

# Enterprise Risk Management

**For Equipment Leasing and Finance Companies**





The Foundation is the only research organization dedicated solely to the equipment finance industry.

The Foundation accomplishes its mission through development of future-focused studies and reports identifying critical issues that could impact the industry.

The Foundation research is independent, predictive and peer-reviewed by industry experts. The Foundation is funded solely through contributions. Contributions to the Foundation are tax deductible.

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## Preface

The ever changing landscape in which we operate is causing a heightened focus on risk in the Equipment Leasing and Finance industry. Overall credit quality, residual value estimations, capital availability and in many cases profits have degraded due to the Great Recession. New and impending regulations and pressure from oversight bodies to ensure that all companies have a systemic risk management program in place has turned Enterprise Risk Management (ERM) into the new buzz word.

The *Enterprise Risk Management for Equipment Leasing and Finance Companies* study is the latest of a series of forward looking publications the **Equipment Leasing & Finance Foundation** (The Foundation) undertook as part of its continuing effort to bring new information to the industry. The study focuses on:

- ERM evolution and its importance to the Equipment Leasing and Finance industry
- ERM programs and its processes
- Tools of the trade
- Implementing an ERM program

The Foundation engaged Capgemini, a leading global consulting firm, to research and produce this study for the industry. The study is based on industry research, ERM implementation experience and responses to survey questions from over 25 participants within the industry.

The Foundation and Capgemini would like to thank those companies<sup>1</sup> that participated in the study. Without their support and the support of the Foundation, this study would not have been possible.

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<sup>1</sup>The names of the participating companies have not been included in the study in order to maintain the confidentiality of their respective data.

## Executive Summary

*“...lessons learned from the Great Recession... improve your ability to assess enterprise risk”<sup>2</sup>*

*“...the industry has experienced the most severe downturn in almost every measurable category, from originations, delinquency, performance and, most importantly, debt liquidity.”<sup>3</sup>*

*“...NorVergence, Inc. may ultimately have legal and practical consequences for the entire banking industry.”<sup>4</sup>*

*“The Automobiles (of BMW) segment profit for 2008 was severely affected by the increased risk provision for residual value risks ... totaling euro 1.4 billion”.<sup>5</sup>*

Given the economic landscape of the 21st century, a company's business model is challenged constantly by competitors and events that could give rise to substantial risks. A company must strive to find creative ways to continuously reinvent itself in order to sustain growth and create value for stakeholders. Companies make money and increase stakeholder value by engaging in activities that have some risk, yet stakeholders also tend to appreciate and reward some level of stability in their expected returns. Failure to identify, assess, and manage the major risks facing the company may unexpectedly result in significant loss of stakeholder value. Thus, leadership must implement processes to effectively manage any substantial risks confronting the company.

While leaders of successful companies have always had some focus on managing risks, it typically has been from a reactive standpoint or a silo approach rather than a proactive, integrated, across-the organization perspective. To correct such a situation, enterprise risk management (ERM) has emerged in recent years and takes an integrated and holistic view of the risks facing the company.

ERM is generally known as the process of planning, organizing, leading, and controlling the activities of a company in order to minimize the effects of risk on the company's capital and earnings. ERM includes business risk management, holistic risk management and strategic risk management.

ERM is widely viewed not only as a compliance initiative, but a critical, strategic tool for managing financial institutions – including Equipment Leasing and Finance companies. Unfortunately, there has not been a significant focus on addressing ERM systematically within the equipment leasing and finance industry to date. Many members of the Equipment Leasing and Finance Association (ELFA) may not have been exposed to ERM, may not consider ERM in its totality and may not be aware of its benefits nor the risks of not having an effective ERM program and processes in place.

In this study, several techniques for identifying risks are outlined along with their relevance to the Equipment Leasing and Finance industry. Various risk frameworks including the core components of a generic ERM framework are illustrated as are practical ERM implementation considerations or tools of the trade including, infrastructure and risk literacy, and risk models. Any organization – large or small; independent, captive, or bank; U.S.-based or global – that has a stakeholder with expectations for business success can benefit from the tools and techniques provided in this study.

<sup>2</sup>Merrill, David, Chairman of the ELFA, ELFA Annual Convention Chairman's Address, October 24, 2011

<sup>3</sup>D'Antonio, David “State of Funding”, Monitor Annual Convention Issue, 2009, [Oct 4, 2011]

<sup>4</sup>NorVergence: An Equipment Leasing dispute of interest to the banking industry, Karlin, Steven, [online] available from <<http://allbusiness.com>>, [Oct 4, 2011]

<sup>5</sup>Boeriu, Horatiu, [online] available from <<http://www.bmwblog.com>>, [Oct 4, 2011]

## 1. ERM and the Equipment Leasing and Finance Industry

During the past few years, there has been a heightened focus on risk in the Equipment Leasing and Finance industry. The cause is threefold. First, given the Great Recession, overall credit quality, residual value estimations, capital availability and, in many cases, profits have degraded. Second, there are new and impending regulations such as the Dodd-Frank Wall Street Reform and Consumer Protection Act, Basel III, the Equal Credit Opportunity Act, the proposed FASB/IASB lease accounting changes, and potential new provisions from agencies such as the Consumer Financial Protection Agency, the Consumer Financial Protection Bureau, and the Financial Stability Oversight Council. Third, there is pressure from oversight bodies such as the SEC to ensure that all companies have a systemic risk management program in place.

Some large banks and their Equipment Leasing and Finance affiliates, and other finance companies, have begun to develop and implement programs to manage an enterprise's overall risk—the totality of the risk of the company. Other companies, with existing risk management capabilities already in place, are looking to enhance and upgrade their risk management approaches, methods and tools. This discipline is known as Enterprise Risk Management (ERM).

ERM is widely viewed not only as a compliance initiative, but a critical, strategic tool for managing financial (and non-financial) institutions – including Equipment Leasing and Finance companies. The focus of this Study is to provide the background of ERM, ERM leading practices and the practical implications of implementing and/or maintaining an ERM program for Equipment Leasing and Finance industry participants.

### A Brief History of ERM

The onset of risk management can be traced back to as early as the 17th century when the idea of fire insurance first came into practice. The practice of limiting loan amounts to any one individual and restricting loans to individuals with a high potential for default are probably the earliest risk measures that lenders adapted.

It was only in the 1960s that risk management formally began to take shape with principles developed and guidelines established. Risks were quantified, the evaluation of methods for dealing with risk were advanced and standardized, and an extensive terminology for managing risk was developed. Terms such as maximum possible loss (the largest loss that could occur) and maximum probable loss (the largest loss that is likely to occur) were introduced to help define risk exposure. Probability and statistical analysis were used to estimate the range of likely losses and the effect of adopting steps to mitigate these risks.

Robert Mehr and Bob Hedges, widely acclaimed as the fathers of risk management, enumerated the following steps for the risk management process:

- Identifying loss exposures
- Measuring loss exposures
- Evaluating the different methods for handling risk
  - Risk assumption
  - Risk transfer
  - Risk reduction
- Selecting a method
- Monitoring results



Beginning in the 1970s, volatility in foreign exchange rates, prices and interest rates caused financial risk to become an important concern for institutions. Shortly thereafter, tools for handling financial risk were developed. These new tools allowed financial risks to be managed in a similar fashion to the ways that hazard or so-called pure risks (such as plant and equipment damage, and natural catastrophe) had been managed for decades.

Although awareness to financial risk heightened by the early 1980s, companies did not apply what had become standard risk management tools and techniques to this area. The reason for this failure was because risk managers had built a wall around their specialty within which they operated. When a new risk area emerged, they did not expand to incorporate it into their domain. Instead, they left the management of it as an isolated activity. Using a real world example, consider mortgage operations within a national bank that began booking "liar loans" (limited or no borrower income verification) or "option ARMs" (Adjustable Rate Mortgages where the borrower selects the monthly payment amount). These types of products were a part of the downfall of many banks yet many, including risk management, were not aware of the products or the risks they were accepting. To incorporate these new risks would have required understanding and managing an ever-expanding scope of financial instruments, and moving beyond the type of risks commonly covered by insurance. This failure was costly to companies, and it delayed the spread and acceptance of risk management as a discipline. With the eventual emergence of **ERM**, traditional risk managers would be pushed into a wider arena of risk analysis – one that incorporates all forms of risk.

## Current State of ERM

ERM concepts have evolved rapidly over the course of the past ten years, both as a result of improvements in the methodologies and frameworks supporting ERM, and increased attention and recognition of the impact of risk management by regulatory authorities (see Appendix C: ERM Frameworks and Standards for additional details on regulatory authorities). Additionally, the recent recession has forced businesses to place even more focus on the management of risks relating to all aspects of their business. Such management is broadly defined as "**Enterprise Risk Management**".

ERM is clearly distinguished from risk management and financial risk management in the Risk and Insurance Management Society (the leading organization for risk management professionals) RIMS Executive Report, 2009<sup>6</sup>. The report discusses the three perspectives as follows:

- Risk management is described as a broad term for the business discipline that is concerned with the protection of the assets and profits of a company by either reducing the potential before it occurs, mitigating the impact of a loss if it occurs, and the execution of a swift recovery after a loss occurs
- Financial risk management is the term often used by non-financial institutions to describe the mitigation process for their financial exposure
- Enterprise Risk Management represents a revolutionary change in the risk management discipline that broadens the scope of risk management practices

ERM describes the set of activities that businesses undertake to manage all the diverse risks they face in a holistic, strategic and integrated method. These risks go beyond the traditional financial and credit risk analysis to encompass market, strategic, operational, hazard, and compliance risks spanning the organization. Many of these risks have significant impact on the profitability, effectiveness and reputation of the business enterprise.

There are several catalysts that have driven the need for enterprise risk management, all of which are relevant for

<sup>6</sup>The Strategic Implications of Enterprise Risk Management, White Paper, Ezeosa Dafikpaku, Mar 2011, [online] Available from <<http://www.ermssymposium.org/2011/pdf/Dafikpaku.pdf>>, [Sep 16, 2011]

<sup>7</sup>About ERM, Society of Actuaries, 2011, [online] available from <<http://www.ceranalyst.org/about-erm.asp>>, [Oct 4, 2011]

Equipment Leasing and Finance companies<sup>7</sup>. These include:

- Greater transparency
- Financial disclosures with more strict reporting and control requirements
- Security and technology issues
- Business continuity and disaster preparedness in a post-9/11 world
- Focus from rating agencies
- Regulatory compliance (see Appendix C: ERM Frameworks and Standards)
- Globalization in a continuously competitive environment

A sound ERM system has evolved to become more than a compliance requirement – it is an integral part of good management practices for all financial services companies. It is an essential element in achieving business goals and delivering benefits through the integration of business practices, processes and technology. Implementation of sound ERM practices enables companies to have an effective linkage between business strategy, risk management and corporate governance.

The holistic approach that characterizes the present trend of risk management aims at dealing with the many uncertainties facing organizations. The rationale behind this approach is that value is maximized when the decision-makers set strategy and objectives to strike the optimal balance between growth and return goals and their related risks, along with efficiently and effectively allocating resources in pursuit of the entity's objectives.

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<sup>7</sup>About ERM, Society of Actuaries, 2011, [online] available from <<http://www.ceranalyst.org/about-erm.asp>>, [Oct 4, 2011]

## 2. Overview of an ERM Program

This chapter provides an overview of an ERM program and covers the following topics:

- Definitions
- Objectives
- Conceptual Framework
- Benefits

### Definitions

A Towersperrin report (2000)<sup>8</sup> provides the following expansive definition of ERM:

*“ERM is a rigorous approach to assessing and addressing the risks from all sources that threaten the achievement of an organization’s strategic objectives. In addition, ERM identifies those risks that represent corresponding opportunities to exploit for competitive advantage.”*

Using this definition, ERM for Equipment Leasing and Finance companies typically involves the management of most, if not all, of the areas of risks defined below:

**Credit Risk:** The risk of loss of principal or loss of a financial reward stemming from a borrower’s failure to repay a loan / lease or otherwise meet a contractual obligation.

**Residual Value Risk:** The risk of a decline in the value of a lessor’s leased asset below the expected book value.

**Market Risk:** The risk that the value of a portfolio, either an investment or a trading portfolio, will decrease due to the change in the value of market risk factors.

**Liquidity Risk:** The risk that a given asset (or portfolio of assets) cannot be borrowed against, or traded quickly enough in the market to prevent loss or make a required profit.

**Operational Risk:** As per Basel II, operational risk can be defined as the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events.

**Country Risk:** The risk involved in investing or setting up business in different countries due to ever-changing business environment. Fluctuations in exchange rates, devaluation or regulatory changes specific to a particular country, or political and social factors such as mass riots, civil war and other such events are examples of country risk or more narrowly, political risk.

**Contagion Risk:** The risk that a financial crisis may spread from one institution to another or the failure of a financial institution threatens the stability of other institutions.

**Reputational Risk:** The risk related to the trustworthiness of a business or the risk that a company will lose potential business because its character or quality has been called into question

**Hazard Risk:** The risk of accidental losses due to unforeseen natural catastrophes, such as hurricane damage to plant and equipment.

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<sup>8</sup>Enterprise Risk Management: An analytic approach, Monograph, Tillinghast-Towers Perrin, 2000, [online] Available from <[http://www.towersperrin.com/tillinghast/publications/reports/Enterprise\\_Risk\\_Management\\_An\\_Analytic\\_Approach/erm2000.pdf](http://www.towersperrin.com/tillinghast/publications/reports/Enterprise_Risk_Management_An_Analytic_Approach/erm2000.pdf)> [Sep16,2011], P4-7

## Objectives

The main objective of an ERM program is to ensure that a company manages its risk return trade-off. In addition to this overarching objective, an ERM program should also:

- Identify varying types of risks and formulate a risk management framework which consists of identification, evaluation, assessment, management, monitoring, and reporting across the enterprise
- Balance risk-reward tradeoffs in order to address risk not just as threat, but as an opportunity
- Inculcate risk management into business planning and the decision making process, thereby providing an effectual integration between planning, reporting, auditing and managing information systems
- Ensure that risk management is the responsibility of all members of staff, where each and every process owner performs the role of the risk taker / manager
- Have an enterprise risk management reporting system as it plays a key role in the constant monitoring process of all risks
- Address the needs of adequate internal control and move toward an optimal risk management process

## Conceptual Framework

To achieve these objectives, ERM needs to be based on a framework. The conceptual framework for ERM consists of four interdependent elements.

### Assessing Risk

Risk assessment focuses on risk as a threat as well as an opportunity. In the case of risk-as-threat, assessment includes identification, prioritization and classification of risk factors for subsequent “defensive” responses. In the case of risk-as-opportunity, it includes profiling risk-based opportunities for subsequent “offensive” treatments.

### Shaping Risk

This “defensive track” includes risk quantification / modeling, mitigation and financing the capability to manage the risk.

### Exploiting Risk

This “offensive track” includes analysis, development and execution of plans to exploit certain risks for competitive advantage.

### Keeping Ahead

This includes continual monitoring of risk and developing course corrections.

## Benefits

ERM provides a framework for identifying both threats and opportunities across the enterprise, assessing their probability and possible impact, developing a response strategy and monitoring the outcomes. Recently, legislators, regulators, debt-rating agencies and investor concerns have created a stronger urgency for companies to consider ERM as an essential, company-wide approach to business controls that embeds a culture of active risk management from the operational levels to the Board of Directors.

As a practical example, during the recent credit crisis many Equipment Leasing and Finance companies suffered as a result of limited access to capital. A company’s credit rating and overall risk management capabilities be-

came vital to their borrowing power. Standard and Poors (S&P), a rating agency, developed a new rating approach, whereby companies that fail to implement ERM in a formal, strategic way are in danger of suffering ratings downgrades; whereas, companies that fully adopt ERM can improve their credit ratings.

Over the years, implementation of sound ERM practices has enabled companies to have the necessary ties between risk management and corporate governance. Furthermore, by applying ERM in conjunction with other operational elements in the current business environment, companies can accomplish many of their governance-related tasks.

ERM enables companies to pragmatically deal with uncertainty and associated risk and opportunity thus enhancing their brand value and profitability. ERM helps in identifying and selecting among alternative risk responses – risk avoidance, reduction, transfer, and acceptance. It helps to ensure effective reporting and compliance with laws and regulations, and avoid damage to the entity's reputation and associated consequences. By using ERM to proactively address risks and opportunities, companies can create value for their shareholders, employees and client base by analyzing strategic, operational and financial risks, as well as compliance with applicable laws and regulations. A company with a holistic, 360-degree view of risk can better uncover and manage its business challenges, including operations and procedures, management styles and strategies, industry issues, emerging risks and more.

ERM helps an entity get to where it wants to go and avoid pitfalls and surprises along the way. In constructing a program, a company has to understand the challenges, various risk domains and risk areas relevant to the business and the different kinds of ERM activities, which need to be carried out to successfully implement an ERM program.

### **To summarize,**

- Better risk identification is one of the key benefits of implementing ERM. Risk mapping, uniform risk language and appropriate tools and processes lead to improved risk identification enabling the enterprise to have a clear list of risks to be addressed
- Use of systematic, quantitative and predictive analytics leads to better decisions which in turn lead to improved business performance over time. Usage of ERM methodologies also increases the effectiveness in identifying emerging issues and notifying the appropriate executives at the earliest possible time, enabling optimal responses
- ERM equips the company with information about risks, risk responses, risk measures, risk processes, risk incidents, best practices and status of improvement plans, and enables improved performance as well as knowledge sharing across the enterprise. Integrating risk management with key performance indicator (KPI) reporting helps management and executives monitor and address significant risks
- A downfall in the number of loss events and the ability to demonstrate the same against the industry average comes with an efficient ERM implementation and is clear evidence of superior performance
- Consistent revenues, cash flows and earnings over time take a company towards higher price-to-earnings (P/E) multiples against their peers. A systematic and proactive risk evaluation process due to improved measures and preventive internal controls can be attributed to an effective ERM program
- Once a company is recognized as one that is proactive to risk management, it encourages rating agencies, regulators and financing institutions to differentiate it from those that do not have an ERM program. The declaration by S&P rating agency that they would consider ERM as a factor in their ratings stands a testimony to this benefit. Such reputation also reduces the cost of capital, which in turn increases the profitability and growth prospects of the company

### 3. Tools of the Trade

The implementation of ERM depends on a number of variables and no specific recipe is available to assure successful implementation. In this section, a number of practical considerations are discussed that may provide helpful insights in the implementation process and are valuable tools of the trade. These include:

- Organization and Risk Literacy
- Risk Measures
- Models
- Risk Reports
- Information Infrastructure
- Regulatory Considerations
- Software

#### Organization and Risk Literacy

Like any enterprise-wide program, ERM requires a strong organization and management support. Key aspects discussed here are:

- Position and Structure of the Risk Organization
- Risk Profiling
- Risk Appetite Statement
- Policies
- Credit Portfolio Management: An Example
- Internal Audit of Credit approvals

#### Position and Structure of the Risk Organization

With the existence of emerging financial as well as non-financial risks, it has become more and more apparent that having a strong ERM program is a must have for equipment leasing and finance companies. It is important for outside directors and senior executives to be critical of the risk management system and analyze where it is lacking, working aggressively toward closing the gap.

Based on the paper "Office of Risk Management"<sup>9</sup>, an effective risk management culture requires active involvement of all participants in the ERM program from top to bottom, from senior management to the line level of staff. While everyone is responsible for the effective and efficient running of the ERM program, the ultimate ownership of risk oversight rests with the CEO and Board of Directors. Figure 1 Participants of an ERM Program represents the participants of a best practice ERM program and the reporting flow.

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<sup>9</sup>The Strategic Implications of Enterprise Risk Management: A Framework, ERM Symposium, March 2011 [Online] available from <<http://www.ermssymposium.org/2011/index.php>>[Sep 19, 2011],P 14-17

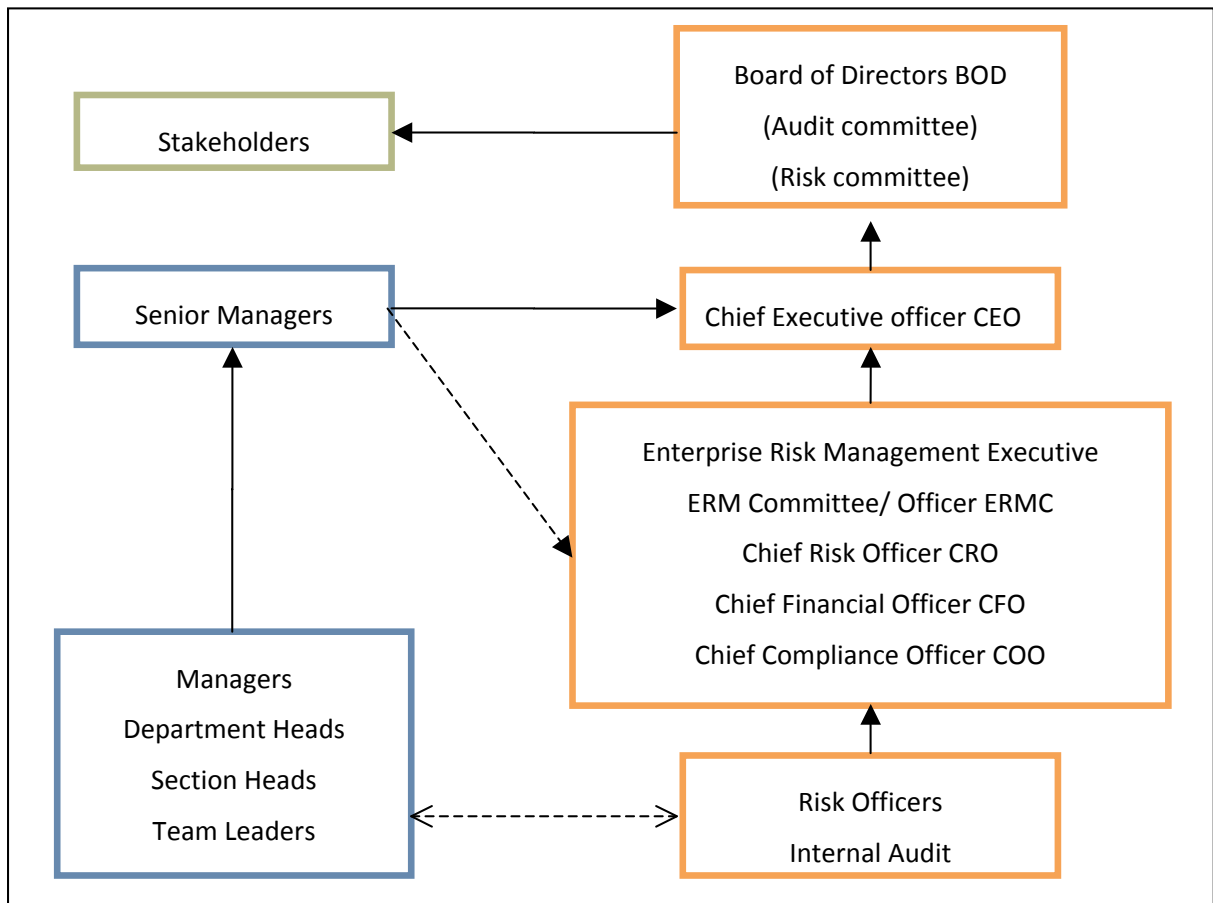


Figure 1 Participants of an ERM Program

Starting from the top, the Board of Directors is responsible for the oversight of ERM as well as reporting to stakeholders on the risk management strategy and risk issues. The CEO provides leadership and direction to senior managers while seeing that all ERM components are in place. Key result areas (KRA's) related to risk should be part of the respective functional/committee head. Risk Officers from various teams are responsible for setting up the ERM processes by getting closer to the areas where risk exists and reporting to the centralized ERM Office. Internal auditors further play an important role in monitoring the tasks related to many aspects of the program, such as approval and underwriting processes.

A survey paper, Bridging the ERM Gap<sup>10</sup>, highlights the allocation of risk related rights and responsibilities. At the top, the board the directors' specific responsibilities are focused on risk review and assessment. At the bottom, it completes the chain at the lowest operational level of the organization. The role of outside contractors and partners in risk detection and mitigation must be made explicit as well. The results of the survey paper are shown below in Figure 2 Allocation of Risk Related Responsibilities.

<sup>10</sup>Bridging the ERM Gap, White paper, By John Wheeler, Andy Mesches, and John Balkcom, The RMA Journal, April 2011, P 48- 50

Allocation of Risk -related Rights and Responsibilities					
Organization Level	Detect	Mitigate	Report	Aggregate	Assess
Board or Committee					P
CEO					P
CFO				S	S
Division CEO			S	P	S
Division Controller		S	P	S	
Plant Manager		P	S		
Supervisor	S	P			
Contractors	P	S	S		
Legend:					
P	Primary Responsibility				
S	Shared Responsibility				

Figure 2 Allocation of Risk Related Responsibilities

## Cultural and Personnel Impacts<sup>11</sup>

Human resource standards are an integral part of ERM maintenance. It is essential for a company to appropriately assess the effectiveness of the processes for setting performance expectations, monitoring, and performance evaluations and reward systems.

Whether companies add full time personnel to successfully develop and roll out an ERM program or if they use existing personnel who devote their efforts to the initiative on a part time or full time basis is subjective. An enterprise risk assessment identifying the priority risks and a gap analysis around the capabilities for managing the priority risks provide insights into this.

Following are suggestions for achieving ownership and commitment from personnel:

**Encourage involvement and commitment:** Identification of key resources and acquisition of their support for the ERM implementation shall prove effective in the transition of workforce along a continuum from awareness to involvement and ultimately to ownership.

**Establish accountability for results:** Setting clear, smart and achievable goals as per the skill sets of the personnel will improve accountability and demand responsible actions from every manager.

**Enable change in a “human” context:** Too often, the change focus is limited to technical matters such as policies and limits, processes, measures, reports, systems and data. All of which define the infrastructure for a risk response. While important, these are not the only objects of change. A common language, effective communications, risk awareness and effective knowledge sharing are also important.

**Align objectives:** An Equipment Leasing and Finance company's reward systems and incentive plans should be aligned with the change process through appropriate performance metrics. The transition of risk culture should walk hand in hand with the transition in the human resource culture and the Equipment Leasing and Finance company's culture. This kind of integration alone will drive ERM implementation forward with beneficial outcomes.

<sup>11</sup>Guide to Enterprise Risk Management: FAQs, Protiviti Inc, Jan 2006, [online] available from <[http://www.ucop.edu/riskmgmt/erm/documents/protiviti\\_faiguide.pdf](http://www.ucop.edu/riskmgmt/erm/documents/protiviti_faiguide.pdf)>, [Sep 18, 2011], P 33-40, P 51-61, P72-106



## Risk Profiling

Rank ordering risks and their relative importance to the Equipment Leasing and Finance company is a key first step to prioritize the effort and make it manageable. All too often companies take the 'big-bang' approach where risk management tries to improve all areas of risk at once leading to large amounts of resources and effort wasted without offering tangible results. Instead, a 'surgical' approach focused on relevant risks and their associated components is advised. According to the risk management survey<sup>12</sup> results, Equipment Leasing and Finance companies have focused largely on credit and operational risks, with residual value, reputation and market risks as secondary areas of focus.

A recommended approach to defining a profile involves:

1. Understanding the total risk of the company and how it applies to the balance sheet. This step is qualitative and involves creation of a "Sigma Map"<sup>13</sup> of the company. A sigma map allows the company to rank order its risk based priorities and focus on them.
2. Identifying zero-tolerance risk categories. Reputation risk is one example that should be explicitly covered in this step.
3. Defining the appropriate risk measure. Economic capital, regulatory capital and Value at Risk (VaR) are some suitable candidates. Other measures such as charge-off volatility, non-performing assets volatility, and residual value write-down experience, or even outstanding amounts in criticized risk grades can be considered. Selection of the appropriate measure depends on the company's risk management maturity, data availability and risk literacy.
4. Analyzing historical events. Historical events faced by the company and its industry peers provide unique insights into how risks translate into losses and eventually erode value. Learning from these events should act as inputs toward defining a robust risk appetite statement.
5. Comparing the total risk to the capital at hand. Capital needs to be invested and this exercise should be supplemented by a capital allocation exercise. Hedging strategies are also defined when possible in this step.

The outcome of this risk profiling exercise is a document, which indicates:

- The total risk of the company and how it relates to the returns profile
- The amount of each type of risk and how it relates to the balance sheet
- Areas where the company has indicated zero-tolerance risks
- The allocation of capital across lines of business or asset classes
- Hedging strategies, if any

## Risk Appetite Statement

Once risks are identified, mapped and prioritized, a risk appetite must be defined. At a high level, risk appetite states the type and amount of risk the Equipment Leasing and Finance company is willing to bear.

- Typically, mid-size Equipment Leasing and Finance companies tend to rely more on top-of-the-house risk appetite

<sup>12</sup>To get a better understanding of risk management a survey, from here referenced as the risk management survey, was conducted during the period of August – September 2011 as part of the annual Business Performance Technology Index published by Capgemini and the Equipment Leasing and Finance Association (ELFA). The detailed results of this survey can be found in Appendix B: Risk Management Survey of this study.

<sup>13</sup>Sigma Map is Capgemini's trademark approach for building an ERM program.

statements while larger companies supplement this effort with a bottom-up approach at a line of business level. For instance, a large bank with an Equipment Leasing and Finance subsidiary might both deliver risk management requirements to the subsidiary, as well as take guidance from the uniqueness of its asset financing activities and risks associated with them. Each company needs to strike its own balance in defining its risk appetite

- Linking risk appetite to the Equipment Leasing and Finance company's overall strategy and to compensation is critical for this effort to be successful. Unfortunately, complexities in risk measurement and the dynamic nature of risk make this difficult to implement, especially when times are "good". Adding to the challenge, 44% of the risk management survey companies responded that data collection and collation for risk management is done on a manual basis, making these links difficult to achieve
- Memory of past events in the Equipment Leasing and Finance industry is very short. As time progresses and economies recover, the surviving companies tend to discount the importance of risk management. It was widely noted that by early 2010, interest rate spreads were declining and credit approval ratios were increasing in the Equipment Leasing and Finance market – only a few short months after companies were emerging from dealing with the delinquency peaks of 2009<sup>14</sup>. Hence keeping the risk appetite statement and the associated limit structure relevant is important. Periodic validation of limits via measurement of number of breaches indicates the need to either tighten processes or loosen limits

Risk appetite defines how much risk a company is prepared to take in pursuit of its business objectives – and which types of risks it is not prepared to take. Due to volatility companies cannot achieve targets all the time. Hence they need to define tolerances around risk targets and its associated limits.

The value of an Equipment Leasing and Finance company is determined by its risk return tradeoff. The pursuit of returns can lead to disaster if risks are not considered in tandem. The industry is all too familiar with this story (usually about the "home run" deal with the outsize residual that will "make the year") and where it leads.

The process used to define risk appetites and tolerances is iterative. At a high level the process is as follows:

1. Define the return target. This is generally defined by shareholders and is visible to the Equipment Leasing and Finance company from its stock price performance. For non-public companies and public company subsidiaries without a clear view of stock price (as with many bank subsidiaries and captive finance organizations), Equipment Leasing and Finance industry return benchmarks should be used and are available through the ELFA Survey of Equipment Finance Activity.
2. Define current risk and perceived future risk to achieve the desired returns. Also, compare risk to capital at hand and define how capital will be allocated across asset classes and lines of business.
3. Define tolerances for risk and the subsequent limits for each line of business/asset class.

Though deceptively simple, defining a risk appetite along with setting target returns, tolerances and limit structures is quite difficult. To begin with, quantification of risk with a great deal of precision is exceedingly difficult, if not impossible. Numerous measures and approaches exist but each has its own quirks and limitations. Next, a company needs to have an acceptable method to quantify risk and then supplement it with qualitative aspects. Finally, the company needs to address the mechanism of how the risk-return trade-off occurs.

Other considerations, which factor into this process, are:

- The diverse group of stakeholders with specific requirements and metrics e.g. Shareholders, bondholders, regulators, Board members, management, employees

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<sup>14</sup>Delinquency Trend Report, Jan 2011, [Online] available from <[http://www.elfaonline.org/ind/research/Paynet/charts/MDI\\_0111.pdf](http://www.elfaonline.org/ind/research/Paynet/charts/MDI_0111.pdf)>, [Oct 4, 2011]

- The risk management maturity of the company. This includes risk literacy, models, measures, resources and data
- Organizational considerations such as organization structure, vision and strategy, and organization ownership and structure

The risk-return tradeoff and the dynamics of the relation of the risk profile and appetite to the returns is captured in Figure 3 Risk Return Tradeoff, Risk Appetite and Risk Tolerances below. The diagram correlates ERM maturity with risks, company strategy and goals, in turn, optimizing company returns for the desired level of risk. Desired target return is accompanied by its inherent risk, which can be described by its risk profile.

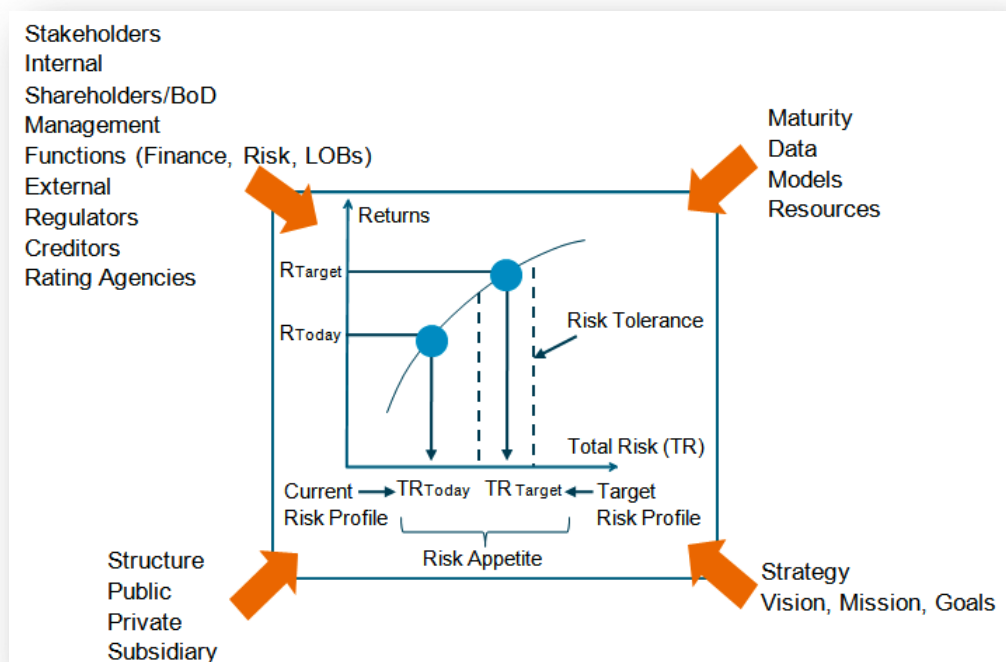


Figure 3 Risk Return Tradeoff, Risk Appetite and Risk Tolerances

The following section reviews the detailed process of defining target returns and defining risk tolerances and limits.

### Defining Target Returns

The target return definition process begins with selecting one or more metrics to assess the performance and then defining the desired target for them. In our experience, metrics for returns of Equipment Leasing and Finance companies are largely focused on:

- Earnings per share
- Return on equity or assets
- Capitalization amount

- Stock price returns
- Price / earnings ratio

The objective of defining target returns is to select one or more metrics and define the desired target for them. Analysis, which helps in this decision, is:

- Historical analysis of the company's metrics and correlating them to its loss experience. A strong correlation indicates that the metric is appropriate for the company. Volatility of losses in addition to the loss levels themselves should be considered
- Peer analysis, which defines realistic targets and validates (or invalidates) the company's experience. This can also indicate areas where the company can improve. Again, good data is available from the ELFA to support this analysis
- "Franchise" value or the appetite of the company to expand into additional markets or channels, or non-equipment leasing and finance related activities, which can enhance value
- Expectations from regulators and the parent company. These generally translate into targets for capital adequacy or economic capital targets

The outcome of this exercise is a document, which indicates the returns profile that is desired. It should also include the company's regulatory (to the extent relevant) and economic capital target.

## Defining Risk Tolerance and Risk Limits

Managing risk against the desired profile is done via tolerances and limit structures. Risk tolerance level quantifies the acceptable volatility of risk around the target risk profile. The tolerances are closely related to the metrics chosen. They are a function of the volatility of the metric and are calculated using historical data and industry studies. Limits on the other hands are more of an upper bound for individual managers. Industry best practices include the following types of limits for Equipment Leasing and Finance companies:

- Customer concentration limits
- Industry concentration limits
- Geographic concentration limits
- Asset class and type limits
- Financial product type limits
- Channel partner limits

Generally, these limits are defined at an exposure level and they can be supplemented by economic capital. Economic capital limits can be seen as "risk adjusted" limits. Since economic capital is a forward-looking measure, these limits act as the proverbial canary in a coal mine.

The outcome of this exercise is a document, which indicates:

- Tolerances around the risk metrics at a granular level
- Limit structures for the lines of business and individuals

A typical limit structure is shown in Figure 4 Typical Credit Limit Structure.

## Credit Limits

	GAAP Metrics				Economic Metrics			Regulatory Metrics	
	CO Benchmark (%)	CO Range (%)	NPA Benchmark (%)	NPA Range (%)	EL of Lee (%)	FC of Lee (%)	% EC in Criticized Benchmark	% Criticized Benchmark	% Classif Benchmark
Forex	0.00%	0.00%-0.00%	0.01%	0.01%-0.02%	0.01%	0.13%	0.00%	0.00%	0.00%
ABL	0.25%	0.25%-0.35%	1.00%	1.00%-2.00%	0.60%	4.02%	56.50%	20.00%	5.00%
Transportation	0.75%	0.75%-1.05%	1.50%	1.50%-2.00%	0.60%	4.00%	30.00%	5.00%	2.00%
CCM	0.80%	0.80%-1.10%	1.00%	1.00%-1.35%	0.50%	3.50%	20.00%	5.00%	2.50%
Fixed_Inc	0.05%	0.05%-0.25%	0.10%	0.10%-0.30%	0.01%	0.50%	0.00%	0.00%	0.00%
Global_C_Bk	0.75%	0.75%-1.50%	0.75%	0.75%-1.75%	0.30%	2.00%	5.00%	0.00%	0.00%
International	0.10%	0.10%-0.60%	0.15%	0.15%-0.65%	0.10%	1.50%	20.00%	1.50%	0.50%
Investment_Bk (REITS)	0.10%	0.10%-0.20%	NA	0.00%	0.20%	1.50%	0.00%	0.00%	0.00%
<b>Capital Market</b>	0.50%	0.50%-0.70%	0.85%	0.85%-1.05%	0.45%	3.00%	25.00%	5.00%	2.00%
Business_Bk	0.30%	0.30%-0.45%	0.50%	0.50%-0.75%	0.50%	3.00%	20.00%	4.00%	2.00%
Commercial_Bk	0.25%	0.25%-0.40%	0.50%	0.50%-0.70%	0.30%	2.00%	20.00%	4.00%	2.00%
Community_Bk	0.30%	0.30%-0.45%	0.50%	0.50%-0.75%	0.50%	3.00%	20.00%	4.00%	2.00%
Dealer_Fin_Ser	0.25%	0.25%-0.25%	0.25%	0.25%-0.25%	0.25%	2.00%	10.00%	2.00%	0.50%
RE_Ser	0.20%	0.20%-0.35%	0.40%	0.40%-0.60%	0.30%	2.50%	15.00%	2.50%	1.00%
Retail	0.30%	0.30%-0.35%	0.75%	0.50%-0.60%	0.25%	2.50%	5.00%	2.00%	1.00%
Small_Business	1.00%	1.00%-1.15%	2.50%	2.50%-2.65%	0.45%	4.20%	15.00%	0.00%	0.00%
<b>General Bank</b>	0.30%	0.30%-0.40%	0.75%	0.75%-0.90%	0.35%	2.80%	25.00%	3.50%	1.25%
<b>GBG Wholesal-Less REFS</b>	0.30%	0.30%-0.43%	0.60%	0.56%-0.75%	0.36%	2.45%	0.00%	0.00%	0.00%
<b>Wealth</b>	0.15%	0.15%-0.20%	0.35%	0.35%-0.50%	0.15%	1.35%	5.00%	1.00%	0.00%
<b>Commercial - SubTotal</b>	0.40%	0.40%-0.55%	0.80%	0.8%-1.00%	0.40%	2.90%	25.00%	4.00%	1.50%
Mortgages	0.65%	0.65%-0.95%	0.30%	0.30%-0.65%	0.65%	2.25%	NA	NA	NA
Educational	0.20%	0.20%-0.24%	0.33%	0.33%-0.40%	0.30%	2.00%	NA	NA	NA
Auto	2.00%	2.00%-2.50%	0.35%	0.35%-0.40%	3.00%	9.00%	NA	NA	NA
Home Eq. Loans	3.00%	3.00%-4.50%	0.04%	0.04%-0.05%	3.00%	9.00%	NA	NA	NA
Home Eq. Lines	0.15%	0.15%-0.20%	0.20%	0.20%-0.25%	0.20%	2.00%	NA	NA	NA
<b>Consumer-Total</b>	0.45%	0.45%-0.50%	0.55%	0.55%-0.65%	0.40%	2.20%	NA	NA	NA
<b>Total</b>	0.40%	0.40%-0.50%	0.70%	0.70-0.85%	0.40%	2.50%	NA	NA	NA

Figure 4 Typical Credit Limit Structure

The creation of policies becomes the process for operationalizing the risk appetite and limit structure and the monitoring of results or performance against the limits. This needs to be done on a formal basis.

## Policies

To maintain an effective ERM system, the risk infrastructure needs to include management's policies and procedures, methods to communicate increasing risks and the effectiveness of risk management across the entire company. The risk infrastructure should improve the company's preparedness to address risk by including:

- A risk management policy that defines risk, risk tolerances, corporate governance and oversight, responsibilities, and accountabilities
- Capabilities to support risk identification, risk quantification and evaluation, mitigating and controlling risks, monitoring, and reporting
- ERM throughout the company rather than just attaching it to the traditional risk management structure
- A risk-based approach to audit planning and assessing impact and preparedness through internal audit
- Support capabilities including information tools, risk-event databases, risk analysis and modeling, training of management, and management change capabilities

## Credit Portfolio Management: An example

The following describes the involvement of the credit risk committee and portfolio management to highlight the importance of credit approvals in maintaining the credit quality of a portfolio based on a Capgemini client case study. These interrelations are depicted in Figure 5 Information and Actions in Credit Decisioning below.

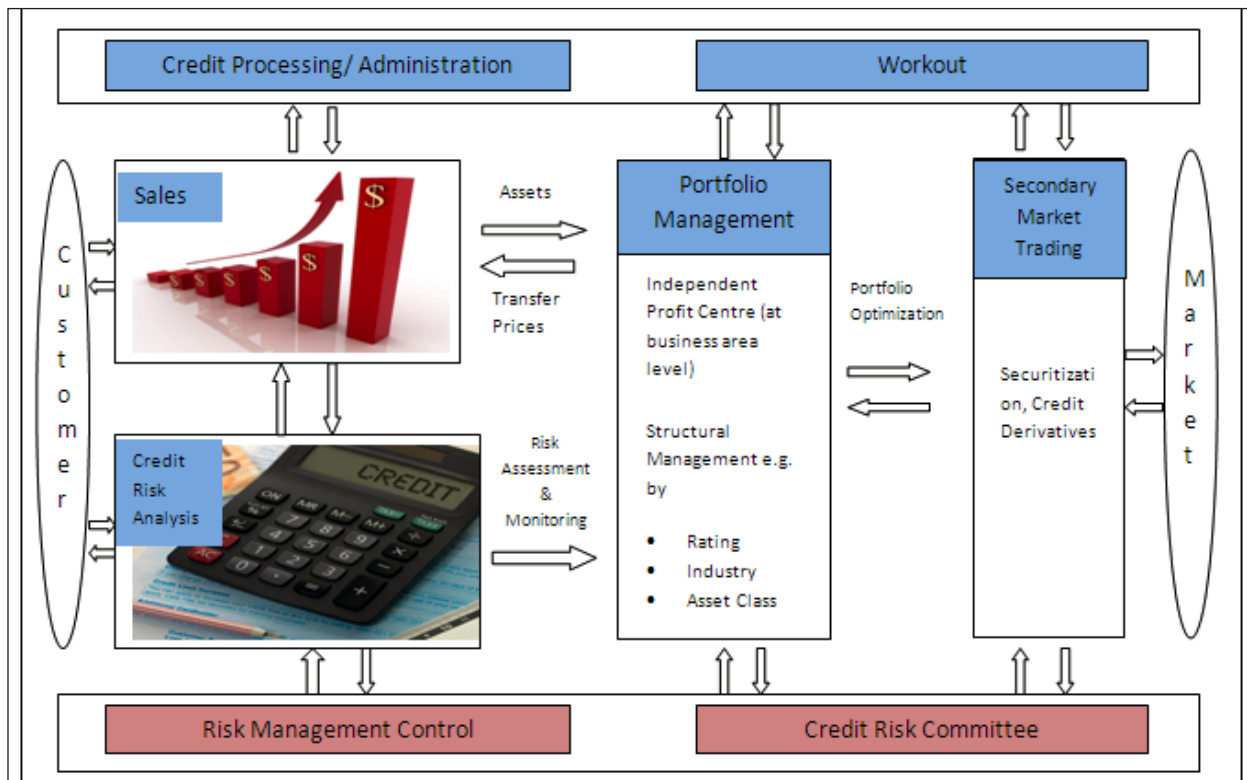


Figure 5 Information and Actions in Credit Decisioning

Exception management is a central element of this company's lending and leasing policy. Exceptions in policy are the early warning indicators for forthcoming stress in the portfolio health. Exception violations are noted and mitigated where possible. Exceptions are grouped into two broad categories: policy and underwriting.

1. **Policy Exceptions:** Credit policy defines the rules and minimum criteria for lending / leasing. Exceptions are violations of these rules and minimum requirements. In most of the scenarios, the policy exceptions are taken in order to meet sales targets. Exceptions can be taken with respect to documentation policy or with respect to procedural rules that deal with transaction handling, such as obtaining appropriate authorization signatures, evidence of recorded documents before funds are disbursed and so on. Exceptions can be cured by having a proper audit system before disbursement and by obtaining the documents, signatures, etc. so that the disbursement guidelines are met.
2. **Underwriting Exceptions:** Underwriting exceptions are taken in order to achieve the revenue targets and the targets linked to approval percentage. Underwriting exceptions can be in the form of taking a deviation with respect to financial ratios, Loan to Value ratio (LTV), collateral type and value, or with respect to any other risk mitigation factors.

## Internal Audit of Credit approvals<sup>15</sup>

An internal audit of credit approvals results in an effective mechanism of maker–checker for the credit underwriting decisions. Internal audit of credit approvals leads to lower operational risk, lower delinquency and losses, and hence improved portfolio performance. Benefits of internal audit of credit approvals include:

- Credit grades assigned by financial institutions are more accurate
- Credit underwriting quality is improved
- Deviations from policy guidelines are lessened
- Financing not accompanied by adequate credit or collateral documentation occurs less frequently
- Violations of laws and statutes are mitigated
- Non-compliance with covenants is caught sooner
- The allowance for loan and lease losses (ALLL) is more accurate

Internal audit reports should be distributed to all senior officers involved in the lending function, internal audit, the audit committee, and the Board of Directors. If any material weaknesses or deficiencies are found in the reports, a written response outlining a plan of action needs to be addressed to the chief executive officer and the Board of Directors or a committee of the Board of Directors.

## Risk Measures

Equipment Leasing and Finance companies are subjected to a variety of risks that can manifest themselves in the course of the business that they operate in. The following are considered to be the principal forms of risk and the ones of greatest focus based on the risk management survey responses:

- Credit Risk
- Equipment and Residual Risk
- Market Risk (including interest rate and foreign currency)
- Liquidity Risk
- Operational Risk (including process failures, data and systems, human resource risks and risks arising from external events)
- Contagion Risk
- Reputational Risk

## Credit Risk

Following the recent financial crisis, many companies realized that the conventional methods of managing their credit risk may not have always been sufficient. Thus, companies are now looking at more adaptive and innovative approaches to managing risk. There is a greater focus on understanding the interdependencies between credit risk and all the other types of risk especially as companies look for an integrated enterprise-wide risk management system.

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<sup>15</sup>Bank Life Cycle- Credit Risk, Article, Partnership for Progress is a Federal Reserve System program, [online] available from <<http://www.fed-partnership.gov/bank-life-cycle/manage-transition/credit-risk.cfm>>, [Oct 12, 2011]



Traditionally, credit ratings provide an estimate of the creditworthiness of an entity, and are generally a reflection on an entity's ability to repay debt. In addition to the standard ratings provided by credit-rating agencies, companies also make use of internal ratings that they calculate themselves using a unique internal calculation methodology. Additionally, a company could have internal ratings for various entities and complex products, which may not have an external rating.

Equipment Leasing and Finance companies are exposed to credit risk with respect to both loans and leases. Customers often consist of individuals in addition to small and medium sized enterprises with varying degrees of risk. Credit risk is managed through hierarchical delegated approval authority limits, depending on the experience level of the approver and the exposure to risk.

In a period of slim margins (as the industry finds itself currently), credit risk and credit losses play a magnified role in company profitability. Equipment Leasing and Finance industry average return on assets has ranged from 0.6% to 1.9% over the past 5 years. At the same time, losses have ranged from a four-year high of 1.6% to 0.6% of assets. As both the high for losses and the low for return on assets occurred in 2009, it is evident that there is a high correlation between the two metrics.

Over the past decade, risk management has increasingly focused on using advanced quantitative techniques to improve profitability. The objective of these innovations is the improvement in trade-off between risk and returns. Some of the common terminology used today is probability of default (PD), Loss Given Default (LGD), Exposure at Default (EAD), Economic Capital (EC) and Risk Adjusted Return on Capital (RAROC).

In addition to measuring and controlling credit risk, companies also try mitigating their credit risk. Some of the popular ways of achieving this include:

- **Risk-based Pricing:** This is a tool which companies use to calculate the interest rates on loans / leases given the probability of default, or the risk on the loan / lease
- **Covenants:** Companies incorporate strict covenants in their deal contracts. Such covenants generally require the debtor/lessee to meet certain conditions such as maintaining a required capital level, or prohibit them from carrying out certain actions which may have a detrimental impact on their repayment ability
- **Credit Insurance:** Credit insurance covers any losses that may result from unpaid receivables. It also covers bankruptcies as well as late payments
- **Credit Derivatives:** These derivative instruments provide protection against the credit risk of the underlying asset of the derivative
- **Collateral:** The counterparty (lessor) bearing the credit risk in a deal asks the opposite counterparty (lessee) for collateral, which the party at risk holds till the deal, is completed. Although it isn't common to take additional collateral on a lease transaction, the asset on lease is considered the collateral for these purposes



## Equipment and Residual Risk<sup>16, 17, 18</sup>

The main source of uncertainty embedded in the asset is the risk that the future market value of the underlying asset at lease termination will vary from the projected value (i.e. residual value) booked by the lessor at lease origination. This price fluctuation is commonly known as residual value risk.

Residual value risk arises because of the complexities in estimating the value of the leased good at the end of the lease period. The level of customer need for the equipment, new product introductions, shifts in market preferences, the state of the economy, technology changes and dozens of other factors have the ability to impact residual value realizations.

As illustrated by Figure 6 Fair Market Valuations vs. Residual Value, the fair market value curve implies a gain or loss on sale depending on the level of residual value realized, versus the value booked at contract inception.

With regard to managing residual value risk, companies have universally taken a historical approach to value setting. Common methodologies include both valuing individual assets on a historical basis (typically integrated with current value market data) and valuing residuals on a portfolio basis – i.e. the company looks at historical annual gains of 10% and views that as a reflection of effectively managing the risk.

Similar to credit risk management, leading practices for residual risk are evolving to incorporate more quantitative techniques and forward looking analysis. Stress Testing and developing an analysis of Residual Value at Risk are relatively new to residual value analysis, but can lead to significant improvements in forecasting accuracy. Likewise, companies are now looking to allocate capital more precisely against residual value assets and deploying methods such as RAROC.

Consistent residual realization gains (as stated in the example methodology above) are lauded by many companies, but given the same cash flow, what Equipment Leasing and Finance company would rather not realize those earnings each year of the lease, instead of waiting until the residual realization event in year three or five? Improved residual value forecasting may enable that capability.

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<sup>16</sup>Equipment Leasing and lending: A Guide for Microfinance, Special Report, Glenn D. Westley, Inter-American Development Bank, June 2003 [Online] available from <[http://www.microfinancegateway.org/gm/document-1.9.26285/3772\\_file\\_03772.pdf](http://www.microfinancegateway.org/gm/document-1.9.26285/3772_file_03772.pdf)>, [Oct 10, 2011], P 10-11

<sup>17</sup>Residual value risk and insurance: Evidence from the consumer automobile industry , Mar 2009, [online] available from <<http://www.efmaefm.org/0EFMAMEETINGS/EFMA%20ANNUAL%20MEETINGS/2009-milan/64.pdf>>, [Oct 10, 2011]

<sup>18</sup>Hedging residual value risk using Derivatives, Working Paper, Economix, December 2008 [Online] available from <[http://economix.fr/pdf/dt/2009/WP\\_EcoX\\_2009-31.pdf](http://economix.fr/pdf/dt/2009/WP_EcoX_2009-31.pdf)>, [Sep 26, 2011], P 9-10

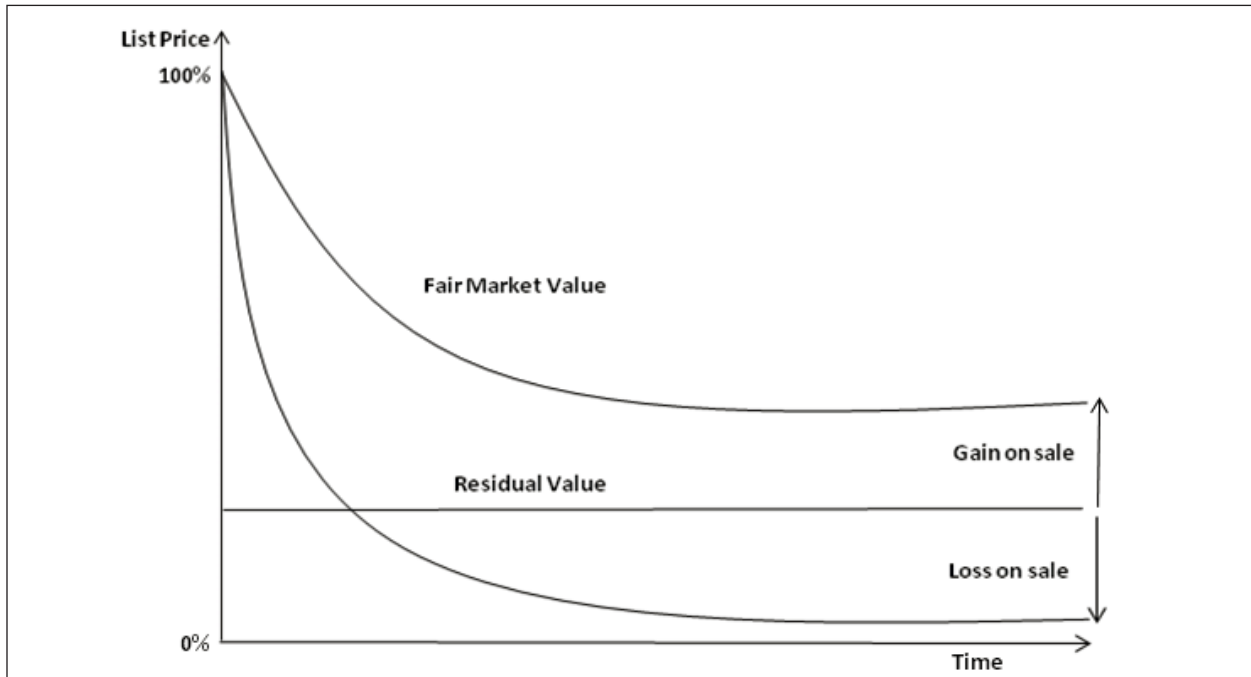


Figure 6 Fair Market Valuations vs. Residual Value

## Residual Value Risk Mitigation

Mitigating residual value risk is generally accomplished by:

- Disciplined residual valuation at inception of lease, incorporating both historical and prospective views of values
- Regular asset valuation reviews
- Diversification of leased assets
- Residual Value Insurance where the insurer promises to indemnify the policyholder, in exchange for a fixed initial premium, if the value of the insured asset falls below the residual value at lease termination
- Factoring residual values into capital allocation and pricing models

In general a combination of these activities needs to be developed and incorporated in a company's risk management activities.

## Market Risk

Funding at Equipment Leasing and Finance companies often consists of direct bank facilities, securitizations, structured borrowings, and increasingly, retail deposits. Many Equipment Leasing and Finance companies obtain funds at both fixed and floating rates. As such, the interest rate margin is subject to volatility due to changes in market rates.

A typical market risk value calculation is performed by:

1. Generating multiple scenarios (or values) of risk factors such as interest rates and foreign exchange rates
2. Computing the value of the portfolio (and the underlying assets) under each scenario
3. Deriving the profit/loss distribution using the profit or loss under each scenario

The simulation or scenario generation is based on various methodologies such as:

- Historical simulation
- Variance / Covariance method
- Monte Carlo and other simulation methods

The valuation of the assets is done via pricing functions for that asset class, e.g., the Black Scholes Option Pricing model for valuation of stock options.

In practice, vendors like SAS provide software solutions which enable these calculations.

## Liquidity Risk

Liquidity risk management is designed to ensure the availability of adequate cash resources and funding capacity to meet the company's obligations and business needs. Overall liquidity management strategy is intended to ensure ample liquidity to meet expected and contingent funding needs under both normal and stress environments. Over the past few years, liquidity risk has been especially acute for Equipment Leasing and Finance companies, particularly those without high investment grade credentials.

Companies typically utilize a series of measurement tools to assess and monitor the level and adequacy of their liquidity position, conditions and trends. The primary tool is a cash forecast designed to identify material mismatches in cash flows. Mismatches can occur across multiple dimensions, including fixed versus floating rates, duration differences and differences in the amortization of the obligations/assets.

Also included among other liquidity measurement tools is an early warning system that monitors key macro-environmental and company specific metrics that serve as signals of potential impending liquidity stress events. Stress scenarios are applied to measure the resiliency of the liquidity position and to identify stress points requiring remedial action. Furthermore, approved liquidity limits and guidelines are monitored to facilitate the active management of funding and the liquidity position.

## Operational Risk<sup>19</sup>

BASEL II has placed a clear emphasis on measuring Operational Risk. While this is important and greatly aids objective reporting and analysis, an effective ERM program will also dedicate considerable time and effort to making subjective evaluations of operational risks.

An example of a framework for developing operational risk management tools and techniques includes the following:

- Develop an inventory of all operational risk related activities – processes, information management, human resource related, and systems
- Document all the key business processes, creating key risk indicators (KRI) and analyzing potential points of failure
- Pre-identify the ramifications of operational failure, setting up the internal control, internal audit and external audit system

Most institutions today have adopted the Basel II standards to measure and monitor Operational Risk, which are generally considered to incorporate leading practices.

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<sup>19</sup>Framework for Internal Control Systems in Banking Organizations, Guidelines, Basel, September 1998 [Online] available from <<http://www.bis.org/publ/bcbs40.pdf>>, [Sep 22, 2011], P 8-25

## Contagion Risk<sup>20, 21</sup>

Contagion risk results from the interconnectedness in the financial system and external sovereign factors. Hence, among all the risks that a financial institution has, contagion risk is perhaps the least tractable of all – with poor data, limited usable metrics, and strong “fat tail” characteristics. Contagion risk can arise from interconnectedness among domestic banks and foreign financial counterparties. This interconnectedness arises due to the following products or transactions:

- Loans, leases and deposits
- Securities issued by counterparties
- Credit risk components in repos and derivatives (net positions only)
- Foreign exchange transactions

Equipment Leasing and Finance companies must have a methodology in place in order to be prepared for managing contagion risk. Some of the key steps would include:

- Creating a matrix of bilateral risk exposures for all counterparties
- Assessing the impact of the failure of a financial institution on regulatory capital of all remaining financial institutions
- Assessing historical trends to analyze the Capital Adequacy Ratio (CAR) at which a financial institution fails
- If the initial insolvency causes other institutions to fail, second round effects are estimated. Subsequent rounds are considered until no more failures take place
- In order to assess the risk of contagion effect, all financial institutions are allowed to fail one by one. Therefore, it is important to obtain a contagion chain for each financial institution for the considered period

Anticipating and avoiding contagion risk is best addressed by financial sector supervisors and regulators. They should maintain a consistent, regular, overarching view of the financial sectors and of the local/national/international economies with the objective of providing early warnings, not only to the financial institutions, but also to the appropriate agencies that are charged with economic management.

## Reputational Risk<sup>22</sup>

Reputation risk is the risk that a company will lose potential business because its character or quality is being called in question. Reputational related losses may be reflected in:

- Reduced operating revenues as clients and counterparties shift to competitors
- Increased compliance and other costs required to deal with the reputational problem (including opportunity costs)

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<sup>20</sup>ADB: Financial Analysis and Management of Projects, Guidelines, July 2005 [Online] available from <<http://www.adb.org/documents/guidelines/financial/chap06.pdf>>, [Oct 03, 2011] P 17-19

<sup>21</sup>The identification of systematically important financial institutions, markets and instruments, Banco de Mexico, May 2010, [online] available from <<http://www.imf.org/external/np/seminars/eng/2010/mcm/pdf/Dogherty.pdf>>, [Oct 03, 2011]

<sup>22</sup>Reputation Risk and Conflicts of Interest in Banking and Finance: The Evidence So Far, White paper, Ingo Walter, December 2006 [Online] available from <<http://archive.nyu.edu/bitstream/2451/26089/2/6-27.pdf>>, [Oct 03, 2011] P 3-9

- Increased company specific risk perceived by the market

Reputational risk is often linked to operational risk, although there are important distinctions between the two. According to Basel II<sup>23</sup>,

Operational risks are associated with people (internal fraud; clients, products and business practices, employment practices and workplace safety), internal processes and systems, and external events (external fraud, damage or loss of assets, and force majeure). Operational risk is specifically not considered to include strategic and business risk, credit risk, market risk or systemic risk, or reputational risk.

Reputational risk comprises the risk of loss in the value of a firm's business franchise that extends beyond event-related accounting losses and is reflected in a decline in its share performance metrics. Reputation-related losses reflect reduced expected revenues and/or higher financing and contracting costs. Reputational risk is usually the consequence of management processes rather than discrete events, and therefore requires risk control approaches that differ materially from operational risk.

Dealing with reputational risk and controlling exploitation of conflicts of interest can be an expensive business, with compliance systems that are costly to maintain, and various types of walls between business units and functions that impose significant opportunity costs due to inefficient use of information within a company.

Equipment Leasing and Finance companies have historically been impacted reputationally as a group, a blend of both Contagion and Reputational Risk. The issues around NorVergence<sup>24</sup> are case in point.

## Models

In the aftermath of the latest financial crisis, many have called for increased transparency of the risk and valuation models used by financial institutions. With the new Basel II accord, understanding and measuring economic capital has also become a compliance obligation for banks. As such, Equipment Leasing and Finance companies also have to give consideration to economic capital planning and are using risk models to provide the transparency that is demanded.

In this section we highlight some of the leading topics and tools in the area of risk models that address Economic Capital compliance and transparency. They are:

1. Economic Capital Framework
2. Risk Adjusted Return on Capital (RAROC)
3. Model Validation
4. Stress / Scenario Testing

## Economic Capital Framework

Economic Capital (EC) is covered by BASEL II and includes all the quantifiable risks a financial institution is facing. In addition to complying with the regulations the two main advantages of managing risk using EC are:

1. Focus on portfolio concentrations to ensure mitigation against systemic risk

<sup>23</sup>International Convergence of Capital Measurement and Capital Standard, Guidelines, Basel, June 2004 [Online] available from <<http://www.bis.org/publ/bcbs107.pdf>> [Sep 26,2011] P 137-140

<sup>24</sup>NorVergence: An Equipment Leasing dispute of interest to the banking industry, Karlin, Steven, [online] available from <<http://allbusiness.com>>, [Oct 4, 2011]

## 2. Risk based pricing to ensure optimum risk return trade-off

To successfully compete and win in this market with increasingly thinning spreads, traditional Equipment Leasing and Finance managers must understand this changing environment. In the following paragraphs the focus is on credit VaR (Value at Risk). Interestingly, in most literature it is also called economic capital or credit EC. As such, for the next few paragraphs the term Economic Capital also will refer to Credit EC.

The measure of credit risk in a portfolio is a key input into the calculation of economic capital. It is distinct from the amount of capital or equity held by the company. In contrast to the equity held by the company, EC measures the amount of capital, which a company needs to hold given the risk in its portfolio. Economic capital is based on a probabilistic assessment of potential future losses and is therefore a more forward-looking measure of capital adequacy than traditional accounting measures. Conceptually, economic capital can be expressed as protection against unexpected future losses at a selected confidence level. This has been represented in Figure 7 Economic Capital, Expected Loss and the Loss Distribution.

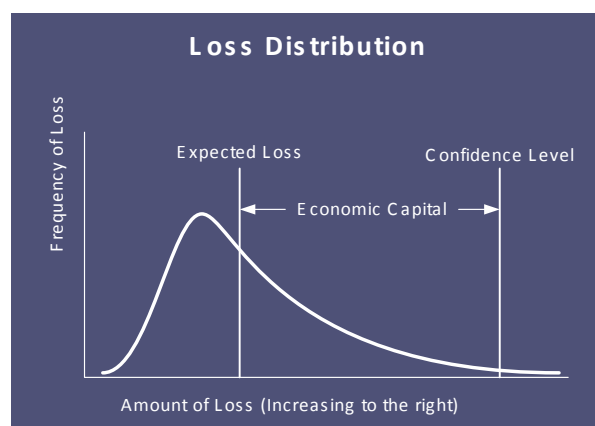


Figure 7 Economic Capital, Expected Loss and the Loss Distribution

The loss distribution shown above is calculated using analytical methods like Basel II formulas, historical portfolio performance, or by simulation.

### Expected Loss

As with any statistical distribution, the loss distribution can be characterized by a mean or average. For this loss distribution, it is called the expected loss. Statistically, the expected loss is the sum of probability weighted loss outcomes. Expected loss represents a cost of doing business and is generally expected to be absorbed by operating income. In the case of typical Equipment Leasing and Finance company practices, the expected loss is normally priced into the payment spread.

### Unexpected Loss

Unexpected loss is the potential for actual loss to exceed the expected loss and is a measure of the uncertainty inherent in the loss estimate. It is this possibility for unexpected losses to occur that necessitates the holding of capital protection.

## Economic Capital

Economic capital (EC) is typically defined as the difference between some given percentile of a loss distribution and the expected loss. It is sometimes referred to as "unexpected loss at the confidence level." The confidence level is established by management and can be viewed as the risk of insolvency during a defined time period at which management has chosen to operate. The higher the confidence level selected, the lower the probability of insolvency. For example, if management establishes a 99.97 percent confidence level, that means they are accepting a 3 in 10,000 probability of the institution becoming insolvent during the next twelve months. Many Equipment Leasing and Finance companies using economic capital models have selected a confidence level between 99.96 and 99.98 percent, equivalent to the insolvency rate expected for an AA or Aa credit rating.

The direct implications of an economic capital measurement system are:

- A comprehensive pricing mechanism which accommodates expected loss
- A capital adequacy measure in line with the risk of the company's portfolio
- A risk adjusted return measure to account for volatility of the portfolio

At a fundamental level, the basic building blocks for the EC framework are:

1. A probabilistic measurement of default called Probability of Default or PDs. These are supported by a scorecard mechanism which links the risk factors of borrowers or lessees to their probability of defaulting
2. A Loss Given Default (LGD) measure, which estimates the potential losses to the company if a customer, defaults. This is typically the recovery or resale value of the financed asset less the cost of recovery
3. EAD (Exposure at Default) measures the exposure faced by a company at the time of default by the obligor

In addition to these measures, other factors, which influence economic capital, are the terms of the leases/loans and the correlation between portfolio classes.

The above mechanism is depicted in Figure 8 Mechanics of Risk Quantification:

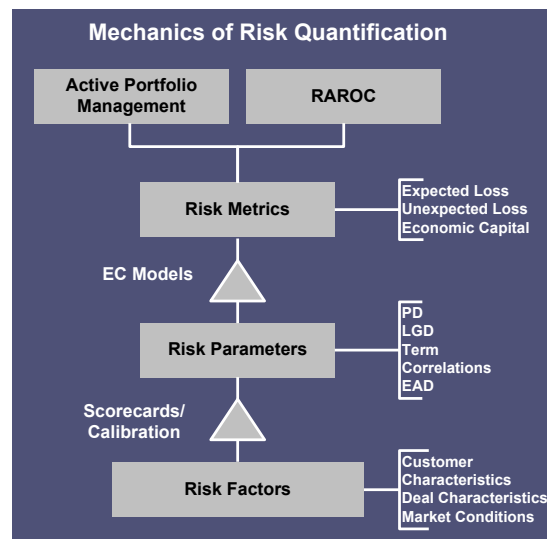


Figure 8 Mechanics of Risk Quantification

Of these parameters, all but correlation can be controlled at a deal level. Managing risk due to correlations is possible at a portfolio level only. PDs are driven by risk factors, which are measured in scorecards. LGD, EAD and term are driven by transaction specific and financed asset/collateral characteristics. PD and LGD parameter estimates are drawn from the company's historical performance or from a mapping of internal portfolio risk assessments to external information sources for PD and LGD parameters. This requires that companies have in place processes that enable them to periodically assess credit risk exposures. Having a strong scorecard process to evaluate customer's credit worthiness bridges this gap.

### **Risk Adjusted Return on Capital (RAROC)**

RAROC is a form of return on equity measure, which factors in the risk of doing business by using economic capital as a measure to calculate returns against. It also explicitly uses expected loss as an expense.

Since economic capital (EC) has a direct link to the amount of equity a company holds, maximizing returns over EC is equivalent to maximizing shareholder value. As RAROC effectively combines risk and returns, it allows managers to measure the trade-off between the two. Usage of RAROC allows the company to compare portfolio performances over a common risk adjusted scale thus allowing for effective management of capital.

### **Comparison of RAROC to ROE**

In the ROE measurement, companies generally start with income and deduct the expenses and provisions. Provisions are a backward looking measure of losses. In contrast, the RAROC uses Expected Losses (EL). The EL being a forward-looking probabilistic measure, gives a better estimate of potential future losses. In the example below, the EL is greater than the historically calculated provisions. Therefore, the Pre-tax earnings are also less in the sample RAROC analysis than the traditional ROE analysis. The second difference is due to the explicit inclusion of additional equity required to support the transaction. In the traditional ROE analysis, the denominator of the ratio is the equity and it is assumed that the existing equity would absorb the additional risk. In the RAROC analysis, the incremental equity required to support the risk is explicitly measured and added to the equity required. Thus the denominator is higher than in the case of a ROE analysis.

Figure 9 ROE vs. RAROC shows the comparison between a traditional Return on Equity calculation and RAROC.



Return Analysis			
Income	8.50%	Income	8.50%
Interest Expenses	3.00%	Interest Expenses	3.00%
Non Interest Expense	2.50%	Non Interest Expense	2.50%
<b>Provisions</b>	<b>0.50%</b>	<b>Expected Loss</b>	<b>0.75%</b>
PreTax Earnings	<b>2.50%</b>	PreTax Earnings	<b>2.25%</b>
Tax Rate	30.00%	Tax Rate	30.00%
Taxes	0.75%	Taxes	0.68%
Net Income	1.75%	Net Income	1.58%
Equity / Assets Ratio	8.00%	Equity / Assets Ratio	8.00%
		<b>Incremental Equity Addition</b>	0.36%
<b>ROE</b>	<b>21.88%</b>	<b>RAROC</b>	<b>18.84%</b>
<b>Hurdle Rate</b>	<b>20.00%</b>	<b>Hurdle Rate</b>	<b>20.00%</b>

Figure 9 ROE vs. RAROC

As is seen in this example, the transaction that has a ROE of 21.88% would be acceptable if the hurdle rate is 20%. The same transaction on a risk-adjusted basis is 18.84% and would not be acceptable for the same hurdle rate.

The RAROC analysis thus allows managers to explicitly manage the trade-off between risks and returns at a portfolio as well as a deal level. Maximizing RAROC is equivalent to maximizing shareholder value and thus is in sync with traditional ROE or Return on Asset measures. The difference in traditional pricing and RAROC is more pronounced when credit quality deteriorates as is seen in Figure 10 Traditional vs. RAROC Pricing below.

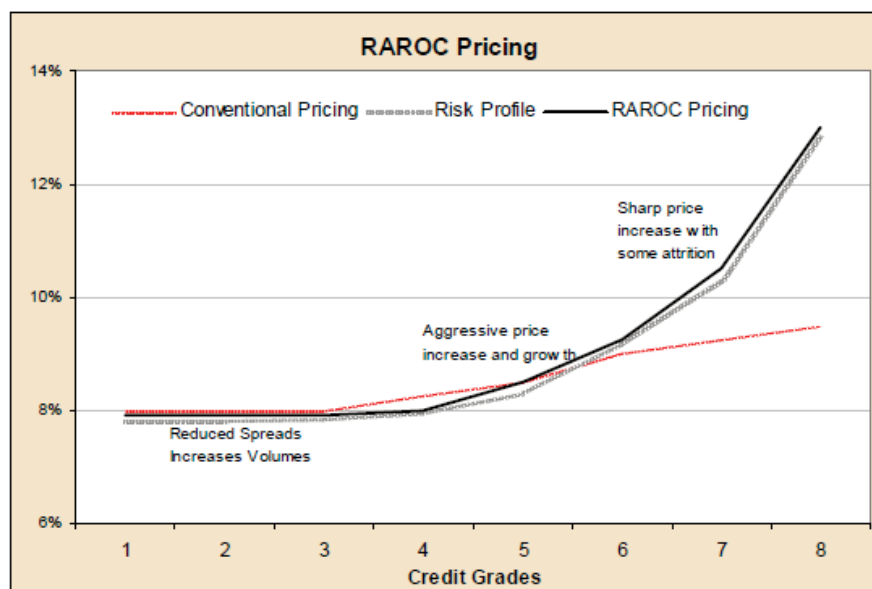


Figure 10 Traditional vs. RAROC Pricing

## Residual Values and Pricing

Residual values in equipment lease transactions add an additional layer of complexity and opportunity for price differentiation. Regulations such as the Basel II guidelines and the market for equipment securitizations provide clear direction on how to view and price the residual component of a lease structure. Residuals are viewed as riskier than payment obligations over the term of the lease and as such, carry a higher capital requirement. In addition, the residual risk is associated largely with the equipment and to a much lesser degree, the underlying credit worthiness of the customer.

Breaking the transaction into the residual and fixed term components and using a risk adjusted pricing model that prices them separately provides for the greatest flexibility in competitive pricing situations and also the most precision with regard to transaction level pricing for risk.

## Implementation Aspects of RAROC

While risk adjusted pricing is prevalent in the mid and large ticket equipment finance markets, the question remains, is it the right approach for the small ticket market (transactions from \$25,000 to \$250,000)? Historically this market has been dominated by a very simple pricing strategy – a one size fits all rate card. This rate card was historically, literally a physical sheet of rates, often faxed to sales representatives once a month. These rate cards typically contained two or three different programs (for instance a conditional sale, a fixed purchase option and a fair market value lease) covering a range of terms (perhaps 36, 48 and 60 month options).

This approach was simple, but it did not enable reacting quickly to changes in market rates. Additionally, the rates trended toward the better credit side of the market, but were applied for all credit profile customers. While much of the small ticket market still operates this way, a combination of factors is increasing the feasibility of risk adjusted pricing being a viable alternative for small ticket leasing.

- The recent decline in liquidity is shifting the small ticket market to a “sellers market” with fewer competitors chasing transactions and potentially allowing for greater flexibility in pricing
- Change in credit scoring practices, combined with improvements in scoring technologies are allowing for faster credit score generation
- Front end origination systems have made substantial improvements in creating flexible pricing models that replicate “rate cards”, but are table driven and allow for increased pricing complexity that does not create an additional burden on customers and partners

## Model Validation

With the ever growing size and complexity of financial markets, in most financial institutions including Equipment Leasing and Finance companies, risk management can no longer be practiced on the basis of qualitative analysis only. Today, usage of quantitative techniques and models in Equipment Leasing and Finance companies span areas such as pricing, exposure measurement, risk quantification, valuation, forecasting losses and allocation to name a few. This proliferation in model usage in critical functional areas has led to companies being exposed to a new class of risk: Model Risk.

In general, there are three sources of model risk:

1. **Model Inputs:** Model inputs include the assumptions and data on which the model is developed . Sources of risk include: incorrect development data, lack of data coverage during model development, assumptions not consistent with the problem at hand, assumptions which are restrictive, etc.
2. **Processing Component:** This relates to the theoretical model and the computer code which transforms the inputs into a mathematical answer. The chief source of risk here is the appropriateness of the theoretical model. In many instances, the choice of the model to be used is not clear or is constrained by business factors. In such cases, there is a high probability that the model is inappropriate to solve the business problem at hand. In other instances, complex codes which are written are also exposed to error leading to model risk.
3. **Reporting Component:** This relates to the process in which the mathematical outputs are translated into business decisions. The main issue here is the misinterpretation of information by the user. This occurs due to the fact that in general, the model users are not as quantitatively focused as the model developers and thus there is a possibility that they can apply the model to situations which violate the model assumptions or misinterpret the model results. Either circumstance leads to increase in model risk.

The main solution to managing model risk is model validation. Though there are various statistical tools available for model validation, there is a clear need to address the non quantitative aspects of model validation. For further reading on this topic, Capgemini's white paper "Managing Model Risk: Challenges and Solutions", describes best practices for managing model risk from a management perspective , and the challenges companies face while implementing model validation and also implementation aspects of a model validation program.

## Stress Testing / Scenario Analysis

Stress Testing encompasses tools and techniques that are used to identify vulnerability of portfolios in extreme events. Stress Testing is used in conjunction with portfolio risk measurement tools like VaR and EC.

Stress Testing is done to overcome some of the drawbacks of risk models that are overly dependent on historical data (such as the previously discussed approaches to Residual Value Risk), and to test the specific risk parameters, which define the model. Based on the limited inputs, these models can sometimes cause an underestimation of risk. Stress testing typically allows testing based on a combination of different scenarios including shocks and conceived scenarios, and is often applied to company-wide portfolios to capture the complete risk along different lines of business. Stress Testing is now a regulatory requirement in certain countries since it helps ensure that companies maintain adequate capital levels.

Stress Testing is designed to provide management with information that is actionable which they can use to mitigate or avoid potential risks. In addition to advocating a Top-Down and Bottom-Up approach, Capgemini also believes in a multi-model approach. This is shown in Figure 11 Approaches to Stress Testing.

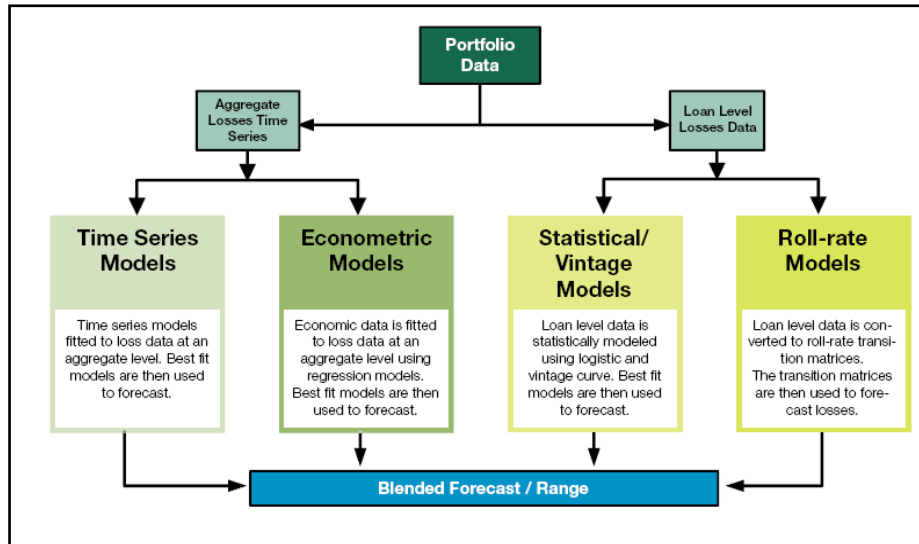


Figure 11 Approaches to Stress Testing

## Risk Reports

Based on industry experience and observations with regard to risk reporting, the following are generally true:

- Companies generally produce a large quantity of portfolio data
- Improved reporting can help monitor and manage their portfolios effectively
- A sound reporting strategy helps transform data into actionable items

There are at least four fundamental weaknesses, which limit the effectiveness of traditional reporting:

1. Focus on outcomes
2. Failure to adapt
3. Point-in-time visibility
4. Numbers without accompanying analysis

A sound reporting framework is based on five components, each focusing on a unique actionable area. They are as follows:

1. Composition component which identifies concentrations
2. Risk component which profiles the portfolio and identifies potential problem areas

3. Profitability component which optimizes the risk return trade-off
4. Risk (Credit) quality component which helps manage losses
5. Assessment component which monitors performance

A typical reporting dashboard based on this budget concept has the following features:

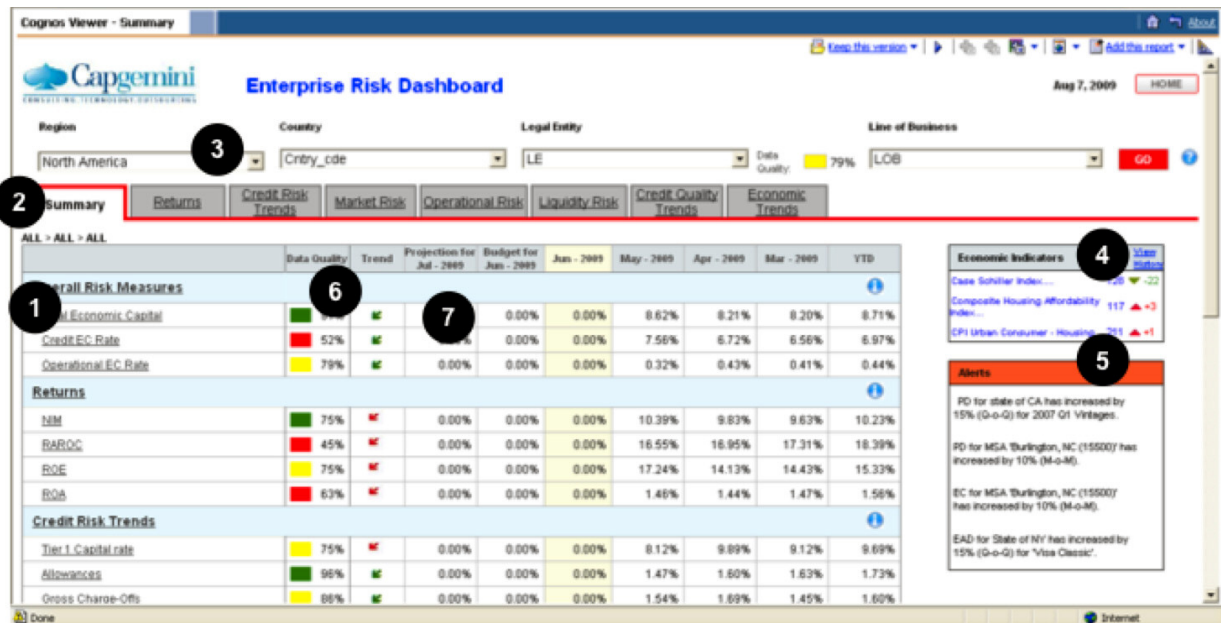


Figure 12 Example of an ERM Dashboard

1. Uses best in class KPI's to manage risk
2. Provides a holistic view of all risk types faced by the institution
3. Allows drill downs to identify hot spots
4. Integrates reference and market data benchmark performance
5. Custom and automated alerts to zone into problem areas
6. Data quality integrated with decision making
7. Forward looking measures shown side by side with historical performance

## Information Infrastructure

A robust ERM infrastructure is essential to enable integration of strategy, people and processes. Fragmented or incomplete data, lack of normalized data models across the risk functions, need for manual handling of data, and data integrity issues are potential hindrances in establishing a successful ERM infrastructure. The risk technology infrastructure should not only set the existing processes right but, also assist in a consistent re-integration in an environment of continuously changing business and compliance policies. Companies should continuously be on the lookout for opportunities to automate processes and implement early warning systems. The enterprise risk infrastructure should aim at eliminating all the instabilities.

Figure 13 Risk Infrastructure Architecture below shows the reference risk management architecture consisting of a map of data procurement, data handling and transformation to generate required outputs.

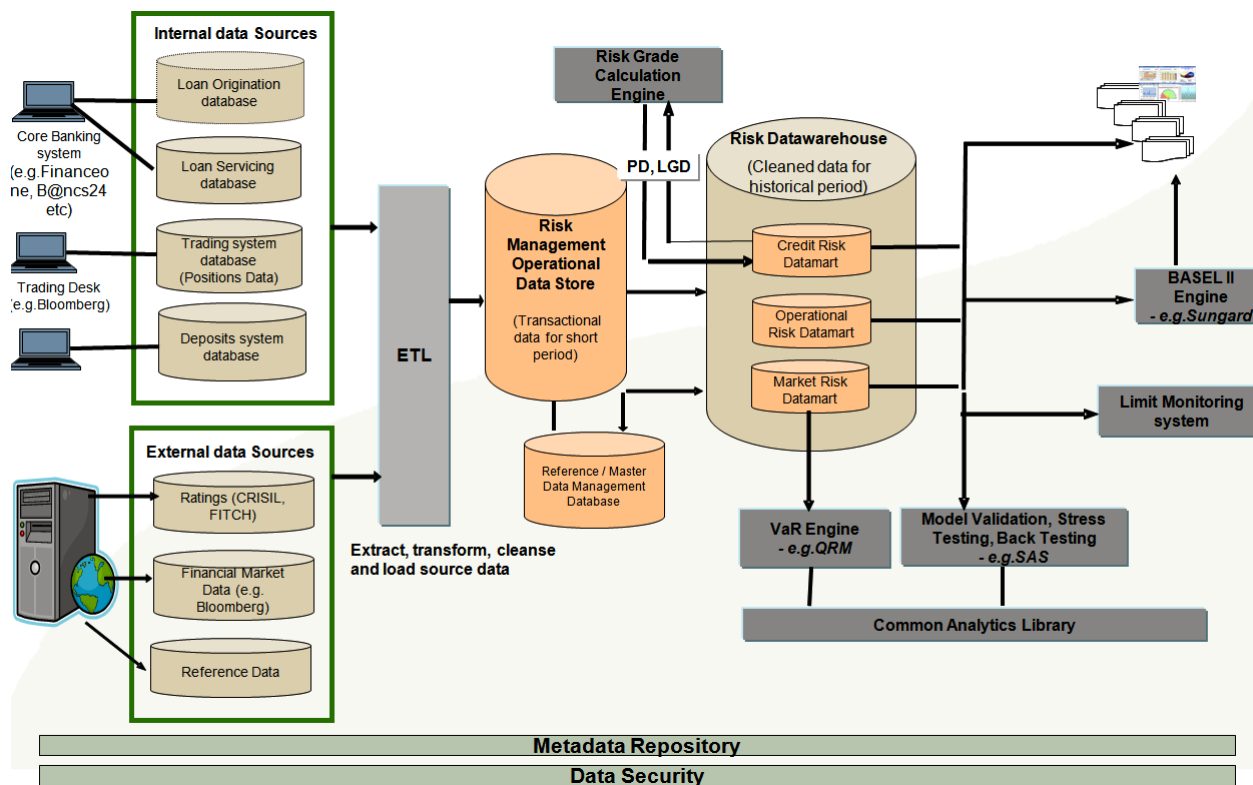


Figure 13 Risk Infrastructure Architecture

In addition to having a robust data infrastructure and architecture, a strong data quality and governance program is also essential. This requires people, processes and technologies to implement process improvements, methodologies and tools in an integrated manner as shown in Figure 14 Components of Data Governance and Data Quality Management

People	Process	Technologies
<ul style="list-style-type: none"> <li>• Executive Sponsorship</li> <li>• Business Ownership</li> <li>• Data Governance Council</li> <li>• Data Stewardship Teams</li> </ul>	<ul style="list-style-type: none"> <li>• Integration of People, Process &amp; Technologies</li> <li>• Arbitration, Escalation</li> <li>• Change Management</li> </ul>	<ul style="list-style-type: none"> <li>• Business Dictionary</li> <li>• Metadata</li> <li>• Governance Workflow</li> <li>• Process, Taxonomy &amp; Process Modeling</li> </ul>
Process Improvements	Methodologies	Tools
<ul style="list-style-type: none"> <li>• Authority &amp; Mandate</li> <li>• Ownership &amp; Accountability</li> <li>• Sustainability</li> <li>• Impact Analysis</li> <li>• SDLC Integration</li> </ul>	<ul style="list-style-type: none"> <li>• M3 Framework</li> <li>• Data Quality Framework</li> <li>• DMO Framework</li> <li>• Data Governance &amp; Stewardship Framework</li> </ul>	<ul style="list-style-type: none"> <li>• Meta Data Repository</li> <li>• Data Profiling Tools</li> <li>• DQ Dashboards</li> <li>• Workflows</li> </ul>

Figure 14 Components of Data Governance and Data Quality Management

## Regulatory Considerations

As detailed in Appendix C: ERM Frameworks and Standards, a company's risk management framework needs to meet regulatory requirements. This would include a special risk management steering committee, Basel II adherence, and IRB (Internal Ratings Based) approach and capital calculation methods. A leading practice to assess a company's compliance with regulatory requirements is to use a compliance scan. For example, a comprehensive assessment of the impact of the new Basel Accord on a company will not only show where compliance is already achieved, but also provide a list of "to do's" in terms of actions and projects. The scope of a typical Basel II scan is shown in Figure 15 Scope of a Basel II Scan.

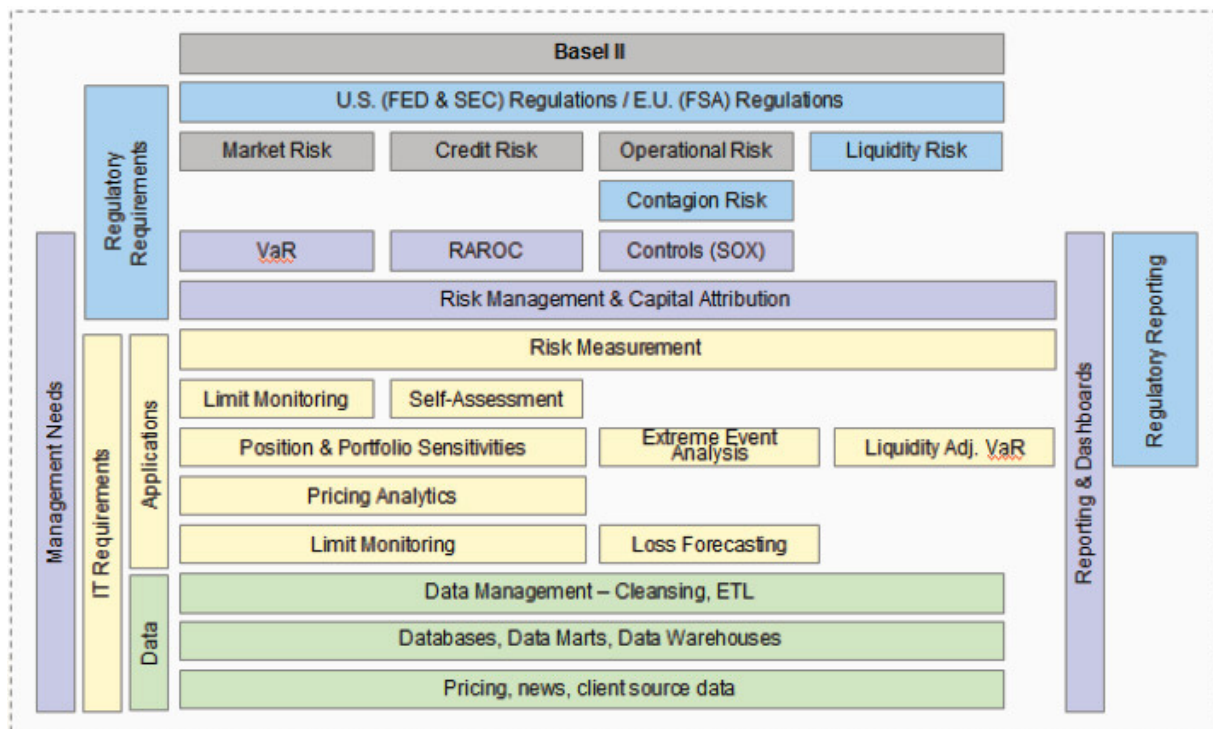


Figure 15 Scope of a Basel II Scan

## Software

Software is available to assist an organization with the entire ERM process. Gartner Inc. recently reviewed Enterprise Governance, Risk and Compliance (EGRC) platforms on four aspects: audit management, compliance management, risk management, and policy management. Gartner noted that the EGRC platform market has expanded from a tactical focus on regulatory compliance to a strategic focus on enterprise risk management. Many vendors are looking toward the next market phase, which includes adding or integrating with business performance management and scorecarding capabilities.<sup>25</sup>

Some organizations choose to either develop their own ERM processes tailored to their needs or hire consultants to help with the process. Technology products not only help with the process, but they also assist with data gathering, modeling, and reporting. Leading products are available with tools and frameworks specifically targeted at building ERM capabilities.

<sup>25</sup>Magic Quadrant for Enterprise Governance, Risk and Compliance Platforms, French Caldwell, Tom Scholtz, and John Hagerty July 2011, Gartner, [online] available from <<http://www.gartner.com/technology/media-products/reprints/sas/vol9/article1/article1.html>>



## 4. An Example Approach to an ERM Program

The implementation of a strong ERM program, based on leading practices in the industry, will result in impacts in the following key areas:

1. Risk Assessment
2. Risk Monitoring and Reporting
3. Pricing and Portfolio Management

**Risk Assessment:** Traditional risk assessment is based on expert judgment. This is being replaced as a practice by the usage of quantitative scorecards. Quantitative scorecards allow risk to be differentiated in a more granular manner. Additionally, scorecards are consistent and transparent allowing companies to improve their risk analysis capabilities as time progresses. This risk assessment tool is by far the most impactful tool an Equipment Leasing and Finance company can use to improve their risk management capabilities and pricing initiatives.

**Risk Monitoring and Reporting:** To assess the efficacy of the program and policies, a company typically has to develop an infrastructure to monitor and report on the risk management processes. This entails efforts such as data integration and warehousing, enhanced data analysis and modeling capabilities and dynamic reporting capabilities. Forward looking or predictive analytical reports are also increasingly replacing traditional backward looking reports as a leading practice for ERM.

**Pricing and Portfolio Management:** At the core of an ERM program is the need to optimize the risk vs. return tradeoff. This involves introducing the concept of risk adjusted pricing and portfolio management.

**Risk Adjusted Pricing:** Traditional pricing curves are generally market driven and flat, without differentiating between risk categories. Leading Equipment Leasing and Finance companies use a differential pricing mechanism to gain market share without compromising on credit quality or residual value risk. The use of Risk Adjusted Return on Capital (RAROC) pricing tools are predominantly used to achieve optimized return given a particular risk profile.

**Portfolio Management:** Traditional means of managing portfolios using return on equity (ROE) or return on assets (ROA) measures is increasingly being replaced by calculating the return on economic capital. Using economic capital instead of pure equity or assets as the measure focuses the company on managing the portfolios intrinsic risk and measures its profitability against it.

These leading practices need to be integrated coherently in an Equipment Leasing and Finance company's ERM program. To affect this, Equipment Leasing and Finance companies first need to assess their ERM maturity and then develop a step-by-step program, to help them achieve their business goals.

As an example of one way to achieve ERM planning and implementation, the following sections detail deployment of Cappgemini's proprietary ERM assessment methodology and is referred to as the Sigma Map™ for Equipment Leasing and Finance. This risk maturity measurement model facilitates assessment of the current state of an ERM program for Equipment Leasing and Finance companies. The Sigma Map framework is used further to drive the entire ERM program from assessment to implementation of pricing and portfolio management, and finally monitoring and reporting.

### Sigma Map™: A Risk Management Maturity Assessment Model

The Sigma Map™ for Equipment Leasing and Finance model can help assess and analyze an Equipment Leasing and Finance company's current risk management program. The assessment provides an overview of where the Equipment Leasing and Finance company stands compared with industry peers, regulatory standards and ERM leading practices. This framework gauges the degree to which the Equipment Leasing and Finance company's existing practices and infrastructure are adequate and scalable for future ERM needs.



As mentioned earlier, the conceptual framework of an ERM program involves:

1. Assessing Risk
2. Shaping Risk
3. Exploiting Risk
4. Keeping Ahead

The same are explained below within the context of the Sigma Map framework.

### Step 1: Defining the Risk Map

The first step for an Equipment Leasing and Finance company is to identify the key risks which impact its business, as measured via its balance sheet. For each of the assets and liabilities, it is necessary to rank order the importance of each risk type. For example, for the publicly traded Equipment Leasing and Finance company in Figure 16 Sigma Map Assessment Based on the Consolidated Balance Sheet of an Equipment Leasing and Finance Company below, the loan portfolio is heavily impacted by credit and residual value risk, and hence we have a solid circle against it. On the other hand, cash management is most highly relevant from a liquidity risk perspective.

CONSOLIDATED BALANCE SHEET- Sigma Map Assessment							
CONSOLIDATED BALANCE SHEET	December 31,2010	Credit risk	Residual Value Risk	Market risk	Operational Risk	Liquidity Risk	Reputation Risk
<b>Assets</b>							
Cash and due from banks	734	○	○	○	●	●	○
Interest bearing deposits	10470	○	○	○	●	●	●
Trading assets at fair value-derivatives	26	●	●	●	●	●	●
Assets held for sale	1219	●	●	●	●	●	●
Total loans, net of allowance for loan losses	24084	●	●	●	●	●	●
Operating lease equipment, net	11137	●	●	●	●	●	●
Unsecured counterparty receivable	535	●	●	●	●	●	●
Goodwill	277	○	○	○	○	○	●
Intangible assets,net	119	○	○	○	○	○	●
Other assets	2358	○	○	○	●	●	●
<b>Total Assets</b>	<b>50958</b>						
<b>Liabilities</b>							
Deposits	4536	○	○	○	●	●	●
Trading liabilities at fair value-derivatives	126	○	○	●	●	●	●
Credit balances of factoring clients	935	○	○	●	●	●	●
Other liabilities	2467	○	○	●	●	●	●
Long-term borrowings	33980	○	○	●	●	●	●
<b>Total Liabilities</b>	<b>42045</b>						
<b>Total Liabilities and Equity</b>	<b>50958</b>						

Figure 16 Sigma Map Assessment Based on the Consolidated Balance Sheet of an Equipment Leasing and Finance Company

This analysis, in addition to providing a “risk map”, also provides an idea as to which risks need to be addressed. If for example, an asset class is materially small (as measured in the balance sheet) then focusing on that asset class at a later stage in the ERM program development may be better in terms of managing the programs’ resources.

## Step 2: Assessing Maturity

The second step in the process is to define the maturity of the Equipment Leasing and Finance company in terms of managing these risks.

Maturity is measured along six dimensions as shown below.

<b>Organization &amp; Risk Literacy</b>	This component covers the position and structure of the risk organization. It also includes the extent of risk literacy across the risk organization. Lastly it covers the influence of risk management over company decision-making. An important tool in this component is the definition of the company's risk appetite and profile. The definition and usage of limits are also covered in this component.
<b>Information Infrastructure</b>	Information Infrastructure covers all aspects of technology, information and data used and disseminated from and to the risk organization. It also covers aspects of data quality, data availability, meta data and data governance. An important consideration is the integration of various systems in the company.
<b>Risk Measures</b>	The Risk Measures component defines the overall risk measures used, their granularity, accuracy and uses across the company. Integration across risk types and their impact on risk measures is an important consideration here. Additional considerations are uses of these measures in budgeting, pricing and strategic decision making.
<b>Models</b>	Models include all financial and risk models which are used for different aspects such as underwriting, pricing and residual value forecasting. An important factor of this component is model validation, which should include not only the logical and mathematical validity but also the needs of model accuracy from an applicability and usage perspective.
<b>Risk Reporting</b>	The Risk Reporting component addresses the process of dissemination of risk information across the company. This includes not only the form of reports but also the transmission and delivery mechanism used to deliver these reports. Other considerations of this component are the span (across the company), scope, and relevancy and report hierarchy. Technology innovations such as dashboards are a significant enabler for this component.
<b>Regulatory considerations</b>	The regulatory component defines the process and steps to be taken in order to meet regulatory requirements. These include compliance to regulations such as Basel II, Dodd-Frank Act and Sarbanes-Oxley Act.

Figure 17 Risk Management Maturity Dimensions

Each asset/risk area as shown in the Sigma (Risk) map in Step 1 is assessed along these six dimensions on a 1 to 5 point scale, 5 being most mature. The result of this analysis provides a prioritized list of areas where gaps exist or improvements are needed. Figure 18 shows asset classes of a company measured along the maturity scale.

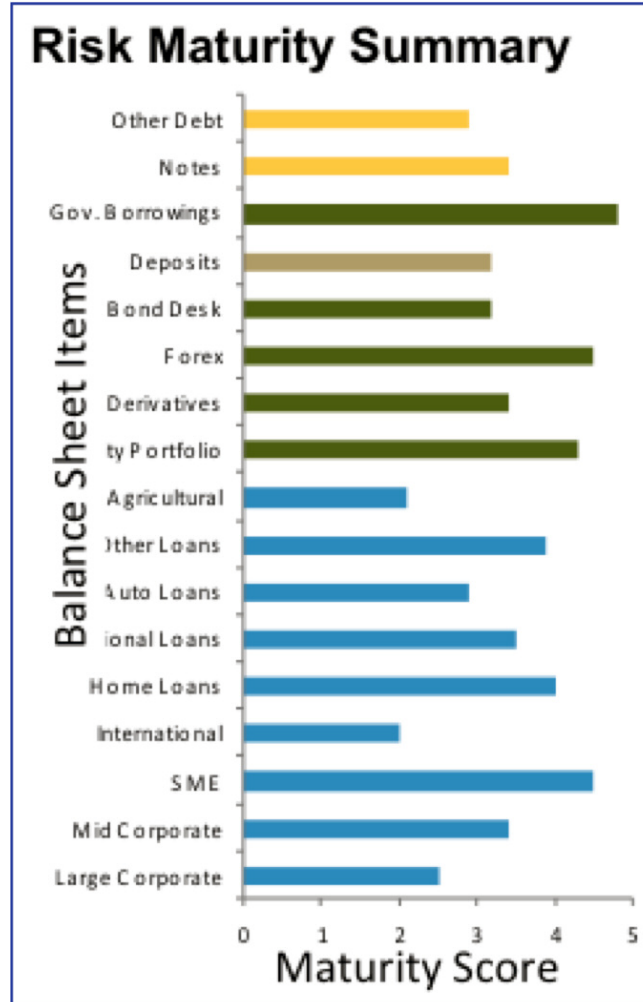


Figure 18 Example of Risk Maturity Summary Analysis

### Step 3: Developing a Program

The third step is to use this prioritized list and translate it into a action plan. A typical action plan is a multi-year program for the development or enhancement of ERM capabilities. A transformation map as shown below in Figure 19 Transformation Map for an ERM Program is generally used to develop this program.

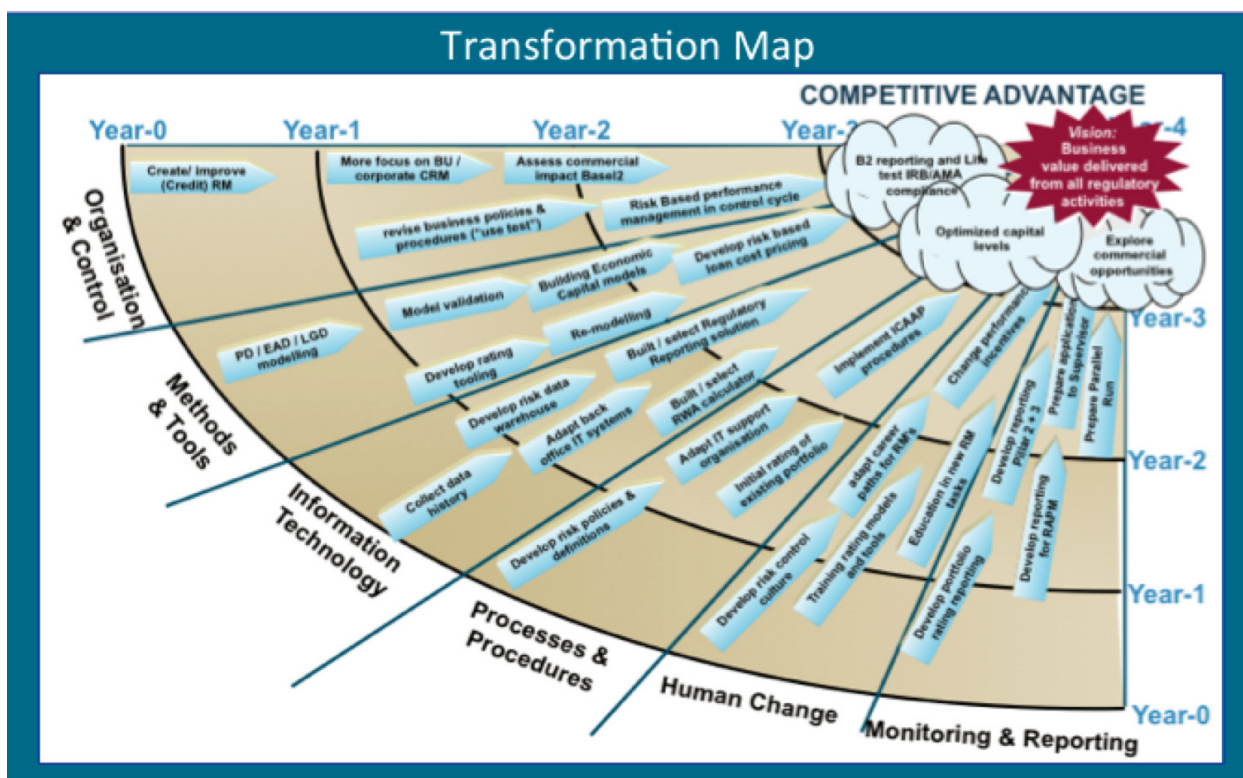


Figure 19 Transformation Map for an ERM Program

To ensure success, the following need to be kept in mind while developing the program:

- The risk governance framework needs to be integrated with the oversight structure across the company
- The primary set of risk measures, tools and models must be developed
- Regular meetings and discussions should be organized to share the knowledge of existing, new and emerging risks
- Risk control measures to address the Equipment Leasing and Finance Company's asset portfolios, employees, processes and systems need to be developed
- An estimate of all the resources and time required for the different phases of implementation of ERM and all the processes that can be used to leverage the existing resources should be prepared at corporate, business unit and functional levels
- Data quality, accuracy and integrity of the enterprise system database that is required to support the implementation of ERM should be developed and assessed

## 5. Implementing an ERM Program

### Lessons from the industry<sup>26</sup>

Successful implementation of ERM requires a combination of organizational consensus, strong executive management and an appreciation for various program sensitivities. ERM not only demands significant effort, but also forces companies to step back and identify their risks, one of the primary steps in protecting shareholder value. Though the risks and efforts are unique to each company, the challenges involved in ERM are generally uniform and largely unrelated to industry, geography or regulation. Awareness of these challenges equips companies to develop and implement ERM in a better way.

As return on investment is a key measure in the present economy, companies struggle to demonstrate ERM value weighed against the implementation costs. Though investment decisions are traditionally evaluated using common risk and reward metrics such as Return on Equity (ROE), Return on Assets (ROA) and Risk Adjusted Return on Capital (RAROC), ERM value drivers are less prescriptive. An ERM program should allow management to quantify the company's risks. As risk information becomes increasingly event-driven and dollar-based, companies face issues regarding risk distribution to external regulators, auditors and constituents. Companies must balance risk visibility and legal exposure. Additionally, one of the biggest challenges with formulating an ERM program lies in establishing a consistent risk nomenclature, the absence of which can jeopardize the success of an ERM program.

Enterprise risk assessments are performed using a variety of approaches and tools, including surveys, interviews and historical analysis. Each approach offers its own value and drawback that must be closely reviewed to determine company suitability while formulating the ERM program.

A key decision for many companies is whether risks are assessed using qualitative or quantitative metrics. The decision is generally driven by the company's industry, commitment to ERM, its view regarding proprietary knowledge and overall cost. Qualitative methods provide results that are generic indications, open to interpretation and guided by descriptors. On the other hand, quantitative assessments require sophisticated risk aggregation methods, mathematical support and skill enhancement, which means higher implementation costs. Evaluating risk assessment methods is the most important feature that companies should undertake while formulating the program.

The time horizon of ERM risk assessment is largely based on the company's intent to use ERM risk results and its willingness to invest in the development of risk management capabilities. Many companies use ERM results for quarterly or year-end planning, while more sophisticated companies integrate ERM results into annual budgeting and longer-term strategic planning processes. While shorter time horizons require less user training, are less expensive and provide increased risk estimation accuracy, longer term solutions are preferred when management prioritizes risk visibility beyond the annual financial reporting period and additional time to remediate. Regardless of the approach, the risk assessment time horizon must be consistent with intended ERM program objectives.

Most risks have multiple event likelihoods and risk severities. A thorough listing of the events is important to formulate the program to reap maximum benefits. The decision to pursue a basic or more complex method is largely based on a company's familiarity with probability and loss concepts, the risk assessment method employed (e.g., in person or technology-based) and the level of sophistication supporting the risk tolerance definition.

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<sup>26</sup>Guide to Enterprise Risk Management:FAQs, Protiviti Inc, Jan 2006, [online] available from <[http://www.ucop.edu/riskmgmt/erm/documents/protiviti\\_faiguide.pdf](http://www.ucop.edu/riskmgmt/erm/documents/protiviti_faiguide.pdf)>, [Sep 18, 2011], P 33-40, P 51-61, P72-106

Though there is no stipulation on who should “own” ERM, it is widely believed that the ERM administration should be held by risk management followed by internal audit, finance/treasury, legal and various supporting departments.

Companies often struggle with two risk reporting issues:

1. The kind of information that can be shared
2. The right way to share the information/risks

Board reports typically include only those risks that exceed a defined threshold or those that represent high value, strategic and non-quantified exposures. Business units and line reports generally present medium level exposures and transactional compliance data.

The external reporting issue is often less challenging. Public companies are often required to share certain risk information through financial statements, annual meetings, quarterly earnings announcements, public presentations and various regulatory responses. While external reporting requirements are fairly prescriptive, companies attempt to use ERM results to formulate or support risk assertions. Unfortunately, companies vary with respect to internal reporting system capabilities. Most companies report combinations of risk results and usually assign “expected loss” as the metric to allocate capital.

### Potential Issues in Implementing an ERM program

The first and foremost step for an ERM program to be successful is to gain clarity on the value proposition. If there is a failure to understand the purpose of an ERM program and its implementation, the company will ultimately run into costs that are difficult to justify, endless searches for one size fits all solutions, unnecessary implementation activities and false starts.

There are a few other issues or items to keep in mind when implementing an ERM program:

- **Required support:** The momentum of any project is highly driven by the commitment and support of the CEO and the Board of Directors without which the implementation of ERM will end up ineffective
- **Integration with existing processes:** Linking the business strategy with the enterprise risk assessments with a focus on risk responses addressing the priority risks, will increase the emphasis on improving metrics, measures and monitoring. ERM will often result in an appendage when not integrated with the existing processes of the company. Strategic business management, quality management and compliance management are examples of processes that management often chooses to integrate with ERM
- **Identification of roles and responsibilities:** Who-does-what as a part of an ERM program is often one of the biggest challenges due to the inertia of the existing processes of the company. It is essential that the company clarifies the roles and responsibilities necessary to support the program
- **Balancing Act:** It is crucial to the implementation of ERM that the entrepreneurial activities and the control mechanisms go hand in hand. Any imbalance will lead to poor performance
- **Internal conflicts:** While balancing the market and control activities is an external issue, balancing the internal control structure to bring each individual in sync with the ongoing transformation from the implementation of the ERM program is a significant question to be addressed. Usually, the Board should ensure that responsible behavior is taking place in the company



## Costs of ERM implementation<sup>27</sup>

Successful implementation of ERM requires a schematic of resources required and costs that the company might incur in acquiring or setting up these requirements. Setting up of an office of risk management, additional training required to enhance the skill set of the personnel involved and procurement of information technology solutions are a few examples of the various costs involved. Also included are costs of acquiring new technologies and integration of existing processes with strategy and risk management processes. Below shows the results of the TowersGroup report on the Global Financial IT spending on risk and compliance. It shows that companies worldwide are enhancing their risk and compliance competency.

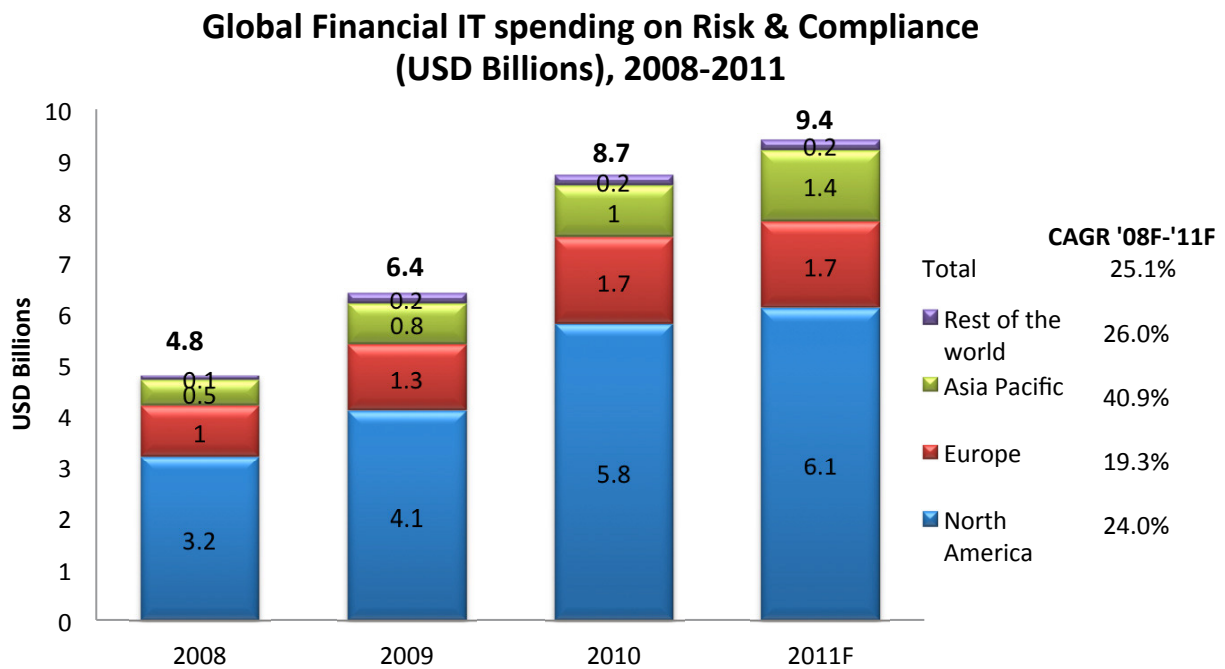


Figure 20 Global Financial IT Spend on Risk and Compliance

Cost structure varies from company to company depending on the degree of sophistication the company chooses. However, costs should not get in the way of introduction of an ERM program. In the case of a lack of resources, executives should choose a more simple and gradual approach for ERM implementation, instead of postponing it to the uncertain future.

## Post Implementation and Maintenance

Following are the tasks that ensure a consistent, beneficial and progressive ERM environment post implementation.

- Companies should be risk-ready by having robust ERM frameworks in place with effective Board and leadership involvement across all the structures and processes

<sup>27</sup>Review of ERM in the United Nations System, Benchmarking Framework, Cihan Terzi and Istvan Posta, Apr 2010, [online] available from [http://www.unjju.org/data/reports/2010/en2010\\_4.pdf](http://www.unjju.org/data/reports/2010/en2010_4.pdf), [Sep 30, 2011]

- Voluntary acceptance of ownership by the Board will enable sustainable, continuous growth in the ERM environment
- Reporting processes that integrate all the data and reports across corporate, business and functional units that lead to accountability and facilitate fast and smart decision making should be developed
- Metrics to enable risk monitoring and early warning using tools like dashboards should be developed and integrated with the existing performance metrics



## Appendix A: Case studies<sup>28, 29, 30, 31</sup>

The following are some case studies and insights from the industry on ERM.

Name of Company	Industry	Company background & Issues faced	Benefits with ERM
JP Morgan Chase	Financial Services / Banking	<ul style="list-style-type: none"> <li>•JP Morgan Chase is a leading global financial services firm with assets of \$2.2 trillion and its stock is a component of the Dow Jones Industrial Average</li> <li>•Pre ERM: Having focused its market risk oversight heavily on its trading businesses, the hike in the interest rates in 1994, had significantly damaged the mortgage markets</li> <li>•With the trading businesses intact, Chase suffered an unexpected minor loss in a small S&amp;L</li> </ul>	<ul style="list-style-type: none"> <li>•Enabled the firm to manage aggregate market risk exposures across different dimensions such as trading portfolios, asset/liability mismatch and basis risk</li> <li>•Directed the firm towards establishing a market risk staff and analytical resources like VaR and stress testing models</li> <li>•Steered the firm onto firmer grounds and helped it sustain the Russian Crisis in 1998 with earnings of \$4 billion</li> </ul>
CIBC (Canadian Imperial Bank of Commerce)	Financial Services / Banking	<ul style="list-style-type: none"> <li>•Canadian bank had both regulatory and business reasons to invest in ERM program, including firm-wide market risk, operational risk, and counterparty credit risk</li> </ul>	<ul style="list-style-type: none"> <li>•The ERM initiative paid off four years later. In the middle of 1998, CIBC was concerned with three early warning indicators in the capital markets – widening credit spreads, increasing actual and implied volatility, and the breakdown of historical price relationships. The bank promptly cut global risk limits by one-third prior to the Russian crisis and market drop later that year, thus avoiding significant losses</li> </ul>

<sup>28</sup>The Rise and Evolution of the Chief Risk Officer: Enterprise Risk Management at Hydro One, Case study, Journal of Applied Corporate Finance- Morgan Stanley publication, 2005 [Online] available from <<http://www.fma.org/FMAOnline/Archive/HydroOne%20posted%20to%20SSRN%2012-10-2004.pdf>>, [Sep 30, 2011]

<sup>29</sup>Enterprise Risk Management at United Health Group, Article , By Patrick J. Stroh, Strategic Finance, July2005 [Online] available from <[http://www.imanet.org/PDFs/Public/SF/2005\\_07/07\\_05\\_stroh.pdf](http://www.imanet.org/PDFs/Public/SF/2005_07/07_05_stroh.pdf)>, [Sep 26,2011]

<sup>30</sup>Enterprise Risk Management: Tools and Techniques for Effective Implementation, White Paper, IMA- Institute of Management Accountants, 2007 [Online] available from <<http://poole.ncsu.edu/erm/documents/IMAToolsTechniquesMay07.pdf>>, [Sep 26, 2011]

<sup>31</sup>John Fraser and Betty J. Simkins, Enterprise Risk Management: Today's Leading Research and Best Practices for Tomorrow's Executives, The Robert W. Kolb Series in Finance, Published by John Wiley & Sons Inc, New Jersey, 2010, [Sep 26, 2011]

Name of Company	Industry	Company background & Issues faced	Benefits with ERM
Mizrahi Tefahot Bank	Financial Services / Banking	<ul style="list-style-type: none"> <li>•Founded in 1923, Mizrahi Tefahot Bank is Israel's fourth largest bank with total assets of \$30.8 billion by 2009</li> <li>•Issues pre-ERM includes the challenges of satisfying Basel II requirements, automating risk calculations and improving decision making</li> </ul>	<ul style="list-style-type: none"> <li>•Adapting technology solutions as a part of ERM enabled the bank to calculate the capital in accordance with Basel II; was the first bank in Israel to produce reports including COREP</li> <li>•Ease of computation of VaR values and stress test values on a monthly basis made it possible for the bank to improve the responsiveness of VaR to the degree of volatility in financial markets</li> <li>•Automation of calculation decreased the chances of operational risk and ensured that managers can take real time decisions</li> </ul>
Heller Financial	Financial Services / Banking	<ul style="list-style-type: none"> <li>•Heller financial was involved in the commercial financing business. While Heller was confident in its credit risk and market risk functions, it was missing a formal operational risk methodology and an overall ERM framework</li> </ul>	<ul style="list-style-type: none"> <li>•ERM program helped them understand that nearly one-third of what they had classified as credit losses were in fact operational losses (e.g., inadequate loan documentation)</li> <li>•A two-and-a-half-year ERM initiative changed Heller's culture, dramatically reduced the amount of operational errors occurring within the company, and improved Heller's risk and earnings profile</li> <li>•When GE Capital acquired Heller for \$5.3 billion (48% premium), in their announcement they noted that Heller's risk management was one of the company's key assets</li> </ul>
Allstate	Financial Services / Insurance	<ul style="list-style-type: none"> <li>•Allstate is a US based insurer and the largest that is publicly held. It has reported revenue of \$32 billion in 2009</li> <li>•Benefits of ERM were not understood well outside the finance function of the firm</li> <li>•This resulted in non-use of the results of the Economic Capital model which was meant to enhance the decision making abilities at the operating level of the organization</li> </ul>	<ul style="list-style-type: none"> <li>•Enabled the firm to set up a quantitative risk/reward threshold across its business horizon which in turn assisted in understanding totality of risks, their interrelationships and their financial implications for the company in an efficient manner</li> <li>•Helped the management to gain insights into the capital consumption and the behavior of returns in the context of the risks inherent in different streams of business</li> <li>•Provided the firm with a whole new set of metrics that enable informed decision making</li> </ul>

Name of Company	Industry	Company background & Issues faced	Benefits with ERM
UHG	Healthcare	<ul style="list-style-type: none"> <li>•UHG is an American based health and well-being firm which reported a net income of \$4.6 billion in 2010</li> <li>•The company had a Business Risk Management framework in place and wanted to step it up to an Enterprise level</li> <li>•Integration of BRM into ERM and implementation methodology was the major issue faced</li> </ul>	<ul style="list-style-type: none"> <li>•Business risk transparency and value creation</li> <li>•Confidence in decision making</li> <li>•Prevention of operational and financial surprises</li> </ul>
Arcelor Mittal	Steel	<ul style="list-style-type: none"> <li>•Arcelor Mittal is the world leader in steel with revenues of more than \$105 billion in 2007 and operations in more than 60 countries</li> <li>•Being number one in the steel industry, the firm's focus was to address the emerging risks such as increasing natural resources constraints, monitoring quality and quantity of raw materials, climate changes, disruption in the economic conditions and access to financing for the industry, potential threat of evolution of nanotechnology, compliance issues and their impact on reputation</li> </ul>	<ul style="list-style-type: none"> <li>•Identified interconnectedness among its risks</li> <li>•Helped the company monitor emerging risks using macroeconomic trends</li> <li>•Determined what risks can be translated into opportunities and assesses the sufficiency of the proposed strategic response</li> <li>•Helped improve the efficiency of business continuity plans</li> </ul>
Pepsi Co	Foods & Beverages	<ul style="list-style-type: none"> <li>•Pepsi Co is a world leader in foods and beverages with revenues of more than \$39 billion in 2007</li> <li>•Being number one in its industry, the firm needed a focus on emerging risks such as access to quality raw materials, food insecurity issues, carbon emissions/climate changes and risks embedded in the movements of macroeconomic factors</li> <li>•In order to keep up the existing position, the firm had to take up the challenge of identifying and monitoring the emerging risks</li> </ul>	<ul style="list-style-type: none"> <li>•Creation of a Product Integrity Council has motivated a co ordination of division-led product integrity efforts</li> <li>•ERM resulted in an enhanced IT infrastructure through consolidation, updating and retirement of older technologies</li> <li>•Effective risk management and quality processes have driven the firm to stay abreast of the changing needs of the customers</li> <li>•ERM led to an integrated compliance and ethics leadership structure</li> <li>•The change management programs in the context of workforce resulted in diversity and inclusion and employee work-life flexibility</li> </ul>

Name of Company	Industry	Company background & Issues faced	Benefits with ERM
UGG	Agriculture	<ul style="list-style-type: none"> <li>•United Grain Growers (UGG), a Winnipeg, Manitoba–based agricultural company was one of the first companies in Canada to embrace ERM. Significant volatility in earnings, increased disclosure requirements, Toronto Stock Exchange (TSE) guidelines, and the emphasis placed on risk management by credit rating agencies, and UGG’s perception that equity analysts’ views were based on earnings results were some of the reasons that prompted UGG to explore ERM</li> </ul>	<ul style="list-style-type: none"> <li>•UGG started by forming a risk committee, which consisted of the CEO, CFO, risk manager, treasurer, compliance manager, and manager of corporate audit services. The committee appointed a major insurance company to analyze the risks faced by UGG</li> <li>•The risk costs did not increase significantly, even when a comprehensive risk strategy was put in place</li> <li>•Provided a better understanding of ERM and improved communications about risk</li> <li>•Improved cooperation from top management and better coordination between different departments</li> </ul>
Hydro One	Electric Utility	<ul style="list-style-type: none"> <li>•Hydro One is a Canadian electric utility company that has experienced significant changes in its industry and business. The company is the largest electricity delivery company in Ontario, Canada, and one of the 10 largest such companies in North America. Hydro One has been at the forefront of ERM for many years, especially in utilizing a holistic approach to managing risks, and provides a best practices case study for other firms to follow</li> </ul>	<ul style="list-style-type: none"> <li>•Achieved lower cost of debt with higher debt rating on \$1 billion debt issue, which was the first issued as a new company. Issue was heavily oversubscribed. Ratings analysts stated ERM was a significant factor in the ratings process for Hydro One</li> <li>•Helped Hydro One to Improve corporate governance via best practices guidelines</li> <li>•Reassured stakeholders that the business is well managed with stakeholders defined to include investors, analysts, rating agencies and regulators</li> <li>•Helped improve the efficiency of business continuity plans</li> </ul>

## Appendix B: Risk Management Survey

In order to get a better understanding of risk management within Equipment Leasing and Finance companies, a survey was conducted during the period of August – September 2011 with over 25 companies as part of the annual Business Performance Technology Index published by Capgemini and the Equipment Leasing and Finance Association (ELFA).

Table 1 Scope of Respondents in the Survey below shows the types of companies and the market segment breakdown of the responding companies.

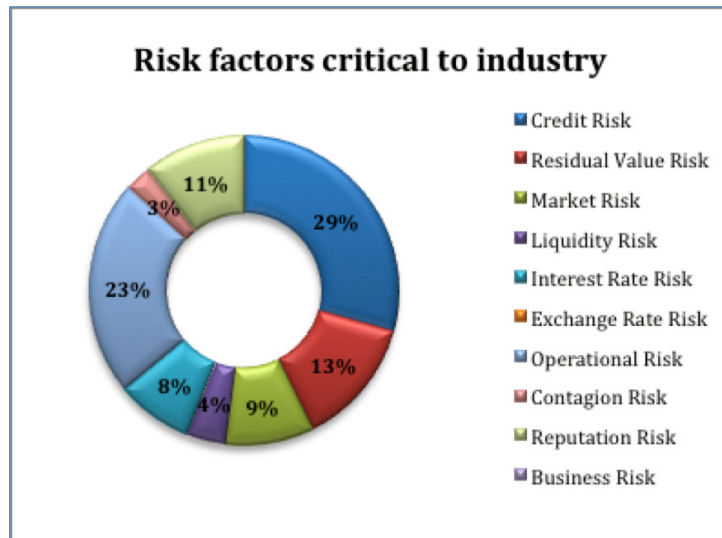
Companies Responding		
Bank	9	35%
Captive	8	30%
Independent	9	35%
Market Segment		
Large-Ticket	3	12%
Middle-Ticket	10	38%
Small-Ticket	10	38%
Micro-Ticket	3	12%

Table 1 Scope of Respondents in the Survey

The survey consisted of nine specific questions. The following section provides a summary of the responses to the survey.

## Detailed Results

Q 1. Please identify the critical risks focused on in your business:



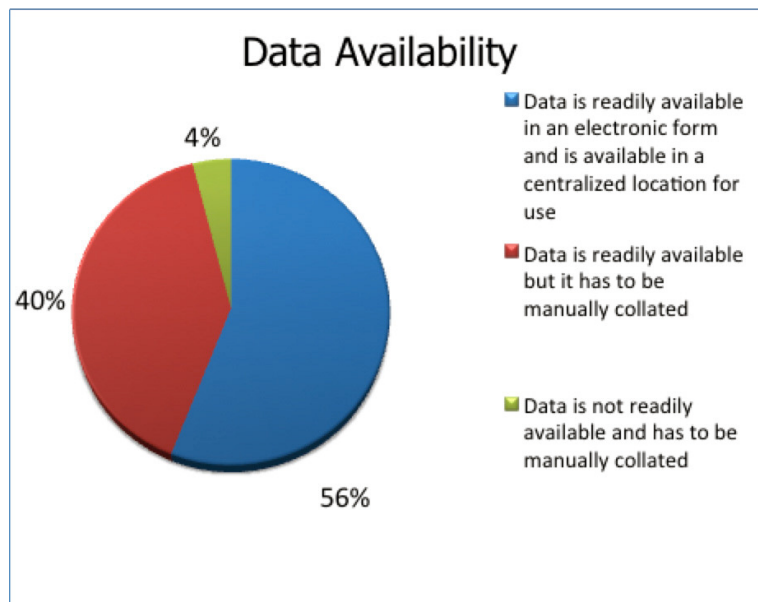
Credit, Operational and Residual value risk are the key risks focused on by companies in the Equipment Leasing and Finance Industry.

Relates to Risk Profiling within the Study

Please indicate the top 3 risks critical to your business:

	Count	Percentage	% of Companies Choosing
Credit Risk	22	29%	88%
Residual Value Risk	10	13%	44%
Market Risk	7	9%	28%
Liquidity Risk	3	4%	12%
Interest Rate Risk	6	8%	24%
Exchange Rate Risk	0	0%	0%
Operational Risk	17	23%	68%
Contagion Risk	2	3%	8%
Reputation Risk	8	11%	32%
Business Risk	0	0%	0%

## Q 2. Please describe your risk data availability



Better than 40% of the respondents indicated that data availability is an issue.

Relates to Risk Appetite Statement within the Study

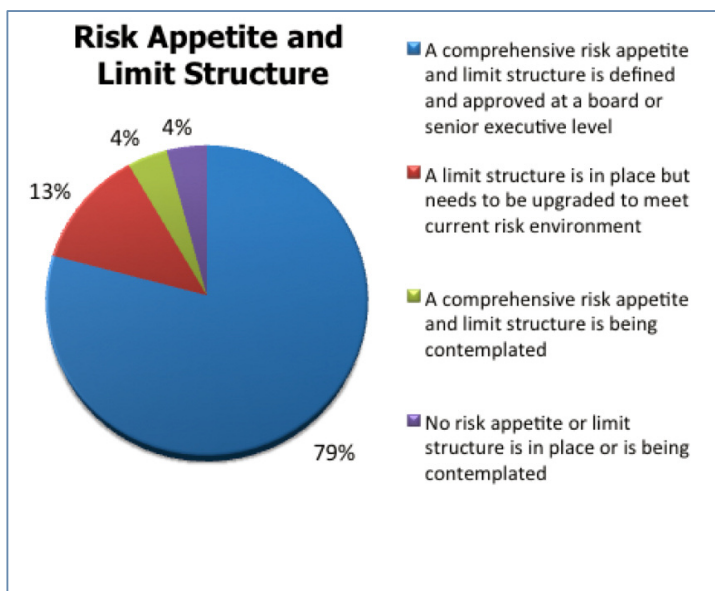
## Q 3. Please describe your risk data quality and standardization



In addition to data availability, data quality seems to be a challenge as almost 80% of the respondents indicate that “manual massaging of the data” is needed.

Relates to Risk Appetite Statement within the Study

#### Q 4. Please describe your risk appetite and limit structure



Risk literacy is high in the industry as 80% of the respondents have a risk policy and limit structure in place.

Relates to Risk Appetite Statement within the Study

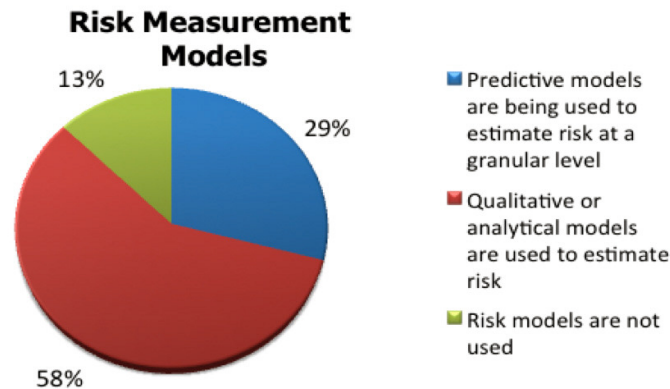
#### Q5. Please describe your risk policy definitions and applicability:

	Count	Percentage
Risk policies are well documented, operational and have board or senior executive level exposure	24	96%
Risk policies and processes are adequate but do not have senior level exposure	0	0%
Risk policies exist but are not operational	1	4%
Risk policies do not exist	0	0%

Relates to Policies within the Study



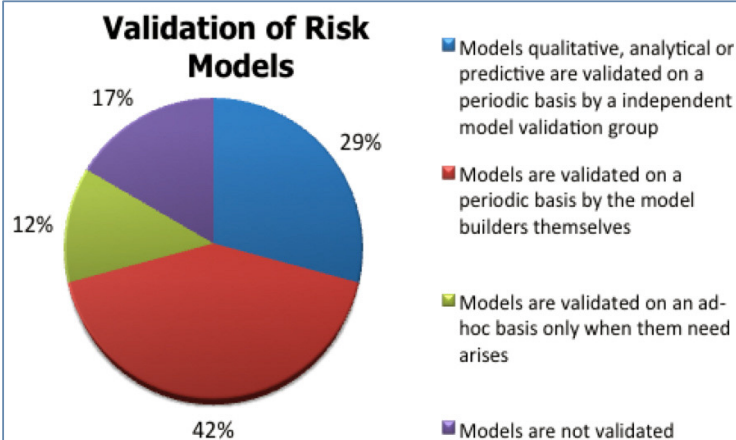
### Q 6. Please describe your risk measurement models



Almost 40% of the respondents are not leveraging predictive models for risk management. This indicates a huge opportunity for most companies.

Relates to Risk Models within the Study

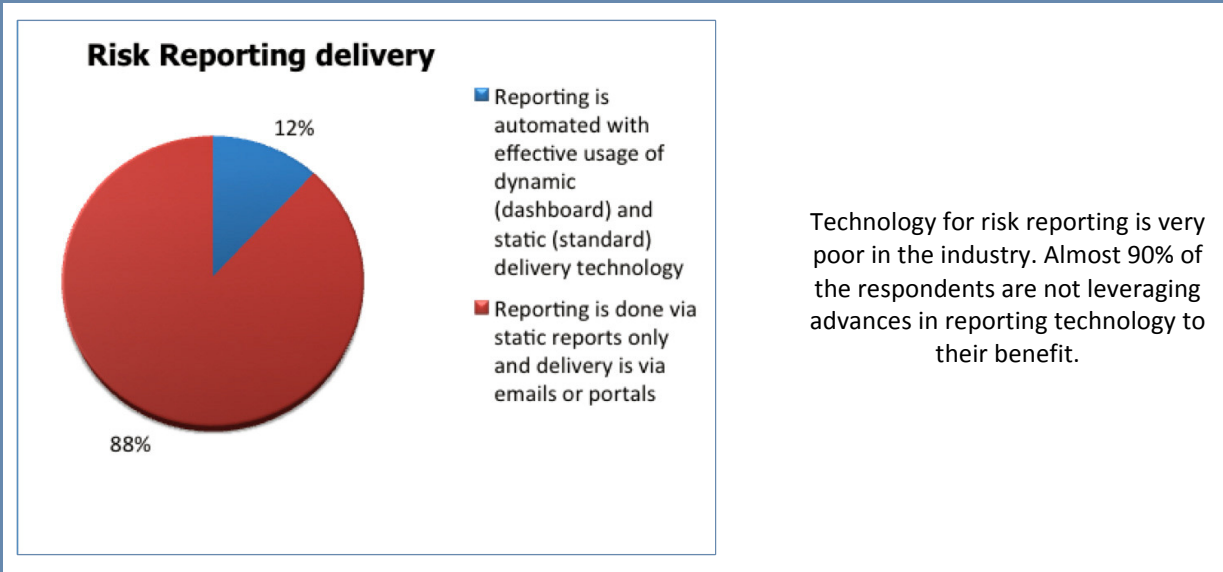
### Q 7. Please describe the validation of your risk models:



“Model Risk” is high in the industry as better than 70% of the respondents are not following model validation best practices in managing their models.

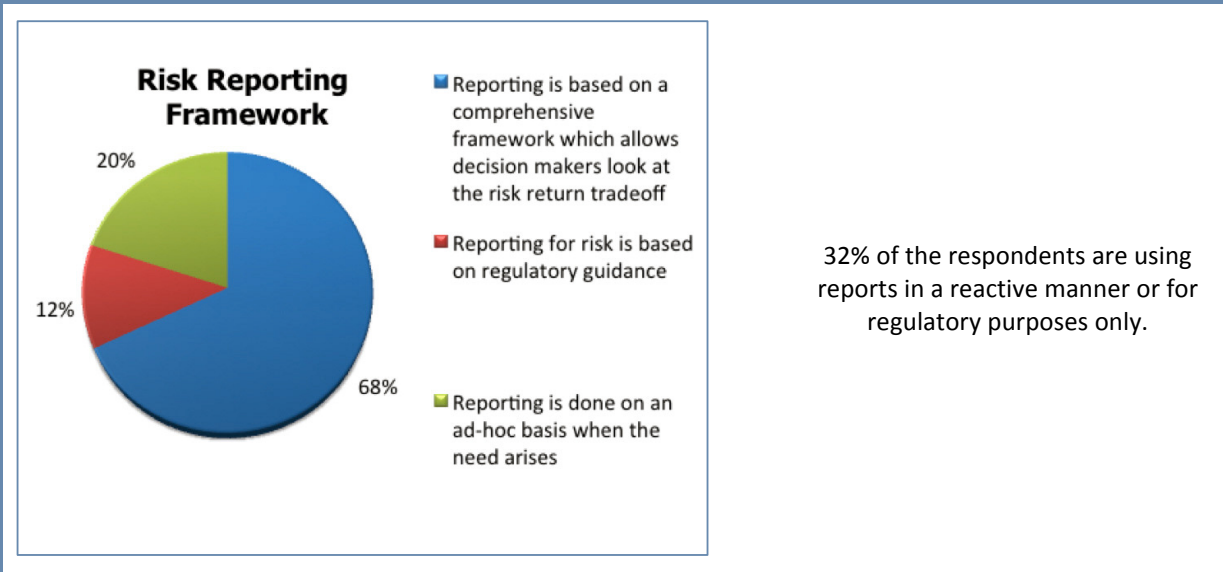
Relates to Model Validation within the Study

**Q 8. Please describe your risk reporting delivery**



Relates to Reporting within the Study

**Q 9. Please describe your risk reporting framework**



Relates to Reporting within the Study

## Summary of Results

- Credit, Operational and Residual value risk are the key risks focused on by companies in the Equipment Leasing and Finance Industry
- Risk data quality is generally good but it requires manual data massaging to allow usability
- Risk appetite and limit structure is defined and approved at a Board or senior executive level
- Risk policies are well documented, operational and have Board or senior executive level exposure
- Qualitative and analytical models are prevalent but only one-third of companies are using predictive models
- Usage of static risk reporting is common but very few respondents have developed dynamic risk reporting capabilities

## Challenges for Equipment Leasing and Finance Companies

Currently, there are two key challenges facing the Equipment Leasing and Finance industry in getting an ERM program up and running are:

### 1. Lack of risk infrastructure including models, data and resources

According to the survey results, only 20% of companies responded that data quality to support ERM was strong. The lack of foundational elements of risk management such as a data warehouse and dual rating systems implies that the risk appetite definition will involve a qualitative assessment. A robust qualitative assessment will necessitate the involvement of multiple stakeholders in discussions and decision-making. Having an overarching risk framework is critical so that all stakeholders can have a common view of risk to achieve a unified vision for the risk appetite. Consolidating and presenting all enterprise risk information on a dashboard, which allows for decision-making and action will help achieve this

### 2. Regulatory and market pressures to have a risk profile and risk appetite statement defined in an accelerated time frame

Companies that don't have a history of good risk management practices will find it extremely difficult to meet many of the regulatory deadlines and/or market-based pressures without quickly learning from the industry and adopting best practices. Due to the historical limits of ERM and its use in the Equipment Leasing and Finance industry, some of these approaches will likely end up coming from other, related financial services segments and evaluating approaches, those that include 'accelerators' – e.g. ready to use templates and methodologies, will be of great importance.

## Appendix C: ERM Frameworks and Standards

This Section explores the key organizations, regulators and standards which have lead to enhancements to the concepts in ERM.

### Key Organizations

#### Casualty Actuarial Society Framework (CAS)<sup>32</sup>

In 2003, the Casualty Actuarial Society (CAS) defined ERM as the discipline by which a company in any industry assesses, controls, exploits, finances, and monitors risks from all sources for the purpose of increasing the company's short- and long-term value to its stakeholders. The CAS conceptualized ERM along two dimensions: risk type and risk management processes.

Risk types and examples include:

- Hazard risk
  - First party hazard risks such as damage to plant and equipment, second party hazard risks such as illness or work related injuries to employees and third party hazard risks such as tort liability
- Financial risk
  - Exchange rate risk, pricing risk, commodity risk, credit risk
- Operational risk
  - Customer satisfaction, product failure, integrity, reputational risk
- Strategic risk
  - Competition, social trend, capital availability

The risk management process as CAS envisions it involves:

1. **Establishing Context:** Developing an understanding of the current conditions in which the company operates in an internal, external and risk management context
2. **Identifying Risks:** Documenting the extreme events that threaten the achievement of growth objectives of the company
3. **Analyzing/Quantifying Risks:** Calibrating and, if possible, creating probability distributions of outcomes for each material risk
4. **Integrating Risks:** Aggregating all risk distributions, reflecting correlations and portfolio effects, and the formulation of the results in terms of impact on the company's key performance metrics
5. **Assessing/Prioritizing Risks:** Determining the contribution of each risk to the aggregate risk profile, and appropriate prioritization
6. **Treating/Exploiting Risks:** Developing strategies for controlling and exploiting the various risks

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<sup>32</sup>Overview of Enterprise Risk Management, Casualty Actuarial Society, May 2003, [online] Available from <<http://www.casact.org/research/erm/overview.pdf>>, [Sep 22, 2011], pg 13

7. **Monitoring and Reviewing:** Ongoing measurement and monitoring of the risk environment and the performance of the risk management strategies

### **COSO (Committee of Sponsoring Organizations of the Treadway Commission) ERM Framework<sup>33</sup>**

The COSO "Enterprise Risk Management-Integrated Framework" published in 2004 defines ERM as a "...process, effected by an entity's board of directors, management, and other personnel, applied in strategy setting and across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives." The COSO framework expanded the ERM dialogue by envisioning an approach built across multiple dimensions within a company.

COSO's ERM Integrated Framework consists of the eight components:

1. Internal Environment
2. Objective Setting
3. Event Identification
4. Risk Assessment
5. Risk Response
6. Control Activities
7. Information and Communication
8. Monitoring

These are applied across four objective categories:

1. Strategic - high-level goals, aligned with and supporting the company's mission
2. Operations - effective and efficient use of resources
3. Reporting - reliability of operational and financial reporting
4. Compliance - compliance with applicable laws and regulations

The cube in Figure 1 below provides a good visual depiction of ERM activities cutting across both business entities and core business functions.

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<sup>33</sup>Enterprise Risk Management-Integrated Framework, Committee of Sponsoring Organizations of the Tread way Commission, Sep 2004, [online] Available from <[http://www.coso.org/documents/COSO\\_ERM\\_ExecutiveSummary.pdf](http://www.coso.org/documents/COSO_ERM_ExecutiveSummary.pdf)>, [Sep 22, 2011], P 3-8



Figure 21 COSO's Enterprise Risk Management-Integrated Framework

## ISO (International Organization for Standardization) 31000: the New International Risk Management Standard<sup>34</sup>

ISO 31000 is an international standard for Risk Management which was published in November 2009. An accompanying standard, ISO 31010 - Risk Assessment Techniques, soon followed together with the updated Risk Management vocabulary ISO Guide 73 (December 2009). ISO 31000:2009 provides principles and generic guidelines on risk management but, it is not meant to standardize risk management across companies.

### Other Frameworks and Standards

Some other ERM frameworks and organizations which have the concept's thought leadership include<sup>35</sup>:

- British Standard
- AIRMIC (a member based association of risk professionals)
- Risk and Insurance Management Society (RIMS) Risk Maturity Model
- FAA (Federal Aviation Administration) Safety Risk Management
- FERMA (Federation of European Risk Management Associations)

## Regulators

The risk management processes of U.S. corporations are under increasing regulatory and public scrutiny. While there are no explicit regulatory requirements mandating the use of any particular framework for implementing ERM at the present time, regulatory developments have created an environment in which companies benefit from the implementation of ERM. Equipment Leasing and Finance, in and of itself is not highly regulated so most regulations stem from a company's ownership structure – bank ownership and publicly traded companies are two primary examples. Below are some of the regulatory bodies that are involved in setting requirements around risk management, particularly in the financial services sector.

<sup>34</sup>Abstract of Risk Management- Principles and Guidelines, ISO 31000:2009, [online] available from <[http://www.iso.org/iso/catalogue\\_detail?csnumber=43170](http://www.iso.org/iso/catalogue_detail?csnumber=43170)>, [Sep 22, 2011]

<sup>35</sup>The Strategic Implications of Enterprise Risk Management, White Paper, Ezeosa Dafikpaku, Mar 2011, [online] Available from <<http://www.erm-symposium.org/2011/pdf/Dafikpaku.pdf>>, [Sep 16, 2011]

## Basel Committee on Banking Supervision<sup>36</sup>

The Basel Committee on Banking Supervision (BCBS) is a committee of banking supervisory authorities that was established by the central bank governors of the Group of Ten countries in 1975. It provides a forum for regular cooperation on banking supervisory matters. Its objective is to enhance understanding of key supervisory issues and improve the quality of banking supervision worldwide. The committee now comprises representatives of more than 25 countries and its work is organized by four sub committees: The Standards Implementation Group, The Policy Development Group, The Accounting Task Force and The Basel Consultative Group. The Committee also frames guidelines and standards in different areas such as the International Standards on Capital Adequacy, the Core Principles for Effective Banking Supervision and the Concordat on Cross-border Banking Supervision.

The Basel committee along with its sister organizations, the International Organization of Securities Commissions and International Association of Insurance Supervisors, make up the Joint Forum of International Financial Regulators.

## Securities Exchange Commission<sup>37</sup>

The U.S. Securities and Exchange Commission (SEC) is a federal agency which holds primary responsibility for enforcing the federal securities laws and regulating the securities industry, the nation's stock and options exchanges, and other electronic securities markets in the United States. In addition to the 1934 Act that created it, the SEC enforces the Securities Act of 1933, the Trust Indenture Act of 1939, the Investment Company Act of 1940, the Investment Advisers Act of 1940, the Sarbanes-Oxley Act of 2002 and other statutes.

## Consumer Financial Protection Bureau (CFPB)<sup>38</sup>

According to the bureau's webpage, "The central mission of the Consumer Financial Protection Bureau (CFPB) is to make markets for consumer financial products and services work for Americans—whether they are applying for a mortgage, choosing among credit cards, or using any number of other consumer financial products." The CFPB was established in 2010 by the Dodd–Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act). As this bureau is just getting started it will likely have an impact on everyone required to interface with it. The jurisdiction of the bureau includes banks, credit unions, securities companies, payday lenders, mortgage-servicing operations, foreclosure relief services, debt collectors and other financial companies. The CFPB's most pressing concerns are mortgages, credit cards and student loans. While commercial Equipment Leasing and Finance is not directly mentioned in the mission statement, there is significant concern within the industry about the reach of the bureau, especially with regard to doing business with small businesses.

Among other things, the bureau:

- Conducts rule making, supervision and enforcement for Federal consumer financial protection laws
- Restricts unfair, deceptive, or abusive acts or practices
- Takes consumer complaints
- Promotes financial education
- Researches consumer behavior

<sup>36</sup>About the BASEL committee, [online] available from <<http://www.bis.org/bcbs>>, [Sep 26, 2011]

<sup>37</sup>About Securities Exchange Commission [online] available from <<http://www.sec.gov/>>, [Sep 26, 2011]

<sup>38</sup>About CFPB [online] available from <<http://www.consumerfinance.gov/>>, [Sep 28, 2011]

- Monitors financial markets for new risks to consumers
- Enforces laws that outlaw discrimination and other unfair treatment in consumer finance

### **Financial Stability Oversight Council (FSOC)<sup>39</sup>**

Also established by the Dodd-Frank Act in 2010, the Financial Stability Oversight Council is a United States federal government organization with broad authorities to identify threats to the financial stability of the U.S. and monitor market discipline; to eliminate expectations that any American financial company is "too big to fail"; and to respond to emerging threats to U.S. financial stability.

### **Relevant Regulations**

In the United States, Sarbanes Oxley has commanded headlines since its passage in July 2002. While the focus of Sarbanes-Oxley is limited to the reliability of financial reporting, companies would benefit from an ERM process focused on identifying the enterprise's critical risks for timely action and disclosure. There are also other developments in the United States such as, the Basel II standards for capital adequacy of banks, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the Equal Credit Opportunity Act, the USA PATRIOT Act requiring "Know your Customer", anti-money laundering regulations and the Gramm-Leach-Bliley Act requiring financial institutions to safeguard and preserve privacy of non public customer information, to name a few.

According to New York Stock Exchange (NYSE) listing requirements, the audit committee charter requires the committee to discuss policies with respect to risk assessment and risk management. The NYSE also mandates an internal audit function with the purpose of providing management and the audit committee with ongoing assessments of the company's risk management processes and system of internal control. While not required, a robust ERM methodology and supporting systems would facilitate compliance with these requirements through an infrastructure and process, which strengthens the enterprise's focus on simultaneously protecting and enhancing enterprise value.

Outside the United States, a few examples of relevant regulations include; 1) the Kon Trag legislation in Germany which requires large companies to establish risk management supervisory systems and report controls information to shareholders, 2) the Combined Code, supported with guidance provided by the Turnbull Report that requires companies listed on the London Stock Exchange and incorporated in the United Kingdom to report to shareholders on a set of defined principles relating to corporate governance. The new Basel Capital Accord, issued by the Basel Committee on Banking Supervision, requires financial institutions to report on operational risk. In addition, Sarbanes-Oxley type legislation continues to arise in countries outside the United States. Again, an ERM process would facilitate compliance with these requirements.

### **Sarbanes-Oxley Act<sup>40</sup>**

Section 404 of the Sarbanes-Oxley Act of 2002 requires the management of companies with publicly traded securities to assess and report on the effectiveness of internal control over financial reporting (ICFR). It also requires that an independent auditor attests to management's assessment of those internal controls. In addition, new guidance issued by the SEC and PCAOB in 2007 placed increasing scrutiny on top-down risk assessment and included a specific requirement to perform a fraud risk assessment. Fraud risk (included under the topic of op-

<sup>39</sup>FAQs on Financial Stability Oversight Council, Oct 2010, [online] available from <<http://www.treasury.gov/initiatives/Documents/FAQ%20-%20FinancialStabilityOversightCouncilOctober2010FINALv2.pdf>>, [Sep 26, 2011]

<sup>40</sup>Executive Summary of the Sarbanes Oxley Act of 2002, [Jun 2010], [online] available from <<http://www.csbs.org/legislative/leg-updates/Documents/ExecSummary-SarbanesOxley-2002.pdf>>, [Sep 26, 2011]



erational risk in this study) assessments typically involve identifying scenarios of potential or actual fraud, related exposure to the company, related controls, and any action taken as a result.

### **Basel II<sup>41</sup>**

Basel II is the second of the Basel Accords, which are recommendations on banking laws and regulations issued by the Basel Committee on Banking Supervision. The purpose of Basel II is to establish minimum levels of capital for internationally active banks. The fundamental objective behind the revision of the 1988 accord has been to develop a framework that would further strengthen the soundness and stability of the international banking system while maintaining sufficient consistency that capital adequacy regulation will not be a significant source of competitive inequality among internationally active banks. Following the baseline rules accorded in Basel I, Basel II expands the rules, especially in some key areas focused on risk management. The expanded rules aim to:

- Ensure that capital allocation is more risk sensitive
- Enhance disclosure requirements which will allow market participants to assess the capital adequacy of an institution
- Ensure that credit risk, operational risk and market risk are quantified based on data and formal techniques
- Align economic and regulatory capital more closely to reduce the scope for regulatory arbitrage

### **Basel III<sup>42</sup>**

Basel III which is currently being debated by regulators and institutions will require banks to hold additional capital of specific types. In addition to credit, market and operational risk capital, it introduces a minimum leverage ratio and capital requirements against liquidity risk. Lastly, it also includes mandatory capital buffers for capital conservation and a discretionary countercyclical buffer, which allows national regulators to require additional capital during periods of high credit growth.

### **Dodd–Frank Wall Street Reform and Consumer Protection Act<sup>43</sup>**

The Dodd-Frank act is intended to promote the financial stability of the United States by improving accountability and transparency in the financial system, to end “too big to fail”, to protect the American taxpayer by ending bailouts and to protect consumers from abusive financial services practices. Dodd-Frank contains both direct and implied needs for ERM programs.

Major components of the Act include:

- Consolidation of regulatory agencies, elimination of the national thrift charter, and a new oversight council to evaluate systemic risk
- Comprehensive regulation of financial markets, including increased transparency of derivatives (bringing them onto exchanges)

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<sup>41</sup>Comprehensive version of revised framework of Basel II, Jun 2006, [online] available from <<http://www.bis.org/publ/bcbs128.pdf>>, [Sep 26, 2011]

<sup>42</sup>Basel III Framework, Dec 2010, [online] available from <<http://www.bis.org/publ/bcbs188.pdf>>, [Sep 26, 2011]

<sup>43</sup>Dodd Frank Wall Street Reform and Consumer Protection Act, Jan 2010, [online] available from <<http://www.sec.gov/about/laws/wallstreetreform-cpa.pdf>>, [Sep 27, 2011]

- Consumer protection reforms including a new consumer protection agency and uniform standards for "plain vanilla" products as well as strengthened investor protection
- Measures to improve accounting standards and tighten regulation of credit rating agencies
- The Volcker Rule: The rule specifically prohibits a bank or institution that owns a bank from engaging in proprietary trading that isn't at the behest of its clients, and from owning or investing in a hedge fund or private equity fund, as well as limiting the liabilities that the largest banks can hold

### **Equal Credit Opportunity Act (ECOA)<sup>44</sup>**

The ECOA implemented as a part of Dodd-Frank Act makes it unlawful for any creditor to discriminate against any applicant, with respect to any aspect of a credit transaction, on the basis of race, color, religion, national origin, sex, marital status, age, the fact that all or part of the applicant's income derives from a public assistance program, or the fact that the applicant has in good faith exercised any right under the Consumer Credit Protection Act. The Dodd-Frank Act has also recently amended the ECOA and requires that financial institutions collect and report information concerning credit applications made by women or minority owned businesses and by small businesses. Keeping track of each application prior to conversion into a customer for the company is a dynamic task. As such, the ever changing regulatory environment coupled with need for dynamic maintenance of potential customer data, demands the necessity of an ERM program.

### **NYSE Corporate Governance Rules**

The New York Stock Exchange requires the Audit Committees of its listed companies to "discuss policies with respect to risk assessment and risk management." It highlights that the audit committee ought to discuss the guidelines and policies to have an outline of the governance process. The audit committee has to review the risk exposures that the companies face and measures taken to handle these exposures. However, the audit committee is not expected to be directly responsible for risk assessment and risk management.

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<sup>44</sup>Building the CFPB, A progress Report, Jul 2011, [online] available from <[http://www.consumerfinance.gov/wp-content/uploads/2011/07/Report\\_BuildingTheCfpb1.pdf](http://www.consumerfinance.gov/wp-content/uploads/2011/07/Report_BuildingTheCfpb1.pdf)>, [Sep 22, 2011]

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Capgemini is a world leader in consulting, technology, and outsourcing. The firm, headquartered in France, was founded over 40 years ago and has grown to over 115,000 employees operating in more than 40 countries with 2010 revenues of approximately \$11.5B. Capgemini's mission is to empower their clients to respond faster and more intuitively to changing market dynamics.

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The authors of the *Enterprise Risk Management for Equipment Leasing and Finance Companies* study are members of Capgemini's Asset Finance practice, a specialty group in the Financial Services sector and Capgemini's Risk and Compliance Management group.

The Asset Finance group focuses on the Equipment Finance and Leasing market and works daily with companies in the industry to help them develop more efficient and profitable operations. They have proven expertise in all areas of equipment leasing and finance from originations to lease / loan management, and ultimately asset disposition. They work with both large, globally diversified financial companies and small independent equipment finance companies, providing expertise in every asset ticket size—from micro to large ticket.

The Risk and Compliance Management group focuses on providing services to address strategic issues such as loss forecasting, Basel II/III readiness, risk-based capital allocation and risk-based pricing as well as underlying data issues related to governance, risk architecture, data management, quality and analytics. Their suite of services help address today's regulatory demands, while avoiding tomorrow's hidden risks and associated losses.

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