

Credit Risk Management: Trends and Opportunities

The Current State of Credit Risk Management



People matter, results count.

1 Overview

The crisis exposed the shortcomings of existing risk management systems.

Financial institutions are subject to a number of risks such as credit risk, operational risk, and liquidity risk. Although credit risk has always been of primary concern to these institutions, its importance became paramount during the recent financial crisis. The crisis exposed the shortcomings of existing risk management systems, and several firms saw significant losses resulting from failure of their counterparties to deliver on contracts. Firms may also be worried about a second recession, which makes credit risk a top priority.

Firms are now looking for new and more innovative ways to manage their credit risk and are approaching risk management from a holistic, enterprise-wide view. This is one of the business areas that saw the highest IT investment from financial firms in 2010, and spending on risk and compliance in 2011 is expected to be double that of 2008. While North America and Europe are expected to have the highest IT spending, Asia is expected to have the most growth during this period.

1.1 Financial Risk

In the wake of the recent financial crisis, several major financial institutions reported severe losses. A large number of these losses were due to poor risk management.¹

Financial institutions face a number of different types of financial risks. While each type of risk affects a different part of the business, all of them are related to the difference between the expected return and the actual return. Some important types of financial risk are:

- **Credit Risk:** Risk of loss due to a party in an agreement not meeting its contractual financial obligation in a timely manner
- **Operational Risk:** Risk of loss due to a company's operations—processes, human resources, systems, external events. It also covers political, legal, and fraud risks.
- **Market Risk:** Risk of loss due to unexpected changes in market factors such as interest rates, stock prices, commodity prices, and foreign exchange rates

The focus of this paper is credit risk, which is also known as counter party risk or default risk. It is the risk that a counterparty may fail to pay out on a deal when it is supposed to. Counterparties that may cause a credit risk range from individuals to corporate firms to sovereign governments.

¹ *The Turner Review: A regulatory response to the global banking crisis*, Financial Services Authority (UK), March 2009; *Financial Reform to Address Systemic Risk*, Ben S. Bernanke, speech to the Council on Foreign Relations, March 10, 2009; *Financial Reform: A Framework for Financial Stability*, Group of 30, January 15, 2009; *Risk Management Lessons from the Global Banking Crisis of 2008*, Senior Supervisors Group, issued, October 21, 2009

2 Credit Risk Management After the Financial Crisis

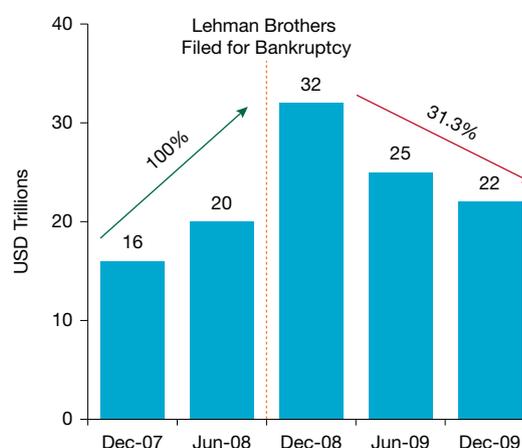
Firms are now monitoring their credit risks more closely by keenly monitoring their exposure to various counterparties.

Credit risk has always been a primary concern for financial services institutions but has not always been very effectively managed. The financial crisis that started in 2007 exposed the weaknesses of existing risk management systems among financial services institutions. There were shortcomings in the way many different firms of all sizes and regions were managing their credit risk. This was especially highlighted by complex and innovative products like mortgage-backed securities and collateralized debt obligations. Many firms had considerable exposure to these products without understanding the inherent risk. This resulted in huge losses as the prices of their investments fell. It also had a ripple effect as some of their counterparties, including large firms like Lehman Brothers, filed for bankruptcy or came close to doing so.

Instruments such as over-the-counter derivatives typically have long maturity periods, resulting in counterparties remaining exposed and at risk for long periods. After the crisis started in 2007, firms started limiting their over-the-counter exposure and asking for more collateral from brokers to protect against default (Please see *Exhibit 1*). Firms are now monitoring their credit risks more closely by keenly monitoring their exposure to various counterparties.

There is also a concern among financial services executives that the global economy is still not stable, possibly caused by high unemployment rates and improving-but-still-low consumer confidence. As a result, risk governance has become a top business priority with the senior management at most firms.

Exhibit 1: Amount Outstanding of OTC Derivatives, Gross Market Value (USD Trillions), G10 Countries, Dec. 2007 - Dec. 2009



Source: Capgemini analysis 2010; *Bank for International Settlements – Semiannual OTC derivatives statistics*, accessed on 02 November 2010

The Basel committee has released a consultative document on Basel III which is aimed at strengthening the capital levels of banks... it includes a proposal to strengthen the capital requirements for credit exposures to counterparties when trading derivatives, creating repurchase agreements, and performing securities financing activities.

The results of a recent global survey indicate that senior executives in financial firms are paying more attention to their credit risk than any other type of risk. While 67 percent of the respondents said credit risk was their top risk priority, some of the other risk types they are likely to pay a lot of attention to are: operational risk (44%), liquidity risk (38%), and market risk (33%)².

To monitor their credit risk more closely, firms are carrying out rigorous credit analysis of counterparties and various products. Also, special teams are being set up to resolve remnant structural credit positions and to monitor credit quality. There is a particularly high concern around tail risks for structured products. Firms are also upgrading their forecasting abilities to calculate risk in stressed market conditions.

Additionally, regulators have been encouraging firms to monitor their credit risk very closely. The financial reform bill in the U.S., which is aimed at preventing future financial crises and making the U.S. financial system more transparent, has introduced a number of regulations for derivatives trading to help firms better manage their credit risk. The Basel committee has also released a consultative document on Basel III which is aimed at strengthening the capital levels of banks which again will help control their credit risk. Specifically, it includes a proposal to strengthen the capital requirements for credit exposures to counterparties when trading derivatives, creating repurchase agreements, and performing securities financing activities.

2.1. Managing Credit Risk

Following the financial crisis, banks, insurers, and capital markets firms have realized that the conventional methods of managing their credit risk, although important, may not always be sufficient. In addition to traditional credit risk methods, they are now looking at more adaptive and innovative approaches to managing risk. Additionally, there is a focus on understanding the interdependencies between credit risk and all the other types of risk as firms look for an integrated enterprise-wide risk management system. Some of the popular ways in which firms manage their credit risk are listed below.

2.1.1. Credit Portfolio Models

Most financial institutions have their own internal credit models that they use for risk management. Credit portfolio models differentiate credit risk based on different parameters such as industry, geography, credit grade, etc. A numerical simulation is run to generate a large number of scenarios, simulating various states of the economy and the resulting impact of each on the credit portfolio value. With this analysis, portfolio managers can make decisions on what should be the ideal composition of the portfolio, based on their risk appetite and performance targets.

² Source: "Recover, adapt, advance: Back to business in an uncertain world", Ernst & Young, 2010

2.1.2. Internal Ratings

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, firms often also make use of internal ratings that they calculate themselves. Each firm might have its own unique methodology for calculating internal ratings. A firm could have internal ratings for various entities and complex products which may not have an external rating.

2.1.3. Exposure Limit

In order to keep their exposure to any single body in check, firms monitor their exposure to a number of entities and categories such as counterparties, bond issuers, issuer type, product type, etc. Firms create certain predefined limits for each entity, and once these limits are reached, any further trades with the entity are blocked until the exposure comes down. This is done to ensure risk diversification so that the firm is not overexposed to any one entity, and in the case of a negative market event, has only limited losses. In some markets these limits are regulatory requirements for certain types of financial firms and their exposures must be reported.

2.1.4. Stress Testing

Stress testing is done to overcome some of the drawbacks of risk models that are overly dependent on historical data, 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 firm-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.

2.2. Mitigating Credit Risk

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

- **Risk-based pricing:** This is a tool which firms use to calculate the interest rates on loans given based on the probability of default, or the risk on the loan.
- **Covenants:** Firms incorporate very strict covenants in their deal contracts. Such covenants generally require the debtor to meet certain conditions such as maintaining a required capital level, or prohibit him from carrying out certain actions.
- **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.
- **Collaterals:** The counterparty bearing the credit risk in a deal asks the opposite counterparty for collateral, which the party at risk holds till the deal is completed.

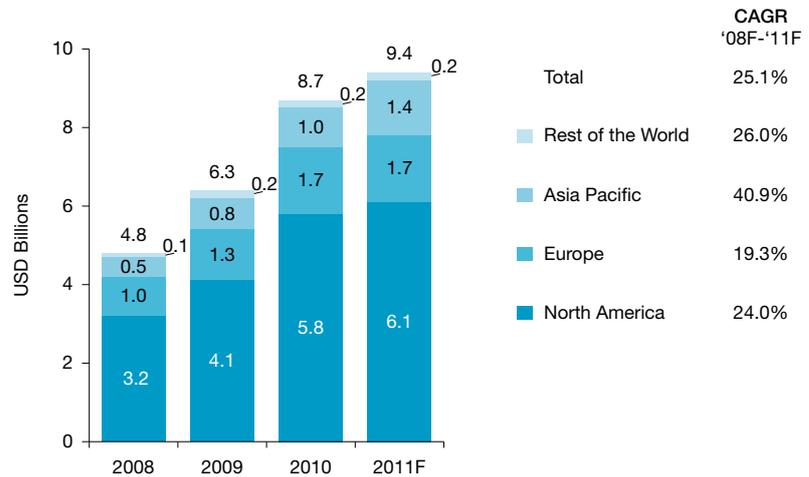
3 Using Technology to Effectively Manage Credit Risk

Financial firms worldwide have enterprise risk management on the top of their IT spending priorities.

During the financial crisis, a number of firms suffered losses because they had their risk systems and data in different silos. Now there is a focus on looking at risk holistically. Credit risk is an important part of enterprise risk, and may be closely linked to other risk types (such as market risk) when the risk of complex products is measured.

According to a global survey the Securities Industry and Financial Markets Association carried out in 2010³, 45 percent of the firms surveyed planned a significant IT investment in enterprise risk management over the next year. In another survey from *InformationWeek*, 45 percent of sell side firms said they would increase their focus on counterparty risk analytics. This was the highest increase in analytics focus for any risk type for sell side firms. One-third of buy side firms also said they would increase their focus on counterparty risk analytics.

Exhibit 2: Global Financial IT Spending on Risk and Compliance, (USD Billions), 2008 – 2011F



Source: TowerGroup, as reported on Reuters.com, accessed in December 2010

The global financial IT spending on risk and compliance in 2011 is expected to almost double from its 2008 figures (Please refer to *Exhibit 2*). In the Asia-Pacific region alone, the IT spending on risk and compliance is likely to almost triple over the same period, growing at a compound annual growth rate of 41%. However, 'North America will remain the biggest spender on risk and compliance technology, spending close to two thirds of the entire global spending.'

³ The 2010 SIFMA-IBM Technology Survey, IBM Corporation, July 2010.

4 Our Recommendations for Managing Credit Risk

Capgemini believes that the most effective credit risk management solution focuses on processes, culture, people, and the organization. We offer advisory services, technology services, and domain services to our clients, and we work with them to support analysis and design solutions for their business and technology needs.

Together with several top 50 banks, Capgemini developed a Credit Risk Framework for institutions looking to proactively manage credit risk across the enterprise. We can help build an effective Credit Risk Management program by:

- Designing and implementing a Credit Risk Framework
- Performing a Credit Risk Assessment
- Building Credit Risk Scoring Models and Credit Risk Reporting Dashboards
- Forecasting Loan Loss

Exhibit 3: Capgemini's Credit Risk Framework includes...	
Risk Rating Systems	<ul style="list-style-type: none"> ■ Dual Rating System Credit ■ Scorecards for Probability of Default (PD) and Loss Given Default (LGD) ■ RAROC Pricing ■ Stress Testing ■ Model Validation
Business Process Improvements	<ul style="list-style-type: none"> ■ Credit Policy Analysis ■ Loan Process Efficiency Analysis ■ End-to-end processing frequency ■ Customer probability analysis ■ Credit Risk Profile development
Data Management	<ul style="list-style-type: none"> ■ Data Quality/Adequacy Analysis ■ Integration of Source Systems ■ Aggregation, Extract, Transform & Load (ETF) and Reporting Tools
Risk Intelligence	<ul style="list-style-type: none"> ■ Dashboards ■ Reporting Templates ■ Dimensional Data Model for Bank Risk

About the Author

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