Review on Risk Assessment and Risk Management

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Abstract: *Risk assessment and planning were developed some 30–40years ago as a scientific field. Principles and strategies for the conceptualization, evaluation and management of risk were developed. Such principles and techniques still constitute the cornerstone of this field today to a large extent, but many developments have been made, connected with both the theoretical basis and functional models and procedures. The risk management study began after World War II. Risk management has long been linked to the use of market insurance to protect individuals and businesses from various accident-related losses. Many types of risk management, alternatives to traditional insurance, emerged during the 1950s when market insurance was considered to be very expensive and inadequate for mere risk protection. During the 1970s, the use of derivatives as risk management tools emerged and expanded rapidly during the 1980s, as companies increased their financial risk management. Global risk control started in the 1980s and internal risk management models and capital measurement formulas were developed by financial firms to protect against unanticipated threats and minimize regulatory resources.*

Keywords: *Banking, Basel Accords, History Risk Management, Risk Management and Financial Crisis, Regulation.*

I. INRODUCTION

There is a long history to the definition of risk and risk assessments. More than 2400 years ago, the Athenians gave their risk assessment capability before making decisions. However, as a scientific field risk assessment and risk management are young, not older than 30–40 years. From this time on they see the first scientific journals, papers and conferences covering basic ideas and principles on how to properly evaluate and manage risk. Risk management has long been linked to using market insurance to protect individuals and businesses from various accident-related losses[1]. In 1982, one researcher wrote: “Operational convenience continues to dictate that different functions within a company should handle pure and speculative risks, although theory may argue that they are managed as one. Therefore, the emphasis of risk management tends to be on pure risks for practical purposes.” In this comment, the theoretical risks applied more to the financial risks than to the existing speculative risk concept. New forms of sheer risk management arose as alternatives to market insurance during the mid-1950s, when different types of insurance cover became very expensive and incomplete. There were several market threats that could be expensive or difficult to cover[2]. Contingent preparation practices were introduced during the 1960s, and various risk management or self-protection programs and self-3 insurance instruments were put in place against some losses. During this time, programs for the safety and coverage of work-related diseases and injuries also occurred at companies. The use of securities as tools for controlling insurable and uninsurable risk started in the 1970s and grew very quickly in the 1980s. It was also in1980s that corporations started to consider financial planning or portfolio management[3]. For many businesses, financial risk management has been made complementary to mere risk management. During the 1980s, financial institutions including banks and insurance companies stepped up their market risk and credit risk management activities. Management of operating risk and liquidity risk developed in the 1990s. In the 1980s, even, international risk management began. In order to protect themselves from unanticipated risks and minimize regulatory resources, financial institutions developed internal risk management frameworks and capital measurement formulae. At same time, risk management governance became important, integrated risk management was implemented, and the role of chief risk manager (CRO) was established[4].

II. HISTORY OF RISK MANAGEMENT

II.I. Insurance and risk management:

Risk management is a characteristic of a relatively recent business. Historic landmarks are important for illustrating its evolution. Modern management of danger began after 1955. The idea of financial risk management has grown considerably ever since the early 1970s. For particular, risk management has become less limited to coverage by commercial insurers, which is now considered a competitive security method complementing several other risk management activities. Post World War II, large firms with managed funds of physical assets started developing self-insurance against risks, which they protected for many small risks as well as insurers. Self-insurance covers financial implications of an incident or an adverse event or failure[5]. A basic practice of self-insurance involves creating a relatively stable pool of funds to cover risks arising from an incident or a negative fluctuation in the market. Risk mitigation, now often used to minimize the financial consequences of natural disasters, is a form of self-insurance. Activities of self-protection have also become very relevant. This type of activity affects the probability of accidents or costs before they occur. It may also affect the conditional distribution of ex ante losses. Prevention of accidents is the most normal form of self-control. Precaution is a type of self-protection introduced to suspected but uncertain incidents for which it is unknown the probability and financial implications. Another such event is a pandemic. All practices of safety and avoidance are a part of risk management. In the 1980s, the traditional role of insurers in the United States was seriously questioned, particularly during the liability insurance crisis that was characterized by exorbitant premiums and partial risk cover. Alternative forms of protection from different threats, such as prisoners, arose during that decade, risk management entities (business groups in a sector or area pooling to protect themselves against common risks) and limited insurance (risk transfer over time for one unit of risk exposure rather than between exposure units)[6]. Risk management actions are now financial choices that need to be judged on the basis of their effect on the performance of the company or portfolio, rather than on how well they cover those risks. The change in the concept applies in particular to major public entities, which, interestingly, may be the organizations least in need of risk protection (apart from the risk of speculation), because they can obviously diversify much easier than small businesses. Shareholders, in particular, are able to diversify their investments on financial markets at a much lower cost than the stocks they own.

II.II. Milestones in financial risk management:

The following table show important dates in the development of derivatives or structured financial products (Table 1)[7]. The emergence of modern economic theory is commonly related to the seminal work of a researcher in 1900; he was the first to use Brownian motion to examine fluctuations in the capital asset. It was only in the 1930s that work on financial asset prices began. The Americas Finance Association (AFA) first met in Philadelphia in 1939. Its first American Finance publication was published in 1942. In 1946 it became The Finance Journal. Research in finance at the time dealt specifically with price setting, financial market efficiency, and detection of profitable strategies (including stock price anticipation). The year 1932 marked the birth of the American Association for Risk and Insurance.

Table 1: The Launching of Derivatives and Structured Financial Products

1970s	Currency swaps
1972	Foreign currency futures
1973	Equity options
1979	Over-the-counter currency options
1981	Cross-currency interest rate swaps
1983	Equity index options
1983	Interest rate caps/floors
1983	Swaptions
1985	Asset back securities (ABS)
1987	Path-dependent options (Asian, lookback, etc.)
1987	Collateralized debt obligations (CDO)
1992	CAT and futures insurance options
1993	Captions/Floortions
1994	Credit default swaps (CDS)
1994	CAT bonds
1997	Weather derivatives
2002	Collateralized fund obligations (CFO)

III. ORGANIZATIONAL PERFORMANCE

Corporate performance is essential for survival and corporate progress and therefore, its evaluation is considered to be crucial for all types of organizations to determine the actions taken by companies and managers. More specific, evaluating performance provides institutions with the requisite feedback regarding both the efficiency and effectiveness of their activities and actions, thereby allowing more informed decisions. Organizational efficiency may include elements, such as customer service, cost control, quality, profitability, and success in asset management, depending on the organization. Consequently, it can be subjective or objective. Organizational success metrics include accounting indicators such as revenue return, return on investment, profit margin, market share or cash flow from operations or financial market measures such as earnings per share, stock price, market value / capitalization. Combined accounting / financial market methods are used such as intrinsic rate of return, cash flow per share or additional economic value, as they are ideal for balancing risk against operating performance problems.[8] Latest developments in organizations to include issues such as sustainability or terms of employment have further improved performance multidimensionality and, in addition, increased interest in more subjective performance measures. Ultimately, organizational improvement programs should consider both objective and subjective steps. It does seem, however, that risk management studies concentrate on objective measures.

III.I. Innovativeness:

Innovativeness could be generally defined as "the ability of an organization to learn, introduce and develop new processes or products for the company, though the processes or products may not be new to its local or foreign competitors". It is a continuous and systematic process that has developed over time, focusing on turning concepts into "good practice." Development of new products or services, use of new technologies or the art of design characterize innovation. In 1977, a researcher observed that organizational creativity is a one-dimensional construct, with an underlying level of perceived willingness to change in the organization. There are many factors that decide organizations ' innovativeness and among them there is a risk-taking propensity. From an organizational viewpoint, risk-taking tendency concerns the eagerness of an organization to engage in risky ventures, and a preference for daring (as opposed to cautious) actions to achieve the goals of a business At the same time, a company with a risk-taking tendency is possibly more effective in promoting and developing behaviors that lead to process improvements and developing new products / services with creative techniques.

III.II. Organizational success:

Organizational performance is an integrative concept that encompasses different aspects of organizational activity. For example, organizational performance might have several dimensions, according to researchers, such as: identifying and defining a solid market niche; creation of goods or services for the identified market niche; the acquisition and development of the resources needed to run the company; the development of day-to-day operating systems; production of management systems appropriate for the long-term operation of the organization; and finally, the development of an organizational culture important to lead the company. Over many decades assessing organizational performance has been a challenge over administrators and researchers alike[9]. Whilst financial measures have been of utmost importance for many years, in recent years new strategies have emerged that broaden organizational perspectives beyond conventional financial measures Organizational performance can usually be calculated in a variety of ways, depending e.g. on the sector or stage of development. To overcome potential differences in this measurement, measuring organizational success as compared to other similar entities is justified. Risk management can be considered to help companies mitigate their risks, while increasing their potential for success.

IV. RISK MANAGEMENT PROBLEMS

IV.I. Lack of reward contracts when information asymmetry is present:

Banks and loan officers had little reason to be diligent and track the risk of immovable lenders because a large portion of their loans were securitized in the face of moral hazard without an appropriate contractual provision. They were thus able to pass all default risk (and thus losses) without any retention to financial markets. As a consequence, such front-line organizations were less likely to be attentive to the default risk of their customers[10]. There was also an adverse selection: BBB financial products (minimum rating for accessing CDOs) were sold to trust firms, while some were in fact BB products with additional guarantees offered by insurers via CDS.

IV.II. Poor valuation by rating agencies for structured products:

As securitization stakeholders, intermediaries buy and finance long-term assets such as mortgage loans with asset-backed securities such as Asset Back Commercial Paper (ABCP) and CDOs. Achieving a high rating from credit rating agencies is vital for profitability. When the economic crisis began in 2007, ABCPs were downgraded and intermediaries were no longer able to roll their trade paper over. Consequently they were forced to ask their sponsors for support or lose money. This has led to a decline of several banks in several markets such as commercial paper in Canada, and a liquidity crisis. CDOs generated income during the same time by repackaging pools of risky loans and selling them in the form of tranches of bonds. The profits connected with this structuring exercise are greater when the credit rating is higher for the products. Rating agencies, however, found it difficult to assess these increasingly complex properties, since they lacked adequate models or data. Therefore, they graded those tranches as they would for standard bonds, without considering the real differences between the organized product tranches. Buyers of these tranches also found it very difficult to monitor and replicate the ratings of these structured products, as they lacked adequate data or models.

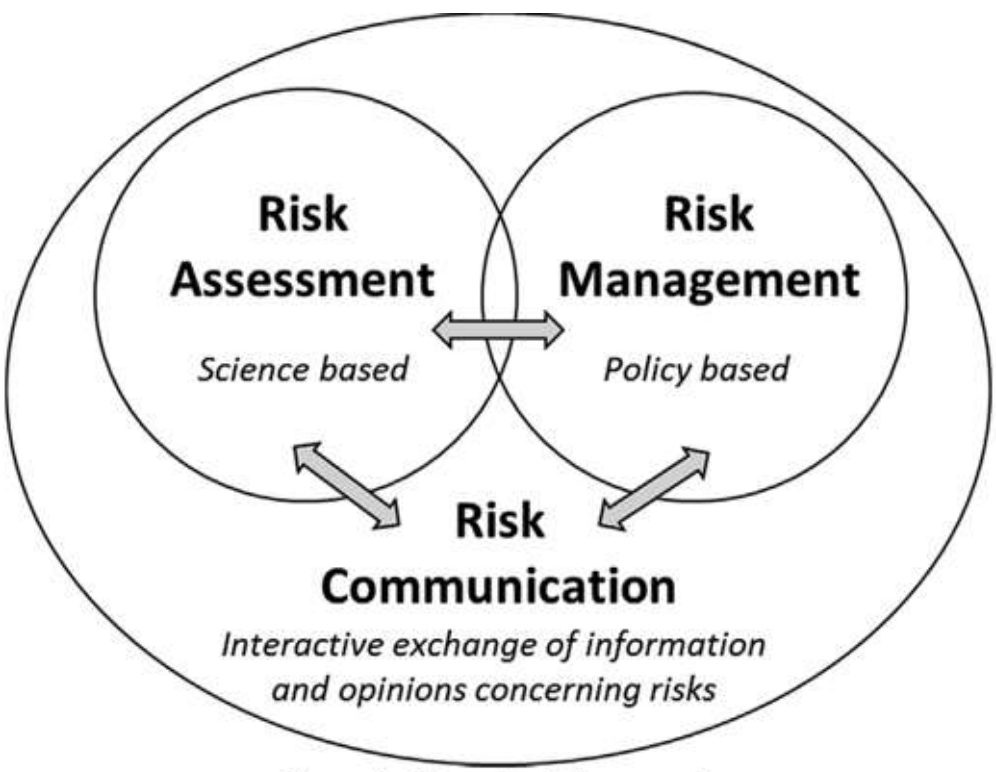

Figure 1 risk analysis framework

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IV.III. Poor price of complicated financial products:

The prices of structured financial instruments, which are often too small and do not reflect their true risk exposure, are another cause of the 2007 crisis. Such goods contained systemic risks which were not taken into account in the price. Systemic risk occurs when developments in one market impact other markets or other same market institutions. For instance, when there were problems with an ABCP, many money market managers converted their instructions to the Treasury bill market, thereby increasing prices and reducing returns. A lack of market openness exacerbated such externalities. In the case of ABCP in Canada, in 2007, many consumers did not know whether these goods were tainted by U.S. or other subprime products, but there were numerous reports as explained in figure 1.

V. CONCLUSION

This paper sought to offer a historic risk management analysis. In contrast to outlining the important events, author addressed risk management strategies and questioned its implementation in the years preceding the most recent financial crisis. The conclusion is that risk management must involve more than just reducing the risk exposure of the business. Risk management is aimed at optimizing firm efficiency by cost reduction associated with different risks. The key costs incurred by businesses are financial hardship, income taxes, funding of future investment ventures and stakeholder premiums. Risk management can also boost the capital structure of the company, implying that businesses in good financial health should take advantage of their knowledge advantage to develop strategies to hedge future prices. Organizations also need comprehensive risk management that would allow them to take advantage of the company's various forms of natural coverage.

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