

Conforming CVA & DVA Calculations with Guarantee Valuations

**(The History and Use of Credit and Debit Value
Adjustments)**

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History of CVA and DVA in Financial Reporting: FASB Statements-Part I

- June 1998: FAS 133 titled “**Accounting for Derivative Instruments and Hedging Activities**”
- September 2006: FAS 157 titled “**Fair Value Measurements**” (first requirement to apply credit standing concept to fair value measurement)
- February 2007: FAS 159 titled the “**Fair Value Option**” (allowed optional application of fair value measurement including CVA/DVA to certain non-derivatives)

History of CVA and DVA in Financial Reporting: FASB Interpretations and Updates-Part II

- December 2011: ASU No. 2011-11 titled “Disclosures about Offsetting Assets and Liabilities”
- January 2016: ASU No. 2016-01 titled “**Recognition and Measurement of Financial Assets and Financial Liabilities**” required that DVA measurements of non-derivatives be reported in OCI on the Balance Sheet
- November 2002: FIN 45 “**Guarantor’s Accounting and Disclosure Requirements for Guarantees, Including Indirect Guarantees of Indebtedness of Others**” required fair value of 3rd party guarantees

Names of Standards under the New FASB Codification System

Every existing FASB standard, interpretation, and update was incorporated into FASB's new comprehensive codification system and given new identifying code numbers (ASC ##):

Adoption	Effective	Old Number	Old Name	New ASC Nmber
Jun-98	Jun-99	FAS 133	Accounting for Derivative Instruments and Hedging....	ASC 815
Sep-06	Nov-07	FAS 157	Fair Value Measurements	ASC 820
Feb-07	Nov-07	FAS 159	The Fair Value Option	ASC 825-10-05
Dec-11	Jan-13	ASU No. 2011-11	Disclosures about Offsetting Assets and Liabilities	ASC No. 210-20
Jan-16	Dec-17	ASU No. 2016-01	Measurement of Financial Assets and Liabilities	ASC 825-10-45-5
Nov-02	Dec-02	FIN 45	Guarantor's Accounting and Disclosure Requirements....	ASC 460

Credit Risk: Will the “Bubble” Burst?

(July 2007 Article in Garp’s *Risk Review*)

- **Case Study:** The following pages discuss the CreditGrades case study leading up to the Great Recession. These comments and charts are adapted from my July 2007 on credit risk.
- **Copies Available:** Copies of this article, along with all of my other GARP articles, can be found at my campaign website: <https://www.gordonforjustice.com/>
- **Background for CVA & DVA:** This discussion of credit risk analysis conducted just prior to the Great Recession of 2008 provides background for the push to include CVA and DVA in fair value measurements

The CreditGrades System (cont.)

(an example of credit risk analysis from the Great Recession)

- **CreditGrades:** The CreditGrades system was established in 2002 by JP Morgan, Deutsche Bank, and Goldman Sachs (the “Endorsers”), as a financial industry model for the calculation of credit risk. Their stated goal was to create an open, transparent standard for measuring quantitative credit risk.
- **RiskMetrics:** The group that developed the CreditGrades system, the RiskMetrics Group, is the same group that developed the VAR model. In 1992, J.P. Morgan provided the RiskMetrics VAR methodology, which had been developed within JP Morgan, to the marketplace.
- **Price Discovery:** According to their “Technical Document,” logical applications of the [CreditGrades] model include “...price discovery for illiquid firms, monitoring across a large array of firms, and the investigation of relative value opportunities across the credit and equity markets.”

The CreditGrades System

(an example of credit risk analysis from the Great Recession)

- **Debt Modeled as an Option:** CreditGrades™ relied upon the liquidity of equity markets to provide early warning signs of credit risk. According to the “Technical Document,” the use of equity market volatility as the best gauge for future changes in credit quality is “... based on the work of Black and Scholes (1973) and Merton (1974) who observed that both equity and debt can be viewed as options on the value of a firm’s assets, implying that equity option pricing techniques can be adapted for use in assessing credit.”
- **The Charts:** Over the five year period 2002-2007, the CreditGrades™ metric applied to a divergent group of industries steadily fell. The reduction in an industry’s “Credit Grade,” which is stated in terms of basis points charged over the risk-free interest rate, implied that: (1) the credit quality of all these industries had steadily improved; and (2) their associated probabilities of default had steadily declined. In this case, a picture is worth a thousand words, and I have here reproduced the industry-wide “Credit Grades” measured as of 6/13/07 for companies in the following industries: Energy; Utilities; Industrial; Technology; and Communication.

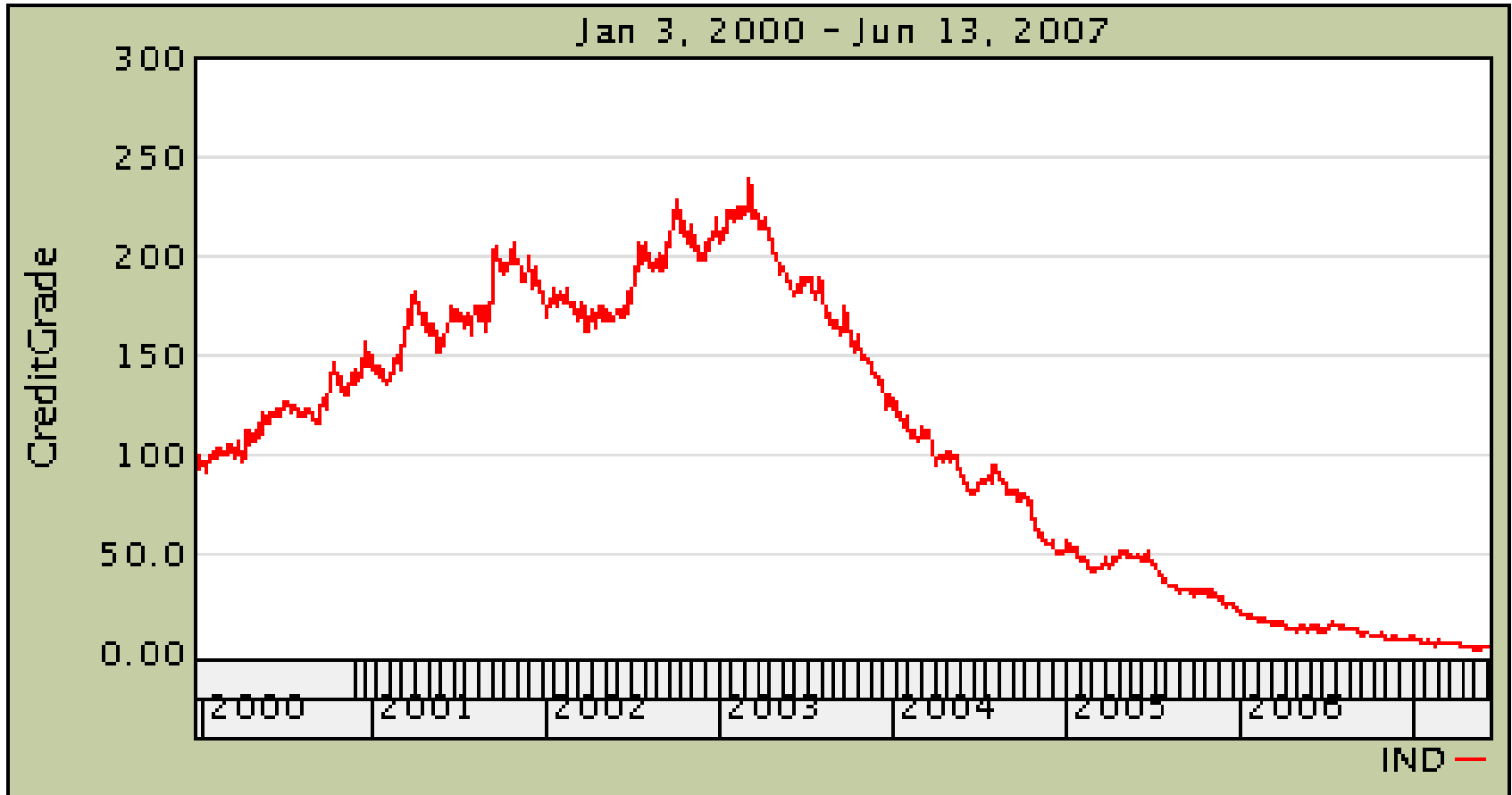
CreditGrades Historical Charts by Industry Sector



CreditGrades Historical Charts by Industry Sector



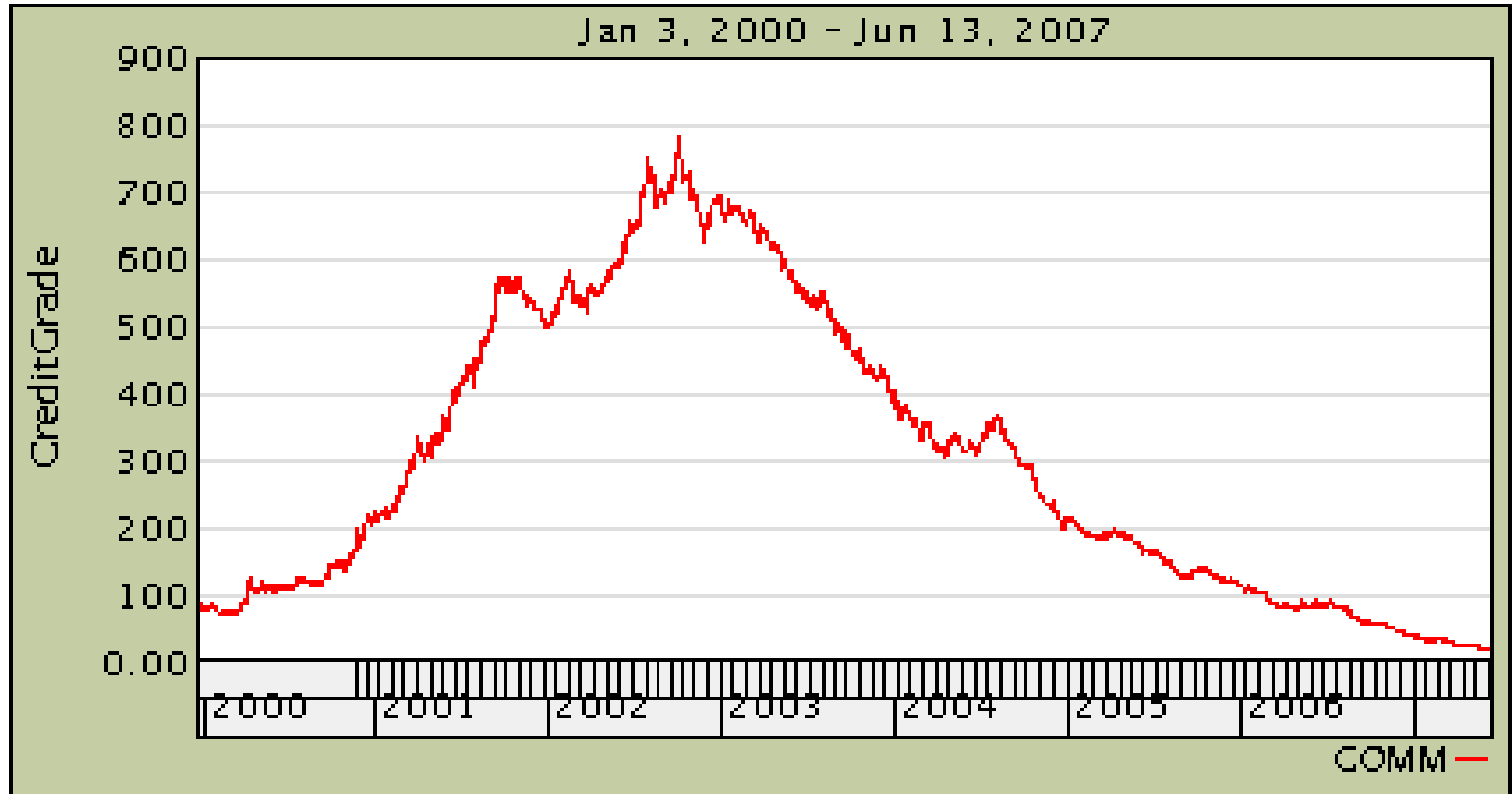
CreditGrades Historical Charts by Industry Sector



CreditGrades Historical Charts by Industry Sector



CreditGrades Historical Charts by Industry Sector



THE CREDITGRADES SYSTEM

(WHAT DO THESE CHARTS SUGGEST?)

- **A Picture is Worth a Thousand Words:** “Even a casual review of these charts should give all risk officers, credit managers, and financial analysts pause. When was the last time you saw such universal agreement on any substantial financial question in the marketplace? Based on these charts, there is almost no measurable credit risk in any of the major industries, there is almost no probability of default, and there should logically be no “cost” adder for credit.” *July 2007*
- **Prediction from July 2007:** “Though I hesitate to make this statement, these charts have the appearance of a classic financial boom (though in an “upside down” form of presentation). In other words, the credit risk that is apparent in the marketplace, as measured by CreditGrades, has declined as far as it can go in the downward direction, and credit risk cannot decline below zero. As a result, there is only one direction that credit risk can go in the future, and that is up. The real question then is not whether it will go up, which I take to be a given, but rather how quickly it will go up.” *July 2007*

Use of Guarantee Valuation Methodology to Calculate CVA and DVA

- January 2008: Publication of my “**How to Value Guarantees**” in GARP Risk Review journal (also available at campaign website):
 - <http://garp.org/#!/risk-intelligence/all/all/a1Z1W000003rJ3Z>
- Two Underlying Principles of Guarantee Valuation:
 - *Value of Guarantee (or CVA/DVA Discount) = Value of Risk-Free Transaction - Value of Risky Transaction*
 - *Value of Guarantee (or CVA/DVA Discount) = Present Value of the Probability-Weighted Estimated Cash Flows*

FASB's Fair Value Conceptual Framework for Fair Value

FASB's Three Level Hierarchy for Fair Value Measurement:

- *Level 1: Models and values based on **external, quoted prices in active markets for identical assets/liabilities***
- *Level 2: Models and values based on **external, quoted prices for similar assets/liabilities (with adjustments)***
- *Level 3: Models and values based on **internal inputs***

Guarantee Valuation Measurement

Three Level Hierarchy

Three Level Hierarchy Proposed in January 2008
Article for **Guarantee Valuation**:

- *Level 1: **Market Value**—fee received or difference in market value of guaranteed debt and non-guaranteed debt*
- *Level 2: **Credit Spread**—difference in present value of the transaction's cash flows when discounted at the guaranteed and risk rates*
- *Level 3: **Contingent Claims**—present value of the probability-weighted estimated cash flows*

CVA & DVA Calculations

Adjustments, Offsets, and Special Case

- **Collateral:** When calculating CVA/DVA for an asset or liability, the final values must be adjusted for any collateral held as a credit risk reduction
- **Guarantees:** When calculating CVA/DVA for an asset or liability, final values must be offset by any guarantees that reduce the measured credit risk
- **Risk Free Assumption:** When calculating the CVA/DVA for an asset or liability, one should assume that the difference is versus a risk free transaction (whereas a guarantee valuation can be made either in reference to a perfect or non-perfect guarantor)

Differences Between CVA/DVA Calculation and Guarantee Valuation-Part 1

Limited Application of FIN 45

- FIN 45 Guarantee Valuation **only applies to guarantees issued by an entity guaranteeing third party obligations**—does not apply to guarantees issued for wholly owned subsidiaries nor to received guarantees
- Though FIN 45 was of limited application, the guarantee valuation methodology proposed in my January 2008 article was of **general application** for use with any guarantee

Differences Between CVA/DVA Calculation and Guarantee Valuation-Part 2

Application of CVA to Assets and DVA to Liabilities

- Both CVA and DVA?: Initial questions about whether CVA/DVA measurement would **apply to both assets (the CVA of counterparties) and debts (the DVA of an entity)** was removed through subsequent FASB updates and reconciliation with international standards
- Inclusion of CVA/DVA in Fair Value Measurement: Initially, CVA/DVA was not mentioned in FAS 133, but this was **corrected in FAS 157**, which introduced the credit standing concept

Differences Between CVA/DVA Calculation and Guarantee Valuation-Part 3

Limits on Application of CVA/DVA

- Problems with Certain DVA in the Income Statement: During the period following the Great Recession, several financial companies reported **counter-intuitive and surprising “profits”** due to increasing amounts of DVA
- What Caused the Problem: The increasing DVA was due to the **deterioration of the creditworthiness of these entities’ own debts**, which were valued under the Fair Value Option
- Requiring Certain DVA in the Balance Sheet: As a result FASB issued ASU No. 2016-01 required **DVA for non-derivatives measured under the Fair Value Option** to be reported in **OCI within the Balance Sheet**, and not in the Income Statement

Unified Approach to Market and Credit Risk

- Goals of Consistency
 - Applying a consistent three level hierarchy to both CVA/DVA calculations and guarantee valuations is appropriate in order to conform them with the overall **three level hierarchy** established by FASB for Fair Value measurement generally
- But Not Too Consistent
 - **Real differences** in the quality of risks (e.g., between market risks and credit risks) should not be minimized while trying to achieve consistency