

## BRIEFING NOTE

### AUGUST 2012

#### Bob Dutcher

Senior Director, Moody's Analytics

#### Contact Us

AMERICAS

+1.212.553.1658

basel3@moodys.com

EMEA

+44.20.7772.5454

basel3@moodys.com

ASIA (EXCLUDING JAPAN)

+85 2 2916 1121

basel3@moodys.com

JAPAN

+81 3 5408 4100

basel3@moodys.com

#### About the Author

**Bob Dutcher** is a Senior Director in the Enterprise Risk Solutions division of Moody's Analytics. Bob has over 20 years of experience in software, technology and financial services companies covering business intelligence, analytics, data warehousing, risk and financial products. Over the years, Bob has held a variety of senior management roles in some of the fastest growing and most successful technology companies in the world. Bob holds a BS in Physics and MS in Engineering.

## The Dodd-Frank Act: An Implementation Framework for Regulatory Capital, Liquidity and Concentration Risk

### Executive Summary

While the key points about the causes and impact of the 2008 banking crisis are widely understood, the full implications of the response of governments and supervisors is only now being fully grasped.

The most significant response thus far has been the development of the Basel III framework as a global standard for improving the management and regulation of financial institutions, which is being implemented by the G20 nations. In the US, the primary response has been the Dodd-Frank Wall Street Reform and Consumer Protection Act. The US has also committed to implement Basel III.

The Dodd-Frank Act covers a very broad body of legislation. This briefing note explores the fundamentals of Sections 165 and 166 of the Act, which covers the enhanced prudential standards required in the Act (Section 165), focusing on regulatory capital, liquidity and concentration risk. It also examines the early remediation requirements of the Act (Section 166).

The note proposes some best practice steps when implementing these sections of the Act, helping banks to implement the regulations on time and on budget.

### Background

In December 2011 the Federal Reserve published a Notice of Proposed Rulemaking (NPR) for Section 165 and 166 of the Dodd-Frank Act.

The proposed rules will have a significant impact on many bank holding companies, savings and loan (S&L) holding companies, state member banks and non-bank systemically important financial institutions (SIFIs). The scope of the proposed rules has seven main elements, which are:

- ✓ Risk-based capital requirements and leverage limits
- ✓ Liquidity requirements
- ✓ Single-counterparty credit limits
- ✓ Risk management and risk committee requirements
- ✓ Stress testing requirements
- ✓ Debt-to-equity limits
- ✓ An early remediation framework

In general, the rules are moving in the direction of Basel III. In June 2012<sup>1</sup>, the Federal Reserve, the Office of the Comptroller of Currency (OCC) and the Federal Deposit Insurance Corporation (FDIC) issued an additional series of NPRs that proposed applying some of the principles of Basel III to the Dodd-Frank Act. These additional NPRs focus on Sections 171 and 939A of the Act. They focus on risk-based and leveraged capital requirements, as well as the standardized and advanced approach capital rules. In addition, these NPRs also propose applying these new requirements much more broadly, covering institutions with \$500 million in assets and all savings and loans institutions. The impact of these additional NPRs could be significant for many institutions. Many would need to significantly enhance their processes and infrastructure to cope with the additional data consolidation, calculation and reporting demands of Basel III. For a more detailed review of Basel III, read the Moody's Analytics Whitepaper: "Implementing Basel III: The Challenges, Options & Opportunities."<sup>2</sup>

## Who Do the Rules Affect and To What Extent?

The proposed rules affect a large number of financial institutions. The current proposals affect, to a varying degree, the following:

- ✓ US Bank Holding Companies with more than \$50 billion in assets
- ✓ US Holding Companies of Foreign banks with US Holding Company assets of more than \$50 billion
- ✓ US Bank Holding Companies, S&Ls and State Member Banks with more than \$10 billion in assets
- ✓ Federal Reserve designated non-Bank SIFIs

Table 1: Summary of Enhanced Rules Per Institution

Specific Regulations	Regulated Entity			
	US Bank holding company \$50 billion + assets	Foreign banks <sup>3</sup> with US assets of \$50 billion +	Financial company* with \$10 billion + assets	Non-bank SIFIs
Risk-based capital requirements and leverage limits	✓			✓
Liquidity Requirements	✓	✓		✓
Single-counterparty Credit Limits	✓			✓
Risk Management and Risk Committee Requirements	✓	✓	Applies to bank holding companies	✓
Supervisory Stress Test Requirement	✓			✓
Company Run Stress Test Requirement**	✓		✓	✓
Debt-to-equity Limits	Federal Reserve must still designate	Federal Reserve must still designate		Federal Reserve must still designate
Early Remediation Framework	✓			✓

\* Defined as bank holding company, S&L holding company or state member bank

\*\* Stress testing rules for S&L holding companies are delayed until after S&L risk-based capital rules have been established

The scale and scope of these rules are constantly evolving as the theory is put into practice and they will likely extend to more institutions rather than fewer. For example the Federal Reserve is exploring how best to manage the US operations of large foreign bank holding companies, which are not covered under this specific proposal and so presents a loophole. In addition, enhanced capital and leverage rules are being reviewed for S&Ls, which should mitigate a repeat of the Savings and Loans crisis of the 1980's and 1990's.

<sup>1</sup> See Basel III NPR, Advanced Approaches and Market Risk NPR, Standardized Approach NPR and Final Rule Regarding Market Risk Capital, all published June 2012, Board of Governors of the Federal Reserve System.

<sup>2</sup> Download at <http://www.moodyanalytics.com/basel3implementation2011>

<sup>3</sup> Defined in Subpart A, section 252.1, page 120 subsection (3) U.S. bank holding company subsidiaries of foreign banking organizations

## The Proposed Rules within Sections 165 and 166 of the Dodd-Frank Act

### 1. Risk-Based Capital Requirements and Leverage Limits

The risk-based capital requirements and leverage limits apply to US bank holding companies with \$50 billion or more in assets and Federal Reserve designated non-bank SIFIs. The proposed legislation also states that there will be a subsequent capital requirement that will include additional aspects of Basel III, such as the conservation and countercyclical buffer as well as an additional capital charge added onto the conservation buffer for Globally Systemically Important Banks (G-SIBs), which is an additional 1-3.5% of capital for the top 30 global banks.

The proposed rules covering capital minimums and leverage ratios are similar to the current minimums: Tier 1 capital ratio of 4%, total capital ratio of 8%, and a leverage ratio of 4%. However, these minimums are now also subject to the stress testing and the remediation requirements of the Act.

### 2. Liquidity Requirements

The enhanced liquidity requirements apply to US bank holding companies with \$50 billion or more in assets, including US-based foreign subsidiaries, and Federal Reserve designated non-bank SIFIs. The enhanced rules require cash flow projections arising from assets, liabilities and off-balance sheet exposures over the short and long term. Institutions must perform monthly liquidity stress tests and have the ability to perform ad-hoc stress tests as well. Hypothetical and historical scenarios, including extremes must be performed with a minimum of 4 time horizons – overnight, 30 day, 90 day and one year.

The proposal also makes it clear that the Federal Reserve intends to issue additional liquidity requirements which will be consistent with Basel III, including the Basel III Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR). The LCR leverages a short term projection (30 days) and is designed to ensure that banks are able to internally fund themselves during periods of extreme stress. The NSFR is designed to ensure that banks match the time profile of their lending with their funding, rather than constantly rolling over their borrowings with short term wholesale funding.<sup>4</sup>

The Board of Directors, or the enterprise wide risk committee established by the Board of Directors, must oversee the liquidity risk management processes and must review and approve the bank's liquidity risk management strategies, policies and procedures.

The Board of Directors must also establish the Bank's liquidity risk tolerances, at least annually, and perform semi-annual reviews to determine if the institution is being managed in accordance with established liquidity risk tolerances. The Board is also required to review and approve the Contingency Funding Plan (CFP) annually or whenever the plan is materially revised.

The risk committee or designated subcommittee would be required to review and approve the liquidity costs, benefits, and risk of each significant new business line and each significant new product before implementation of the line or offering of the product. New businesses or products would need to be tested under current and stressed conditions to determine if they are within the established liquidity risk tolerance. At least annually, each significant product line and product is required to be reviewed and approved that they have not created any unanticipated liquidity risk and to determine whether their liquidity risk continues to be within the established liquidity risk tolerance.

Additionally, the risk committee must:

- ✓ Review quarterly cash flow projections
- ✓ Review and approve liquidity stress testing models
- ✓ Review the liquidity stress testing results
- ✓ Approve the size and composition of the liquidity buffer
- ✓ Review and approve limits on potential sources of liquidity risk and review compliance with those limits
- ✓ Review liquidity risk management information needed to identify, measure, monitor and control liquidity risk and to comply with the new liquidity rules
- ✓ Review the independent validation of the stress test
- ✓ Establish an independent review function to evaluate its liquidity risk management

<sup>4</sup> A more detailed overview of Liquidity Compliance in Basel III is available at <http://www.moodyanalytics.com/basel3liquidity2011>

The institution is also required to create a CFP, which is composed of:

- ✓ The identification of stress events
- ✓ An assessment of the level and nature of their impact
- ✓ An assessment of available funding sources and needs
- ✓ Alternative funding sources
- ✓ Event management processes that define the procedures for managing liquidity during identified liquidity stress events

The proposed rules also require the identification of a liquidity stress event management team and specification of the process, responsibilities, and triggers for invoking the CFP, escalation of responses, decision-making and executing contingency measures. The CFP must also contain procedures for monitoring emerging liquidity stress events, as well as early warning indicators. Institutions would be required to periodically test the components of the CFP, including methods it will use to access alternative funding.

Institutions would be required to establish and maintain limits on:

- ✓ Concentrations of funding by instrument type, single counterparty, counterparty type, secured and unsecured funding, and other liquidity risk identifiers
- ✓ The amount of specific liabilities that mature within various time horizons
- ✓ Off-balance sheet exposures and other exposures that could create funding needs during liquidity stress events

Institutions will be required to monitor collateral positions, legal entities, currencies, and business lines, intraday liquidity positions, and the specific limits identified above.

### 3. Single-Counterparty Exposure Limits (Large Exposures)

The single-counterparty exposure limits requirement and leverage limits apply to US bank holding companies with \$50 billion or more in assets and Federal Reserve designated non-bank SIFIs.

Starting October 1, 2013, under the proposed rule, no more than 25% of capital stock (regulatory total capital) and surplus (loan and lease loss provision) can be exposed to a single counterparty – company (including subsidiaries), sovereign (US Government excluded) or state. These rules are in addition to the existing investment securities limits and lending limits in the National Bank Act.

Additionally, a bank or non-bank SIFI, with over \$500 billion in assets cannot have more than 10% exposure to other major counterparties (defined as any bank, non-bank or foreign banking organization that is treated as a bank holding company with assets over \$500 billion).

These limits are “global” in nature, including exposures of the institution and their subsidiaries. The rules allow the use of some credit risk mitigants, such as netting agreements for certain types of transactions, most forms of collateral with a haircut, and guarantees and other forms of credit protection.

### 4. Risk Management and Risk Committee Requirements

These requirements cover US bank holding companies with \$10 billion or more in assets, including US-based foreign subsidiaries with assets greater than \$50 billion, and Federal Reserve designated non-bank SIFIs. These institutions are required to establish a risk committee of the board of directors that is responsible for oversight of enterprise-wide risk management.

The risk committee must contain independent directors and at least one risk management expert. Their responsibilities include:

- ✓ Documenting and overseeing the enterprise-wide risk management for foreign and domestic operations
- ✓ Review and approve risk management framework, including:
  - Risk limits for each business line
  - Policies and procedures relating to risk management governance, practices and risk controls
  - Effective and timely implementation of corrective actions
  - Specification of management's authority and independence to carry out risk management responsibilities
  - Integration of risk management and control objectives in management goals and the institutions.

For US bank holding companies with \$50 billion plus in assets and non-bank SIFIs, there are additional requirements which include:

- ✓ Appointment of a CRO reporting directly to the risk committee and CEO and responsible for:
  - Allocating delegated risk limits and monitoring compliance with such limits
  - Establishing appropriate policies and procedures relating to risk management governance, practices, and risk controls
  - Developing appropriate processes and systems for identifying and reporting risks including emerging risk
  - Managing risk exposures and risk controls
  - Monitoring and testing risk controls
  - Reporting risk management issues and emerging risks
  - Ensuring that risk management issues are effectively resolved
- ✓ Creation of a risk committee that reports directly to the Federal Reserve Board and is not part of another committee (joint or sub-committee)

## 5. Stress Testing Requirements

The Federal Reserve has defined two types of regulatory capital stress tests within the legislation – supervisory stress tests and company run stress tests.

The supervisory stress tests are required for US bank holding companies with \$50 billion and above in assets and non-bank SIFIs. The precise nature of these tests is still being defined, but will likely be based on the existing Supervisory Capital Assessment Program (SCAP) and the Comprehensive Capital Assessment Review (CCAR). Company run stress tests are required annually for US bank holding companies, savings and loan holding companies and state member banks with \$10 billion or more in assets and semi-annually for US holding companies with greater than \$50 billion in assets and non-bank SIFIs. These mandated stress tests are not meant to replace internal stress tests that institutions perform as part of their standard risk management practices.

The risk-based capital requirements for savings and loans have not been established at the time of publication, so the stress testing requirements for savings and loan holding companies will be delayed until after these requirements have been established.

The supervisory stress tests are conducted by the Federal Reserve using data provided by the institution and covers off-balance sheet, banking and trading book exposures. The required data can also include, in some cases, information on individual items such as loans and securities held by the company. The Federal Reserve has designated three scenarios – baseline, adverse and severely adverse. An institution is required to have a minimum Tier 1 common risk-based capital ratio of 5% or more under the severely adverse scenario. The process overview for the annual supervisory stress testing cycle is shown in Table 2.

Table 2: Process Overview for Annual Supervisory Stress Testing Cycle

Step	Proposed Timeframe
1. Board publishes scenarios for upcoming annual cycle	No later than mid-November
2. Companies submit regulatory reports and other required information	By mid-November
3. Board completes supervisory stress tests and compiles results	By mid-February
4. Board communicates individual company results to individual companies	By early March
5. Board publishes a summary of the supervisory stress test results	By mid-April

The company run stress tests are performed by the institution and focus on capital adequacy. These stress tests are required annually for \$10 billion institutions, which are required to run the same three Federal Reserve scenarios – baseline, adverse and severely adverse. \$50 billion plus and non-bank SIFIs must perform these tests semi-annually and they must also perform at least one stressed scenario developed by the institution that is appropriate to their business model. The process overview and cycle for company-run stress tests is shown in Table 3.

Table 3: Process Overview of Company-run Stress Tests

Step	Proposed Timeframe
Annual Company-run Stress Test (using data as of September 30) Bank Holding Companies with \$50 Billion + AUM, Banks/FI with \$10 Billion + AUM, and non-bank SIFIs	
1. Board provides scenarios for annual stress tests	No later than mid-November
2. Companies submit required regulatory report to the Board on their stress tests	By January 5
3. Companies make required public disclosures	By early April
Additional Company-run Stress Test (using data as of March 31) Bank Holding Companies with \$50 Billion + AUM and non-bank SIFIs	
4. Companies submit required regulatory report to Board on their additional stress test	By July 5
5. Companies make required public disclosures	By early October

## 6. Debt to Equity Limits

Debt to equity ratio limits will only apply to financial institutions that pose a grave threat to the financial stability of the US and the imposition of the debt to equity requirement is necessary to mitigate that systemic risk. As such, the Federal Reserve will designate those institutions that debt to equity limits apply. The proposed ratio for designated institutions would be no greater than 15 to 1 debt to equity ratio. In essence this acts as an additional leverage ratio, which prevents banks from borrowing excessively to aggressively expand their lending, which was a significant feature of the banking crisis.

## 7. Remediation

Section 166 of the Dodd-Frank Act has a focus on remediation – the actions and restrictions that are imposed on the financial institution for deficiencies in capital, liquidity and leverage ratios, as well as weaknesses in their risk management practices.

As a result of the crisis and deficiencies with a regime primarily based on regulatory capital ratios, the Federal Reserve, backed by Dodd-Frank, is proposing to increase the scope of triggers resulting in remedial actions. The Federal Reserve has defined four levels with thresholds that activate supervisory actions which would apply to US bank holding companies with \$50 billion or more in assets and to non-bank SIFIs.

There are five category triggers that would require a bank to activate the remediation plans:

- ✓ Risked-based capital and leverage ratios
- ✓ Stress test ratios
- ✓ Weakness in risk management and risk committee
- ✓ Deficiencies in liquidity risk management standards
- ✓ Market and debt-based indicators

Failure to meet any of these triggers would result in supervisory action. The threshold levels along with the remediation actions are shown in table 4 below. While some of these triggers may resemble current levels defined in the Federal Deposit Insurance Commission Improvements Act (FDICIA), there are additional triggers and tougher remediation actions with some higher thresholds.

As elsewhere in the Dodd-Frank Act, the Federal Reserve is also proposing a new trigger, based on market and debt based indicators, which the Federal Reserve intends to monitor as early warning signs of deteriorating conditions of a financial institution. These market and debt based indicators can only trigger level 1 remediation action. The proposed indicators are:

- ✓ Moody's Analytics Expected Default Frequency (EDF)
- ✓ Marginal expected shortfall (MES)
- ✓ Market Equity Ratio
- ✓ Option-implied volatility
- ✓ Credit default swaps (CDS)
- ✓ Subordinated debt (bond) spreads

**Level 1** remediation is not triggered by any specific risk-based capital, leverage or stress testing ratio. An institution can meet all the ratios, but if they show any sign of financial distress or material risk management weakness, such that further decline is probable, then they will be subject to level 1 heightened supervisory review (HSR).

**Level 2** remediation is triggered by the failure to meet ratios or multiple deficiencies in risk management practices as outlined in table 4. Level 2 remediation consists of limitations of certain business activities.

**Level 3** remediation is triggered by failure to meet lower ratio limits, if substantial noncompliance in risk management practices, or if the institution's leverage ratio has been at level 2 limits for 2 consecutive calendar quarters. Level 3 remediation consists of strict limitations on certain business activities, limitations on elements of compensation, and possible removal of senior management.

**Level 4** remediation is triggered if level 3 risk-based capital or leverage ratios are not met. Level 4 remediation can result in the liquidation of the institution.

Table 4: Early Remediation Triggers and Summary of Remediation Actions

	Supervisory Actions	Risk-Based Capital/ Leverage	Stress Tests	Enhanced Risk Management and Risk Committee Requirements	Enhanced Liquidity Risk Management Standards	Market Indicators
<b>Level 1</b> Heightened Supervisory Review	Heightened Supervisory Review (HSR)	Tier 1 RBC ratio > 6%, Total RBC ratio > 10%, Tier 1 Leverage ratio > 5%, but has capital structure or planning weaknesses	Exceeds stressed reg. capital ratios, but in noncompliance with Board's capital plan or stress testing rules	Signs of weakness in meeting enhanced risk management or risk committee requirements	Signs of weakness in meeting the enhanced liquidity risk management standards	Median value of any of the company's market indicators exceeds the trigger threshold for entire breach period
<b>Level 2</b> Initial Remediation	Capital distribution and asset growth restrictions. Acquiring controlling interest prohibition. Non-public MOU issued	Tier 1 RBC ratio > 4%, Total RBC ratio > 8%, Tier 1 Leverage ratio > 4.0%	Stressed Tier 1 common RBC ratio < 5%	Multiple deficiencies in meeting the enhanced risk based management and risk committee requirements	Multiple deficiencies in meeting the enhanced liquidity risk management standards	Not applicable
<b>Level 3</b> Recovery	No capital distributions or quarterly asset growth. Required to raise additional capital. Prohibition on discretionary bonus payments and restrictions on pay increases. Potential removal of senior management and limit transactions between affiliates	Tier 1 RBC ratio > 3%, Total RBC ratio > 6%, Tier 1 Leverage ratio > 3% or Institutions Tier 1 RBC, Total RBC or Leverage ratios remain below level 2 for 2 consecutive calendar quarters	Stressed Tier 1 common RBC ratio < 3%	Substantial noncompliance with enhanced risk management and risk committee requirements	Substantial noncompliance with enhanced liquidity risk management standards	Not applicable
<b>Level 4</b> Recommended Resolution	Potential liquidation	Tier 1 RBC ratio < 3%, Total RBC ratio < 6%, Tier 1 Leverage ratio < 3%	Not applicable	Not applicable	Not applicable	Not applicable

## The Challenges of Implementing Sections 165 and 166 of the Dodd-Frank Act

By far the greatest challenges facing institutions when implementing Sections 165 and 166 of the Dodd-Frank Act, and the more recent proposed changes, will be data management related.

A recent survey by Moody's Analytics of larger US financial institutions focused on the Basel III capital, liquidity and leverage rules, which are similar in nature to the proposed Federal Reserve rules. The survey found that over 41% of the respondents believed that data management would be the single biggest challenge for them. This dwarfed the next two highest listed challenges, where 17% of the respondents believed that calculating the new liquidity ratios would be the biggest challenge and the same percentage who believed that updating their regulatory reports would present the biggest obstacle.

At the core of the legislation are the capital and liquidity calculations, as well as stress testing, which are all data intensive.

Complying with the Federal Reserve proposals and the impending, and more stringent, Basel III rules, present many challenges to banks.

Firstly, collecting, enhancing and managing the data to calculate the results and run the stress tests will be challenging for all banks. For institutions which are not Basel II compliant or engaged in the current Federal Reserve stress testing regime, this will be an even greater challenge. While stress testing is used by many organizations for business planning purposes, the proposed stress tests in the Act are essentially an additional risk-based capital measure, thus requiring tighter integration of risk and finance systems and processes. In addition, under Basel III, these are linked as the liquidity ratios use asset risk weighting information (part of credit risk) in their calculations.

Another challenge presented by the Act is that some of a bank's systems may need to be enhanced or replaced to calculate the new liquidity ratios required by the Dodd-Frank Act, as well as the Basel III LCR and NSFR ratios. Calculating large exposure risks (concentration risk) as well as calculating the leverage ratios may also present challenges. The greater scope of the Act, compared to previous regulations, means there are significantly greater reporting demands which again may require that an institution's existing reporting system be replaced or upgraded.

Finally as the Act enhances an institution's risk management practices and systems, this will have an impact on the way it manages its documentation, its models, its limits and its own stress testing requirements.

For non-bank SIFIs there is the added challenge that the calculations have been designed using banking rules. This means that the rules will not be fully aligned to the non-banking sector.

Given the legislation will have a significant impact on how banks manage their data, what is the best approach for institutions when developing the ideal solution?

## Best Practice Steps

### 1. Use a Centralized Risk and Financial Datamart

The integrated and complex nature of the regulations demands that all the critical regulatory data are consolidated into a single datamart, to drive fast accurate calculations and reporting. Using the same datamart to manage stress testing and large exposure monitoring ensures that the results are delivered quickly and accurately, as well as ensuring that the results work with the regulatory capital reports and are fully auditable. This will also drive consistency of results, cost efficiencies, timely and accurate reporting, as well as creating greater confidence in risk management practices.

### 2. Integrate the Regulatory Process

Driving cost out of the Dodd-Frank compliance process is dependent on ensuring that all elements of the regulatory process – data collection, data cleansing, stress testing, the regulatory calculations and reporting – are seamlessly integrated. The use of application mapping technology can be used to integrate into a wide range of back office systems to ensure that the right data is pulled into the datamart at the right time.

An integrated approach, with the complexities of the reporting, capital, liquidity, leverage and exposure regulations as well as the Federal Reserve stress tests embedded in the application and updated as regulations change, delivers the automation needed to drive compliance and cost effectiveness.

### 3. Understand the Big Picture, See the Small Detail

The proposed regulations are not designed as a box-ticking exercise; they are designed to be thoroughly embedded in the relevant business processes. Whether a bank is restructuring its business, reviewing its balance sheet, identifying cost savings or developing new products, it needs to do this with reference to the regulations. Allowing senior management to evolve the business while maintaining compliance demands the ability to see the top level metrics of compliance – the liquidity ratios, the leverage ratio, the concentration ratios for example – as well as the smallest details that underpin these results.

This capability allows senior management to understand the implications of strategic and tactical initiatives at an early stage, enhancing their organization's ability to respond to challenges and opportunities while maintaining compliance.

### 4. Leverage Dodd-Frank Beyond Compliance

While the regulations can be seen as a significant overhead for banks – especially the demands for enhanced capitalization and liquidity – handled correctly, they also offer scope for opportunity.

Given the way that the regulations force banks to take a more comprehensive, deep and consolidated view of all their activities, it gives them an opportunity to better assess risk and understand the business. It helps manage and understand the big picture of the institution's activities, as well as the details, together with all the history and the trends.

Having this information easily at hand, with easy-to-configure business reports (alongside the regulatory reports delivered from the same data set), allows senior management to understand how business units are performing using consistent, up-to-date information. This drives enhanced strategic insight and improved project execution.

Additionally, compliance provides an opportunity to enhance general risk management practices. For instance, a regulatory stress testing framework can be leveraged for other company run stress tests, improving business and strategic planning. Equally a large exposure monitoring infrastructure can be expanded for global exposure monitoring, which can be integrated into trading and origination systems for real-time limits management. More appropriate models can be added and existing models can be better calibrated and validated, providing a better understanding of risk that an institution is taking. Portfolio models can be enhanced, added or integrated with regulatory capital models, to allow regulatory capital to be a constraint, but still allow portfolio optimization on a risk and return basis.

## Conclusion

The Dodd-Frank legislative framework is a significant challenge for even the best prepared banks. However, despite the enormous complexities, banks have options that allow them to master the complexities of the regulations and use them as a platform for enhanced competitiveness and as a source of superior value.

## About Moody's Analytics Solutions for the Dodd-Frank Act

### RiskFoundation™

RiskFoundation is the cornerstone of Moody's Analytics comprehensive enterprise risk management solution for banks. The platform provides the infrastructure needed to implement a world-class risk management system and comply with regulatory guidelines. RiskFoundation included a common datamart optimized for managing risk and delivers business and regulatory reporting capabilities, an administrative console, customization toolkits, grid computing and scenario analysis software that can all be adapted to fit your bank's unique situation.

### RiskAuthority™

RiskAuthority calculates, consolidates and reports your organizations regulatory credit risk, market risk, operational risk, concentration risk and liquidity risk. It offers a truly integrated and comprehensive solution – from centralized data management, fast and accurate capital, liquidity and leverage ratio calculations and integrated regulatory and management reporting. With RiskAuthority you can be confident you have the strongest solution in place to manage an organization's Dodd-Frank requirements, as well local and global Basel I, II and III requirements.

### Scenario Analyzer™

Scenario Analyzer helps banks measure the impact of changing market conditions at the enterprise level – across the entire balance sheet – or on single portfolios, such as commercial and industrial (C&I) and commercial real estate (CRE). These stress testing capabilities help banks comply with regulatory guidelines, including those outlined in Basel III, Solvency II and the Dodd-Frank Act, for regulatory capital and liquidity. Beyond regulatory compliance, Scenario Analyzer allows firms to turn stress testing into a strategic planning tool, capable of consolidating risk data to better understand the impact of strategic decisions under different macroeconomic scenarios.

### **RiskOrigins™**

Moody's Analytics RiskOrigins is an integrated, workflow-driven software platform that allows commercial lenders to streamline and standardize their complete underwriting process for all commercial loan classes, including commercial and industrial (C&I); corporates; commercial real estate (CRE); and small and medium-sized enterprises (SME). RiskOrigins incorporates Moody's Analytics industry-leading risk assessment capabilities and limits management, helping lenders demonstrate compliance to regulators.

### **RiskFrontier™**

RiskFrontier is the portfolio management and economic capital solution trusted by leading financial institutions. It is a scalable platform that identifies a portfolio's risks and opportunities allowing for improved strategic decision making and performance.

### **Services**

Moody's Analytics provides comprehensive professional and advisory services. These services include:

- » Data gap analysis
- » Single obligor, portfolio and correlation model creation, validation and calibration
- » Scenario and stress testing
- » Liquidity and asset and liability management
- » ICAAP
- » Concentration risk and limits management

## **About Moody's Analytics**

Moody's Analytics helps capital markets and risk management professionals worldwide respond to an evolving marketplace with confidence. The company offers unique tools and best practices for measuring and managing risk through expertise and experience in credit analysis, economic research and financial risk management. By providing leading-edge software, advisory services, and research, including the proprietary analysis of Moody's Investors Service, Moody's Analytics integrates and customizes its offerings to address specific business challenges.

---

© 2012 Moody's Analytics, Inc. and/or its licensors and affiliates (collectively, "MOODY'S"). All rights reserved. ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT. All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. Under no circumstances shall MOODY'S have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of MOODY'S or any of its directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if MOODY'S is advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER. Each rating or other opinion must be weighed solely as one factor in any investment decision made by or on behalf of any user of the information contained herein, and each such user must accordingly make its own study and evaluation of each security and of each issuer and guarantor of, and each provider of credit support for, each security that it may consider purchasing, holding, or selling.