# A New Regulatory Direction: Using Fair Value Principles to Price Bank Loans and Calculate Loan Loss Reserve Adjustments

Implications of IASB-FASB Convergence on Loan Accounting for Banks and Alternative Investment Managers

Axiom Valuation

# Dr. Stanley J Feldman

*Chairman and Co-founder*

Axiom Valuation Solutions
stan@axiomvaluation.com
781-486-0100 x204

Stan is the chief valuation officer for the company, and has overall responsibility for the company's signed valuation reports and for the company's valuation analysis systems. He directly manages the company's valuations for financial reporting and fair value projects.

Stan has consulting and academic experience in the valuation of privately held and publicly traded firms, along with extensive real world experience. He is an expert in the valuation of complex financial securities, including thinly traded equity and fixed income instruments, and public and privately held businesses. He was a member of the Financial Accounting Standards Board's (FASB) Valuation Resources Group, an external advisory committee on valuation issues.

Stan received a B.A. in Economics from the City University of New York, Hunter College, a M.A. in Economics from the New School for Social Research, and a Ph.D. in Economics from New York University.

# Thomas Klepsch

*Senior Partner Axiom Valuation Solutions Europe*

Axiom Valuation Solutions Europe
tklepsch@axiomvaluation.com
+49 5731 1538316

Thomas is a Senior Partner of Axiom Valuation Solutions Europe (AVSE) and the Vice Chairman of the European Bond Commission.

Thomas specializes in developing innovative products and services for the financial industry: Products being introduced are among others Tripartite Repo Services, Agency Fund Trading, Performance Measurement and Attribution, Market Risk Reporting, Liabilities Modeling, Collateral Management, Exposure Monitoring.

Thomas was a Vice President at State Street Bank where he specialized in product development for risk management, collateral management, fixed income analytics, and performance measurement. Previous to State Street, he was a Director at Deutsche Bank where he focused on product development in the performance measurement and attribution area, as well as market risk reporting. He also worked as a Senior Manager at Clearstream Banking and as a Financial Market Specialist for the US Embassy in Germany.

Thomas received a Dr. phil in Political Science, Economics, and Socialogy from Rheinische Friedrich-Wilhelms-Universitat Bonn.

# About Axiom Valuation Solutions

Axiom Valuation Solutions is a nationally recognized financial security and business valuation firm. We have conducted valuation assignments for clients throughout the U.S., Europe and Asia. We regularly conduct fair value assignments for financial institutions in terms of fair valuing portfolio assets and liabilities as well as acting as an advisor and assessing whether internal transfers between funds meet the fair value standard. Our Co-founder and Chairman, Dr. Stanley Jay Feldman, was a member FASB's Valuation Resource Group, an advisory group to FASB on fair value issues.

Axiom Valuation Solutions Europe (AVSE) provides a comprehensive range of expert valuation services for private businesses, illiquid securities, fixed income portfolios, intangible and tangible assets, and other hard-to-value assets. We value thinly traded public companies and divisions of public companies for a variety of purposes.

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# Today's Webinar Will  Answer the Following  Questions

# Global Financial Reporting Standards are Changing

Global Financial Regulations and Financial Reporting Standards are Changing:
**Why ?**

- Focus on measuring systemic risk (SR) of the global financial system.
- Minimizing the consequences of both expected and unanticipated destabilizing economic and financial events.
- Banks, and to a lesser extent, credit and loan funds are at the center of the credit transmission process.
- SR is to be minimized when:
  - Bank reserves reflect expected credit losses
  - Financial institution equity is large enough to cushion unexpected shocks

# Impacts (1) : Loan Loss Reserves to be build upon expectations

Changes in the accounting rules for loans in the banking book

Background: Currently, banks do not have to reserve for risky loans until there are signs of a loss. Reserves were criticized as being "too little, too late" during the global crisis.

Accounting Boards have different proposals

FASB's proposal would require businesses to look at both past experience and reasonable estimates of future losses, and reserve for those losses the day a loan is originated.

The IASB's proposal would only make banks consider losses expected over the next 12 months, unless a loan's credit has deteriorated significantly. If that is the case, reserves would have to be made for the full expected loss.

# Impact (2): Call for independency – Example AIFMD

The Directive states:

"AIFMs shall ensure that the valuation function is either performed by:

- an external valuer, being a legal or natural person **independent** from the AIF, the AIFM and any other persons with close links to the AIF or the AIFM; or
- (b) the AIFM itself, provided that the valuation task is functionally **independent** from the portfolio management and the remuneration policy and other measures ensure that conflicts of interest are mitigated and that undue influence upon the employees is prevented."

**Independence** means that that there is a tangible separation between investment decision making and asset valuation

- Different people, potentially separate reporting structures

# Accounting Value, Economic Value and Fair Value

1. Accounting value, AV, is the amortized value of the loan or security less any impairment charge.

2. Fair value and economic value are closely related concepts. This is so because:
   - Economic value is what informed market participants would value the security at using all available information about the security in question at the valuation date.
   - Fair value is the price that would emerge in a hypothetical transaction taking place in a primary market between informed market participants (those using EV as the basis of the transaction) under normal market conditions.

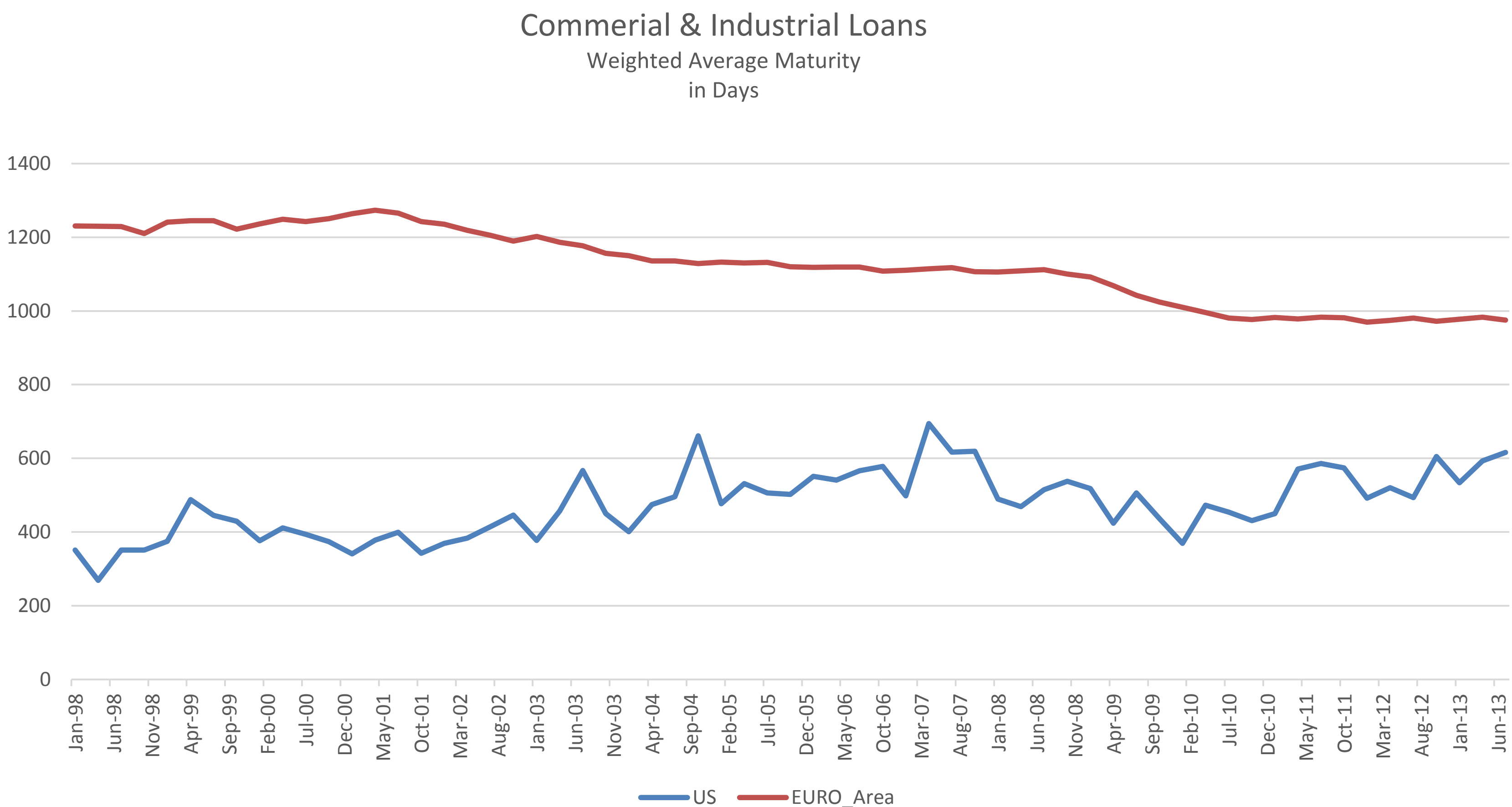
# Accounting Value, Economic Value and Fair Value

- FV = Economic Value ( Solvency Value - Expected Loss) – illiquidity characterizing a normal market
- Mark-to-Market = FV – market irregularities = last available price
- AV ( accounting value ) = Book Value less loan impairment
- Net Carrying Value = amortized value –expected loss

# The Move to an Expected Loss Basis Reflects Fair Value Principles

| Current Standard | Book Value (Amortized Cost) | Minus | Loss Reserve: Incurred Cost | Equals | Net Balance Sheet Value |
|---|---|---|---|---|---|
| New Standard: U.S | Book Value (Amortized Cost) | Minus | Expected Loss: Life of Asset | Equals | Adjusted Balance Sheet Value |
| New Standard: Europe | Book Value(Amortized Cost) | Minus | Expected Loss: 12 months ahead | Equals | Adjusted Balance Sheet Value |

# Average Maturity of Loans in Europe and U.S.



# Loan Value Response to New Information

| Situation | Change in AV | Change in EV/FV |
|---|---|---|
| A. No new information: probability of default (PD) unchanged | No change | No change |
| B. At initiation: PD default unchanged over remaining life of loan | | |
| 1. New information arrives: Credit markdown, PD increases | No change | Decrease |
| 2. New information indicates: Credit markup, PD declines | No change | Increase |
| C. At initiation: PD increasing over remaining life of the loan | | |
| 1. New information: Credit improvement, PD declining | No change | Increase |
| 2. New information: Credit deterioration, PD increasing | No change | Decrease |

Case Study:

*Developing Loss Reserve from Fair Value*

# Fair Value and Expected Loss Reserves

**Some theoretical considerations:**

**Expected Loss Reserves (ELR) needs to be constructed from the default probability (p) weighted difference between the recovery value (RV) and the book value (BV) of the loan. ELR = p*(BV-RV).**

**The Axiom Approach towards to determine RV:**

Our credit ratings are nothing else than an alpha-symbolic expression of the default probability (p) per annum.

The recovery value (RV) is embedded as possibility within all Fair Value (FV) calculations. The FV of any financial claim is nothing else than the probability weighted output of a loan staying current or becoming impaired.

The Axiom FV calculations is taking the liquidity premium and the callable premium into account in order to approximate the market value of a loan. Those elements are essential for FV calculations in a marked-to-market regime, but are of none importance for loss reserve accounting. Those loans are not for trading.

Hence, we need to calculate the Economic Value of a loan in order to derive its loss reserve requirements..

# Case Study: Loss Reserve

| | XYZ First Lien Term Loan |
|---|---|
| Issue Rating | BBB |
| Coupon Rate | LIBOR + 400 bps |
| Maturity | 09/30/2018 |
| Industry Sector | Chemical |

**Probability of Default**

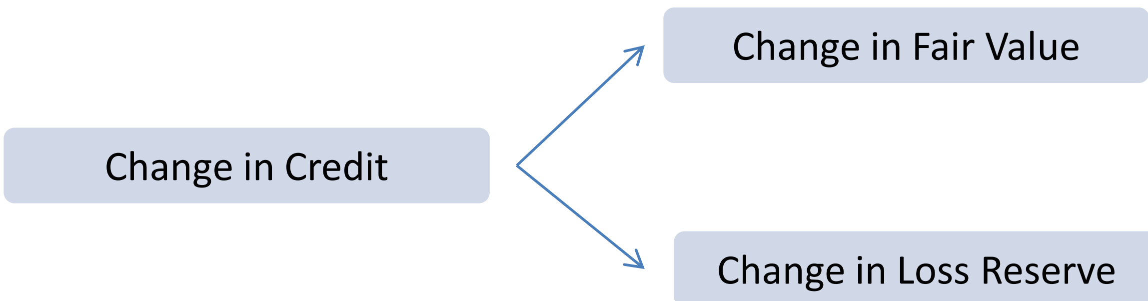
| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|
| BBB | 0.52% | 1.65% | 2.98% | 4.40% | 6.01% |

**Initial Loss Reserve Accounting**

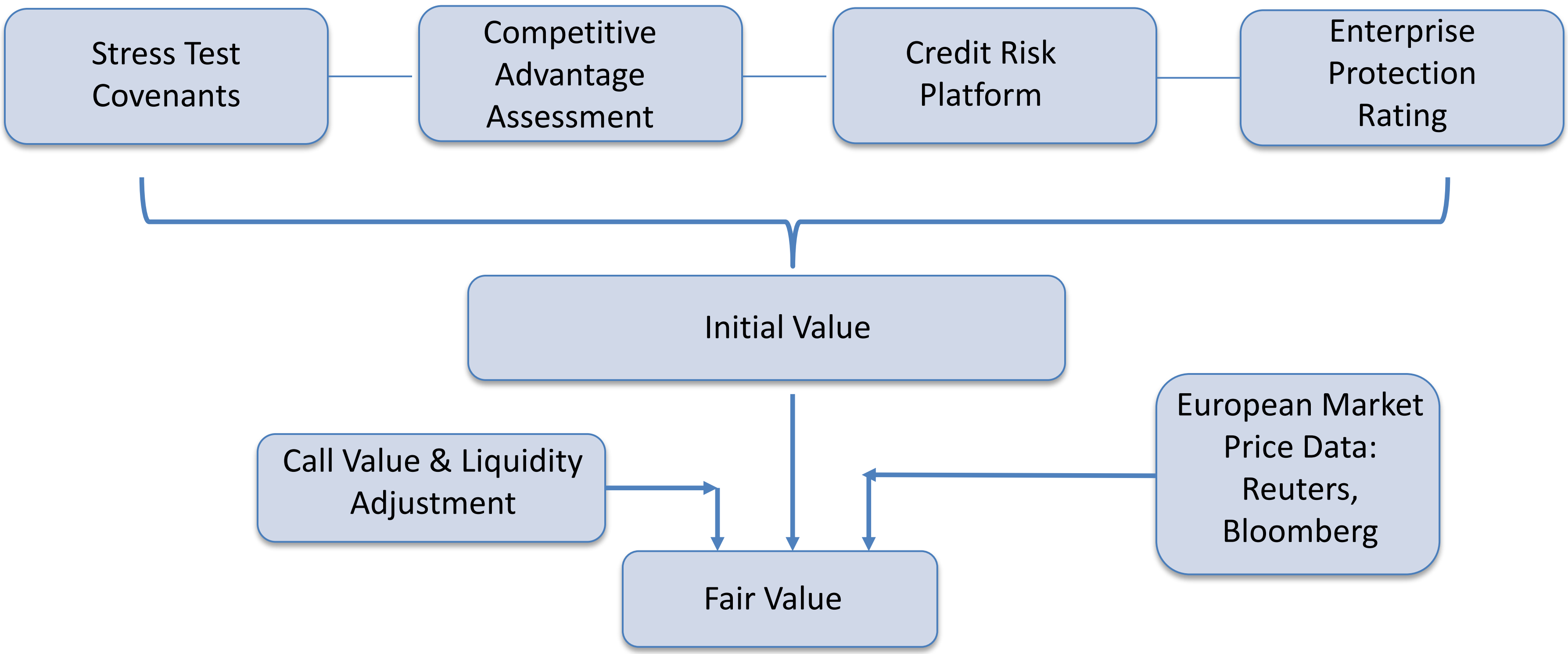
| **Recovery Rate** | | **0%** | **40%** | **60%** |
|---|---|---|---|---|
| Book Value of the Loan | | $10,000,000 | $10,000,000 | $10,000,000 |
| -Allowance for Loan Losses | | ($601,171) | ($360,703) | ($240,468) |
| Net Carrying Value | | $9,398,829 | $9,639,297 | $9,759,532 |
| | | | | |
| Fair Value of the Loan | $10,000,000 | | | |

# Case Study: Credit Event

Assume 3 months later, something goes wrong with the borrower company which leads to a major credit change.



# Case Study: Axiom Fair Value Process Overview



# Case Study: Income Approach – Loan Pricing Credit Platform

**Firm Financials**
- Income Statement
- Balance Sheet
- Cash Flow
- Principal & Interest

**Financial Market Data**
- Financial & Return data for public companies
- Calculation of systematic risk for private firms

**Credit Rating Platform**

## XYZ Term Loan Debt Credit Rating

| Factor | Value |
|---|---|
| Free Operating Cash Flow / Revenue | 0.35 |
| Unlevered Beta | 0.81 |
| Debt to Equity Ratio | 3.25 |
| Revenue | $9,654,909 |
| Industry Dummy | Industrial |
| Debt Rank | 1st Lien |
| Other Characteristic | Callable |

Debt Credit Rating: CCC+

# Case Study: Fair Value Price

## Final Credit Rating

| | Score | Interpretation |
|---|---|---|
| Covenant Stress Analysis | 75% | Adequate |
| Enterprise Value Debt Coverage | 1.01 | Adequate |
| Competitive Strength Rating | 3 | Adequate |
| Axiom Price Consistent with Market Pricing Data | N/A | |
| Debt Credit Assessment | CCC+ | |
| Overall Credit Rating Equivalent | CCC+ | |

Final Credit Rating: CCC+

5-Year CCC+ Rated Spread

5-Year Risk Free Rate

Discount Rate: 8%

Cash Flows

Call & Liquidity Adjustment

Final Price: 85.5

# Case Study: Net Carrying Value vs. Fair Value

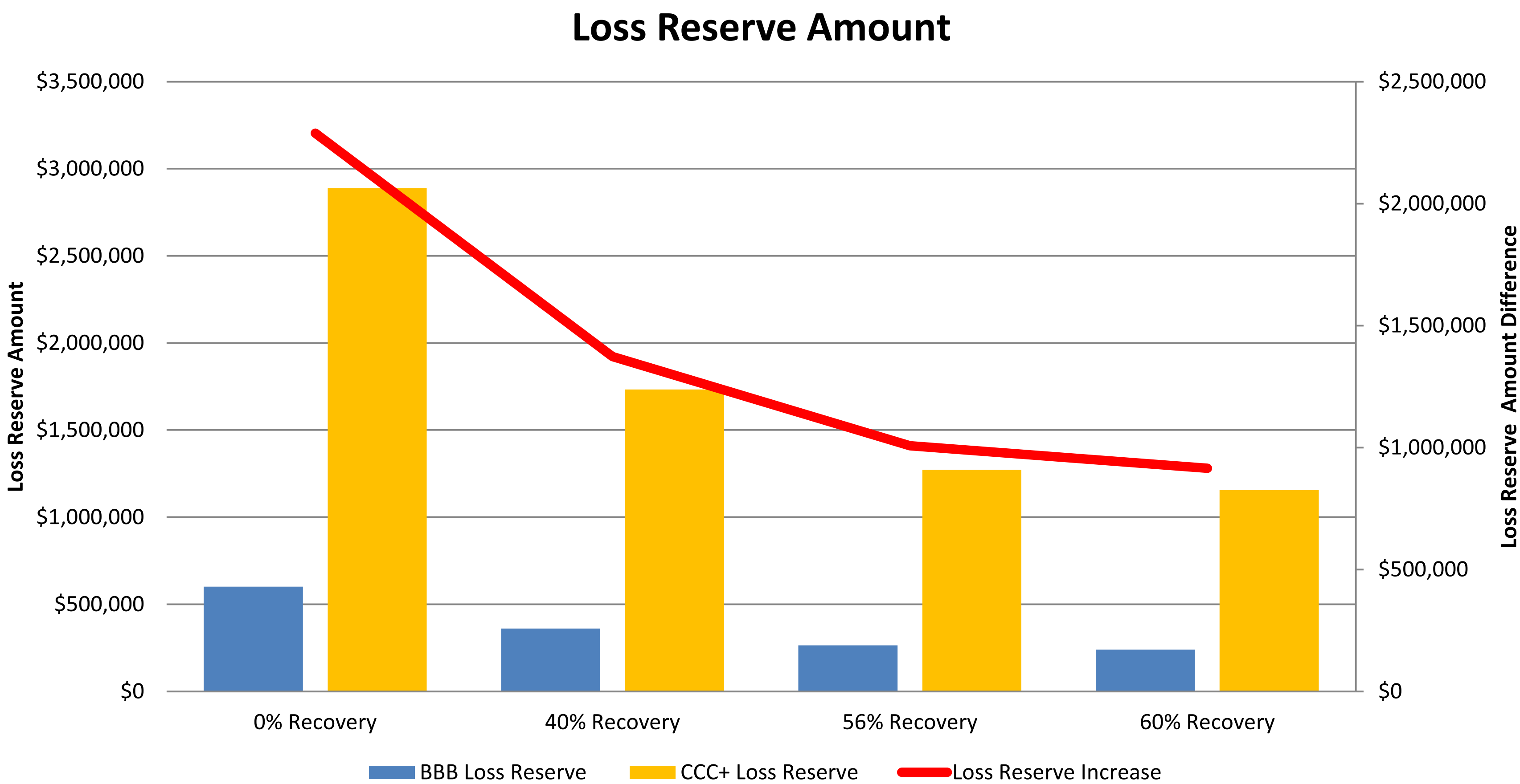
**Probability of Default**

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|
| CCC+ | 5.82% | 11.77% | 17.79% | 23.43% | 28.89% |

**New Loss Reserve Accounting**

| Recovery Rate | 0% | 40% | 56% | 60% |
|---|---|---|---|---|
| Book Value of the Loan | $10,000,000 | $10,000,000 | $10,000,000 | $10,000,000 |
| -Allowance for Loan Losses | ($2,889,411) | ($1,733,647) | ($1,271,341) | ($1,155,764) |
| Net Carrying Value | $7,110,589 | $8,266,353 | $8,728,659 | $8,844,236 |
| | | | | |
| Economic Value of the Loan | | | $8,728,659 | |
| -Adjustment | | | ($228,659) | |
| Fair Value of the Loan | | | $8,550,000 | |

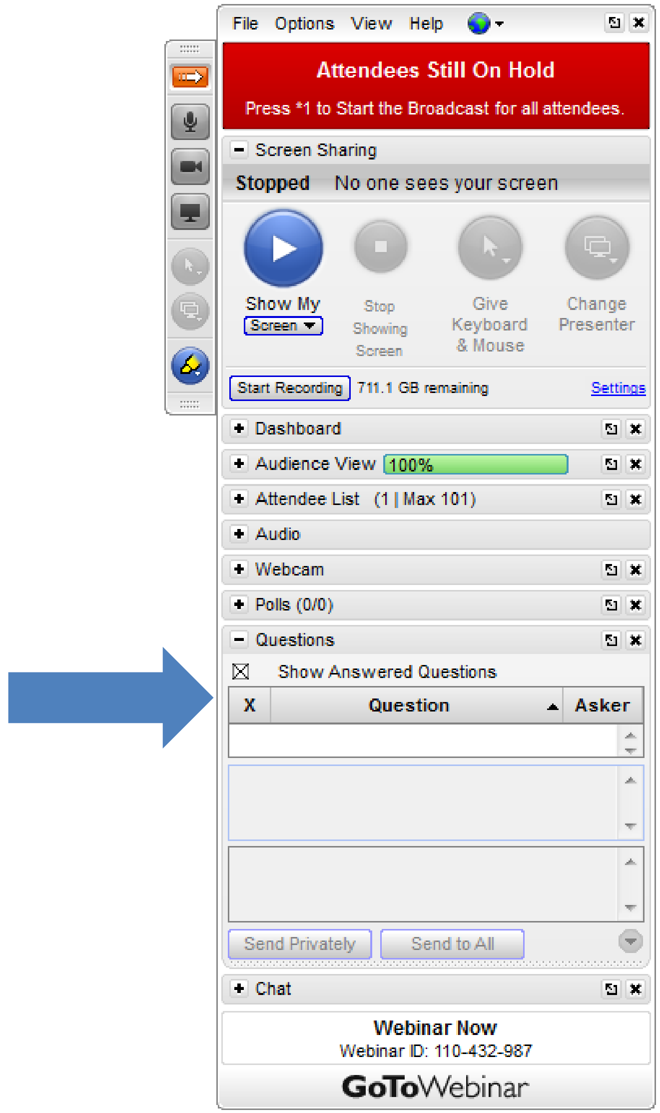
# Case Study: Loss Reserve



# Some Final Thoughts

1. The financial crisis has had a lasting impact on how we account for and value loans.
2. In order to avoid "too little, too late" loss reserves will be based on expected loss rather than incurred cost.
3. Expected loss is based on "fair value" principles since its measure is not a bank's idiosyncratic view of the credit but based on the way an informed market participant would establish the credit risk. Put differently, the same calculus that was used to establish the credit risk at initiation of the loan should be the calculus used going forward.
4. Investment funds holding bank loans and other fixed income securities must fair value their positions while banks do not. However, under the expected loss model the following is true: If a bank and an investment fund hold the same loan then any change in the loan's credit risk will result in the same value change for loan held by the bank and the investment fund in the absence of adjustments for lack of liquidity.
5. Axiom's credit rating platform offers a unique and cost effective solution to measuring changes in credit risk and the resulting changes in economic and fair values.
6. Being able to stress value conclusions is a key strength of Axiom's system. Both IFRS, the European Directive on Alternative Investments and bank oversight entities require subject financial institutions to be able to stress test assumptions surrounding the values of underlying assets.

# Questions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