



RUTTER ASSOCIATES LLC

Three Lessons of the Financial Crisis

November 17, 2017 Presentation
at

Rutter Associates Autumn 2017
Seminar

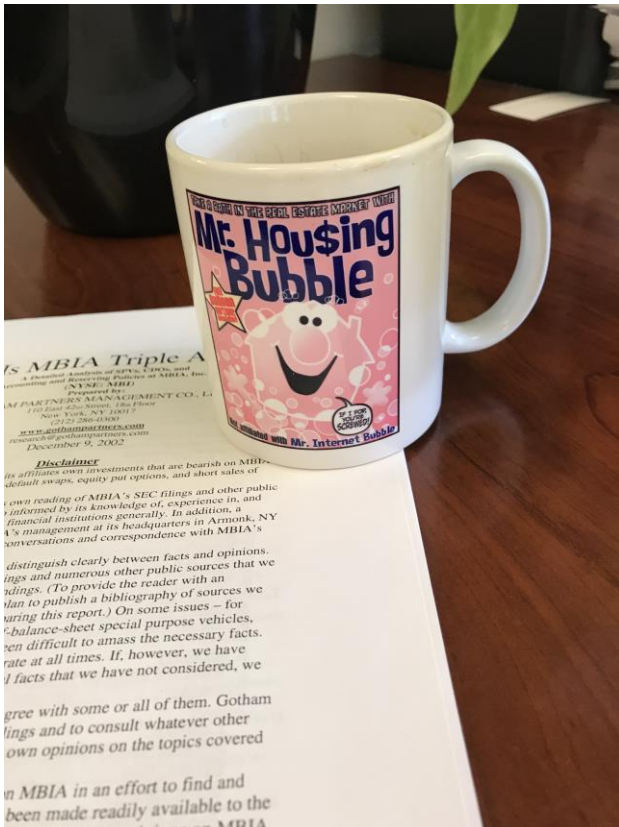
by

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The First Lesson of History

The first lesson of history is:

“we do not learn from history and the consequences of this failure are tragic”

- The late Professor Rufus J. Fears of the University of Oklahoma

The Key “Oh **** (darn)” Moments

- June/July 2006: Housing prices peak.
- **April 2007**: Subprime mortgage lender New Century Financial files for Chapter 11 bankruptcy protection.
- **July 2007**: Liquidation of two Bear Stearns subprime hedge funds.
- **August 2007**: American Home Mortgage Investment Corp files for Chapter 11 bankruptcy protection.
- **March 2008**: Bear Stearns succumbs to the subprime crisis
- **September 15, 2008**: Lehman Brothers files voluntary petition for bankruptcy after 158 years in business
- **September 16, 2008**: AIG’s inability to post required collateral against credit default swaps it had written drives the firm into insolvency.

Where Were You During the Financial Crisis?

- I was running Risk Analysis and Capital Planning at a Financial Guarantor (not a great resume booster)
- Part of an executive team that took many steps to:
 - Raise capital (Successfully – See “Confidence Game” pp. 265-266)
 - Purchase our insured residential mortgage-backed securities (effectively extinguishing the wraps) at fire-sale prices that were below reasonable recovery values
 - Commute a number of our policies on ABS CDO tranches that were significantly out-of-the-money (at prices fully reflective of our DVA)
 - Source from the U.S. Treasury Department Troubled Asset Relief Program (TARP) funds that were ultimately denied.

Three Lessons

- Lesson Number 1: **Recognize that This Time *Is Not Different***
- Lesson Number 2: **Recognize And Avoid Adverse Selection And Informational Asymmetries**
- Lesson Number 3: **Recognize the Importance Of An Empowered, Independent And Integrated Risk Management Function**

Lesson Number 1: This Time *Is Not* Different

- UC Berkeley Professor J. Bradford DeLong: “Nearly every long economic expansion in the United States generates intellectual currents claiming that the boom-bust cycle is over, that there is a ‘new economy’ and claims of a ‘new economy’ have always proven wrong.”
- In 1969 Arthur Okun (Lyndon Johnson’s Chairman of the Council of Economic Advisors) wrote, “More vigorous and more consistent application of the tools of economic policy contributed to the obsolescence of the business cycle pattern and refutation of the stagnation myths”.

Lesson Number 1: This Time *Is Not* Different

- Believing that the business cycle was effectively dead after a “great moderation” and observing that there had not been a nationwide collapse in housing prices or mortgage default crisis since the Great Depression, municipal bond insurers began insuring BBB tranches of subprime and Alt-A securities of geographically diverse mortgage loans **sometime around the year 2000**. They believed that there *could not be* a nationwide crack in housing prices outside of a depression scenario. When the growth in demand for insurance on MBS tranches stalled, they turned to insuring “triple A” tranches of ABS CDOs.
- Of course this time was not different - Case-Shiller 20-City housing price index fell about 35% from its July 2006 peak and remains more than 10% below its peak today in inflation adjusted terms.

Lesson Number 1: This Time *Is Not* Different – Preventative Measures

- Suspect that a bubble is about to burst when
 - Hearing talk of “new paradigms”
 - Hearing arguments that “this time is different”
- Maintain the discipline to run the improbable but not impossible/implausible scenarios that “could not possibly happen or happen again” through your portfolio of assets and liabilities to make sure your enterprise can survive the simulated outcomes.

Lesson Number 2: Recognize And Avoid Adverse Selection And Informational Asymmetries

- Adverse selection – risk that the insured’s superior information about the risk posed to the insurer leads the firm to take on unacceptable risk or to take on insurable risk at unprofitable prices
- An example:
 - AIG sold **\$62.1 billion** of protection in the form of CDSs on tranches of mortgage-related ABSCDOs to the smartest market participants in the world **and lost \$32.5 billion**.
 - Less sophisticated market participants used rules of thumb and simple tables about default probabilities and recovery rates.
 - More informed investors that underwrote many of the ABSCDOs and purchased the protection from AIG built advanced econometric models, ran 35% and other house price depreciation scenarios through them, and understood that the risk was greatly elevated. Some of these profited from short positions.

Lesson Number 2: Recognize And Avoid Adverse Selection And Informational Asymmetries – The Derivatives Market

- Asymmetry of information in the derivatives market was highlighted by the Lehman Brothers bankruptcy and default on its over-the-counter (OTC) derivative contracts.
 - An alarming number of derivative end users have little to no knowledge of how their contracts were priced at inception or of the ex-ante risk/reward profile of the contracts into which they enter.
 - Many derivative end users do not know how their contracts should be priced for replacement purposes in the event of a counterparty default or for exit purposes when the need for a hedge diminishes or a speculative target is achieved.

Lesson Number 2 – Recognize And Avoid Adverse Selection And Informational Asymmetries – Preventative Actions

- Avoid taking risks that you do not understand as well as does the firm offering to transfer them to you.
- ***Seek out expert help*** if you cannot:
 - Run the models and risk factors that drive OTC derivative pricing
 - Run simulations that reveal risk-return profiles
 - Understand and model newer pricing factors, such as credit valuation adjustment, funding valuation adjustment and others, that go into determining fair valuation
- **Or:**

Lesson Number 2 – Recognize And Avoid Adverse Selection And Informational Asymmetries – Preventative Actions

Simply avoid complicated or exotic securities and derivative products in favor of simpler and cheaper alternatives for which price discovery is ample and risk/reward structures are easier to understand.

Lesson Number 3: The Importance Of An Empowered Independent And Integrated Risk Management Function

- Key Risk Management Functions:
 - Risk management staves off the costs of bankruptcy.
 - Risk management assures the availability of capital to undertake positive net-present-value investments.
 - Controlling the “yield to bonus” mentality. Risk management mitigates the moral hazards of the asymmetric payoff profile to corporate risk takers. This is the *trader’s option* or *principal-agent problem*, whereby an individual can realize virtually unlimited personal gain from winning bets while at the very worst losing his or her job for value-destroying (or, indeed, firm-destroying) losing bets.

Lesson Number 3: The Importance Of An Empowered Independent And Integrated Risk Management Function – True-Life Examples of Risk Management Failures

- At a financial institution over-exposed to Subprime and AltA:
 - The CEO prohibited the head risk manager from presenting any scenarios of declines in housing price indexes to the credit committee considering mortgage-related transactions.
 - The risk manager was chastised for reporting expected losses in the existing mortgage portfolio because it might affect the morale of the transacting team.
 - The risk manager was forced to rescind an invitation to a nationally recognized expert on housing and mortgage-backed securities, because she was going to talk about what she believed was a housing bubble about to burst.
 - Executive management consistently overrode the risk manager's "no" vote on adding mortgage credit risk exposure.
- Empowerment and independence of the risk management team might have saved this institution from ruin.

Lesson Number 3: The Importance Of An Empowered Independent And Integrated Risk Management Function - True-Life Examples of Risk Management Failures (continued)

- At AIG:
 - According to the *Wall Street Journal* (March 27, 2009), the CEO explained at a congressional hearing, “We had risk-management practices in place. They generally were not allowed to go up into the financial-products business.”
 - The Office of Thrift Supervision reported that the financial products unit “was allowed to limit access of key risk control groups while material questions relating to the valuation of the [swap portfolio] were mounting” and that among those key risk control groups was the office of the CRO.
 - Had the risk management function been integrated across the company, a costly insolvency issue might well have been avoided.

Lesson Number 3: The Importance Of An Empowered Independent And Integrated Risk Management Function – True-Life Examples of Risk Management Failures

(continued)

- At JPMorgan Chase:
 - In the 2012 London Whale episode, losses incurred and fines paid amounted to \$7 billion.
 - The risk management failures that led to the loss were:
 - According to an internal organizational chart published by a U.S. Senate subcommittee, the CRO reported directly to the CIO (U.S. Senate [2013]) creating a lack of independent oversight in the CIO silo.
 - Risk management in the CIO office was not integrated with centralized corporate-wide risk management.
 - In the face of substantial Value at Risk (VaR) limit breaches, the CIO's traders and quants implemented a new VaR model that cut the reported VaR in half. The model was not properly validated, and subsequent back testing revealed errors that would have been detected if validation had been done earlier.

Lesson Number 3: The Importance Of An Empowered Independent And Integrated Risk Management Function – True-Life Examples of Risk Management Failures

(continued)

- The risk management failures are laid out in detail in a JPMorgan Chase report (JPMorgan Chase & Co. [2013]):

CIO risk Management lacked the personnel and structure necessary to manage the risks of the Synthetic Credit Portfolio...More broadly, the CIO Risk function had been historically understaffed, and some of the CIO Risk personnel lacked the requisite skills. With respect to structure issues, the CIO Risk Committee met only infrequently, and its regular attendees did not include personnel from outside CIO. As a result, the CIO Risk Committee did not effectively perform its intended roles as a forum for constructive challenge of practices, strategies and controls. Furthermore, at least some CIO risk managers did not consider themselves sufficiently independent from CIO's business operations and did not feel empowered to ask hard questions, criticize trading strategies or escalate their concerns in an effective manner to Firm-wide Risk Management. And finally, the Task Force has concluded that CIO management, along with Firm-wide Risk Management, did not fulfill their responsibilities to ensure that CIO control functions were effective or that the environment in CIO was conducive to their effectiveness.

- Integration with firm-wide risk management, independence from the CIO business unit and empowerment to ask hard questions, criticize trading strategies and escalate concerns would have enabled CIO risk management to steer JPMorgan Chase clear of the direct loss of \$7billion of shareholder value and a significant hit to its reputation.

Rutter Associates' Risk Management Role

- Rutter Associates specializes in helping clients navigate through the turbulent waters of financial markets.
- The three lessons taught by the financial crisis and its aftermath are front and center in the advice we provide to our clients in the hope that these become lessons learned rather than simply lessons taught.

Speaker Bio

Bob Selvaggio joined Rutter Associates as Partner and Head of Analytics in 2010. Prior to joining Rutter Associates, Dr. Selvaggio was Senior Vice President and Head of Risk Analysis in Fidelity Investment's Institutional Products Group. At Fidelity he oversaw Capital Markets risk, potential counterparty exposure, CVA and risk adjusted performance measurement. Prior to joining Fidelity, Dr. Selvaggio was Managing Director and Head of Capital Planning and Risk Analysis of Ambac Financial Group, Inc. responsible for portfolio credit and market risk analysis, economic and rating agency capital attribution and allocation, and risk-adjusted performance measurement. Prior to joining Ambac, Dr. Selvaggio served as a financial economist at Thomson McKinnon Securities, and then held a number of positions at The Chase Manhattan Bank including Senior Asset/Liability Analyst, Head of Fixed Income and Mortgage Research, and Managing Director of Treasury Analytics. While at Chase Manhattan Bob served for six years as adjunct associate professor of economics at Hunter College teaching graduate courses in corporate finance, financial economics, macroeconomics and microeconomics, and supervising master's theses. Bob recently authored "Three Lessons of and since the Financial Crisis" in the Summer 2017 Journal of Structured Finance and contributed a lecture transcript to Simkins et al, "Economic Value of OTC Derivatives used by Non Financial Firms", Journal of Applied Finance, No. 2, 2014. Bob has lectured on financial economics at the Wharton School of the University of Pennsylvania, NYU Courant and Georgetown University. Dr. Selvaggio is currently an adjunct assistant professor of advanced financial risk management at NYU and a Master instructor of Taekwondo free fighting. Bob is a member of the American Economic Association and National Association of Business Economists, and is a BAI Certified Risk Professional in Credit and Treasury/ALM. A graduate of the University of Pennsylvania, Dr. Selvaggio holds a Ph.D. in Economics from Brown University where he was a University Fellow.