of risk and how these processes take shape within an organization.

To write this paper, I referred to the work of one of the most noted authors on this subject, Paul Sweeting (2017), as well as my own experience working in risk management. I chose this topic, in part, due to my belief in how important the ideas of this framework are in contributing to the overall stability of the management of companies and the overall health of the economy. Having worked through the 2008 global financial crisis and witnessed the hardship that resulted from inappropriate managing of risk illustrates why this paper and its findings are important. The problems in the U.S. housing market spread to the real estate market in Europe and to the banks with exposures to that market. The federal government bailed out the banks, cut spending and borrowed heavily. It is my hope that the knowledge gained in writing and sharing this paper will lead to more fun and less hardship among all organizational levels and industries.