

# Madoff: Market Mayhem

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Northfield Information

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# Today's Goals

- Describe the events which led to our involvement in the Bernard Madoff fraud case
- Review analytical methods that convinced us, as early as 1999, that Madoff was a fraud
- Discuss the ten year sequence of actions by Harry Markopolos to expose the Madoff fraud to regulators
  - Look at the additional evidence that arose as years past
- Lessons learned for investors and regulators

# One Day in Early 1999

- The Question About Manager B
  - We undertook an analysis of the track record of a hedge fund known to us only as “Manager B”.
  - The request came from a client, Harry Markopolos of Rampart Investment Management in Boston
  - We understood that Manager B was a Rampart competitor that purported to use a similar strategy (split strike conversion), but with much, much better performance results
- The Answer about Manager B
  - Within a few hours it was concluded that the Manager B returns were either fictitious, or had arisen from a strategy other than was being represented to investors, wherein returns were probably being enhanced by illegal means

# A Little on Harry Markopolos

- Prior to getting in the investment field, Harry was a captain in US Army Intelligence
- Senior quant and portfolio manager at Rampart Investment Management in Boston
  - Extensive background in option strategies and trading, the area of expertise behind most Rampart strategies
- Former president of the Boston Security Analyst Society
- Harry's wife Faith was a fund evaluation analyst at Fidelity

# Why come to Northfield in 1999?

- Rampart was a Northfield client
- Harry was a student in a BSAS sponsored course I taught in quantitative methods
- There had been widely publicized controversy in the US over mutual funds that purposely misled retail investors regarding their strategies to improve marketing. One of three major studies on this issue was:

DiBartolomeo, Dan and Erik Witkowski. "Mutual Fund Misclassification: Evidence Based On Style Analysis," Financial Analyst Journal, 1997, v53(5,Sep/Oct), 32-43.

# diBartolomeo and Witkowski (1997)

- Retail mutual fund performance was (and still is) typically evaluated relative to peer group by organizations such as Morningstar, Lipper and S&P
- The taxonomy of which funds are appropriate peers to others is very fuzzy at best
  - Terms like “small”, “large”, “value”, “growth”, “blue chip” have no universally accepted meaning
- Few actively managed retail funds explicitly identify passive index benchmarks against which they can be reliably measured.

# Gaming the System

- Retail fund marketers could “game” the ambiguity in peer groups
  - Call a value fund “growth”
  - Call a growth fund “value”
  - Both are likely to have performance that is substantially different than the peer group
  - Advertise only the fund that outperformed the peers
- Likelihood that a particular fund would be misclassified could be explained by observable fund characteristics.
  - Not accidental but clearly purposeful
- “The best way to win a contest for the largest tomato is to paint a cantaloupe red and hope the judges don’t notice”

# The Analytical Method

- Start with initial classification groups from Lipper or Morningstar
- Create a return index for each category
- Do a returns based style analysis of each fund against the category return indices
- If a fund had a predominant (statistically significant difference) weighting in a category other than its initial category, move it to the new category
- Start over and continue until convergence
  - All the apples with apples, and oranges with oranges

# Empirical Conclusions 1997

- Given return history for 1990-1995, about one third of US retail equity funds appeared to be misclassified to a meaningful extent
  - Z statistic for the existence of misclassification = 152
  - Z statistic for existence of severe misclassification = 33
- Some egregious cases: “Main Street Growth and Income Fund” that was actually a micro-cap tech fund
- About \$2 Billion of annual cost to retail investors because misclassifications led to incorrect fund diversification decisions

# Other studies on Classification

- Two additional studies confirm the general conclusions in our paper
- Kim, Moon, Ravi Shukla and Michael Thomas. "Mutual Fund Objective Misclassification," *Journal of Economics and Business*, 2000, v52(4,Jul/Aug), 309-324.
- Brown, Stephen J. and William N. Goetzmann. "Mutual Fund Styles," *Journal of Financial Economics*, 1997, v43(3,Mar), 373-399.

# Information Available on Manager B in 1999

- Marketing document outlining strategy
  - Hold long only positions in 30 to 35 stocks out of the S&P 100
  - Write an S&P 100 index call option out of the money
  - Use call proceeds to buy an S&P 100 index put option out of the money
  - Sit 100% in Treasury bills if option prices are unfavorable
  - Trade no more frequently than monthly
- Monthly performance record for many years
  - Average annual return about 12%
  - Average absolute volatility about 3%

# Some Analytical Results on Manager B

- Using iterated style analysis method classified Manager B in with fixed income hedge funds
  - Massive alpha of around 8% per annum
- Regression beta of fund returns against the S&P 100 index was .06, and not statistically different from zero
  - Essentially implausible for a long only equity fund
  - Possible in T bills but then where is the alpha coming from?
- Fund return was positive in over 95% of months
  - Worst single month was down less than 1%
- Sharpe ratio of around three
  - Median Sharpe ratio of the top quartile of US public long-only funds was about one half for the same period
  - Manager B was six times as good as the average of the top quartile of other managers?

# Conclusions Quickly Arrived At

- Three possible hypotheses:
  - Manager B is legitimate, but the likelihood of being that much better than all other managers is astronomically small
  - Manager B is enhancing returns through some illegal means such as insider trading or front running other trade orders
  - The performance numbers are made up and Manager B is a fraud
- For those who knew Manager B was Madoff, attention quickly focused on the second hypothesis
  - Former president of NASDAQ
  - Largest OTC market maker in illiquid equities

# "Chasing Bernie Madoff"

Next Eleven Slides Copied With Permission  
from "Chasing Bernie Madoff"

Harry Markopolos

Presentation to the Chicago Quantitative  
Alliance, Las Vegas, April 2009

# 2000

- I knew he was a fraudster in 5 minutes
- 4 hours of mathematical modeling proved he was a fraud
- May: 8 page submission to SEC Boston Regional Office's Director of Enforcement with 12 Red Flags

# 2001

- JAN: Casey recruits Ocrant onto team in Barcelona, Spain
- APRIL: Ocrant interviews Madoff
- May 1<sup>st</sup>: MAR Hedge publishes Madoff expose, "Madoff Tops Charts; skeptics ask how"
- May 7<sup>th</sup>: Barron's publishes, "Don't Ask, Don't Tell: Bernie Madoff is so secretive, he even asks investors to keep mum"
- SEP: Boston SEC's Ed Manion asks me to re-submit case
- OCT: 2<sup>nd</sup> SEC Submission includes 1<sup>st</sup> submission + 3 additional pages of how I think he's running the scheme + 2 pages on the Madoff investment process
- I offer to go under-cover to assist the SEC

# 2002

- JUNE: Key trip to UK, France & Switzerland
- Met with 20 Fund of Funds & Private Client Banks
- 14 have Madoff
- All 14 report "special access to Madoff"
- 2 have admitted Madoff losses – Dexia Asset Management & Fix Family Office
- 12 have not admitted Madoff losses
- All 12 turned into SEC Chairwoman 02/05/2009
- Off-Shore funds attract 3 types of investors who won't report losses or file SIPC claims with the US government

# 2003 - 2004

- Investigation continues at same pace
- E-mail records of investigation lost
- Attempting to recover data from non-functioning hard drives
- Information from 2003-2004 builds the 2005 SEC Submission

# 2005

- JUNE: Casey discovers Madoff attempting to borrow \$ from European banks (1<sup>st</sup> sign that Madoff scheme is in trouble)
- OCT: Boston SEC's Ed Manion arranges for 3<sup>rd</sup> SEC Submission
- OCT: I meet with Boston SEC Branch Chief Mike Garrity
- OCT: Garrity quickly investigates, finds irregularities, & forwards my submission to SEC's New York Office
- **NOV: Boston Whistleblower calls NYC Branch Chief Meaghen Cheung & reveals his identity**
- **NOV: 29 Red Flags submitted**
- DEC: I doubt NYC SEC's ability, fear for my life, contact Wall Street Journal

# Obvious Red Flags Part I

- BM was 7 – 65 times the trading size of the OEX index options market at various points in time
- Wall Street Firms never saw his “trading volume”
- BM only picked stocks that went up or stayed the same
- > 96% of months were positive
- BM’s performance chart was upward 45 degree straight line
- Why did BM allow the Feeder Funds, FOF’s & Banks earn the 1% & 20% hedge fund fees when all they did was market?
- BM in T-bills for most of the year but T-bills never yielded 12%

# Obvious Red Flags II

- BM couldn't afford Put options he said he bought – they would have cost 24% a year or more
- Feeder Funds said BM subsidized down months but this would have been illegal
- Feeder Funds said BM “benefited from his broker-dealer arm's trading volume” which was code for illegal front-running
- Feeder Funds said that BM had perfect market-timing ability thanks to his access to his B/D's order flow
- BM never allowed outside audits
- BM self-custodied assets

# 2006

- JAN: Integral Partners \$40 Million derivatives Ponzi Scheme goes to trial, 5 years & 5 months after discovery causing us to further doubt SEC competence
- MAR: 5 minute call with NYC SEC's Meaghan Cheung
- SEP: Chicago Board Options Exchange VP tells me that several OEX option traders also think Madoff is a fraudster. If SEC had called the CBOE's marketing office, they would have cooperated. SEC never calls. Madoff scheme continues.

# 2007

- FEB 28<sup>th</sup>: Chelo obtains a Madoff portfolio which shows zero ability to earn a return
- JUNE: Casey obtains Wickford Fund LP prospectus showing Madoff is short of cash & offering 3:1 leverage via bank loans
- JUNE: Wickford Fund LP Prospectus e-mailed to NYC SEC Branch Chief Meaghen Cheung
- JULY: Chelo obtains Fairfield Greenwich Sentry LP financial statements for 2004 – 2006; 3 years with 3 different auditors!
- AUG: Chelo conducts 45 minute telephone interview with Fairfield Greenwich's head of risk management
- AUG: Hedge funds all lose money except for Madoff!

# 2008

- Financial markets in turmoil, team loses interest, no activity until...
- APRIL: Jonathan Sokobin, SEC's Director of Risk Assessment calls me per a recommendation from a mutual friend
- APRIL 2<sup>nd</sup>: E-mail to Sokobin entitled, "\$30 Billion Equity Derivatives Hedge Fund Fraud in New York"
- FALL: Stock Markets crumble, panicked investors rush to redeem
- December 11<sup>th</sup>: Madoff runs out of money, turns himself in

# 2009

- JAN 5<sup>th</sup>: House Capital Markets Sub-Committee hearings with SEC IG, SIPIC CEO, & Madoff victim
- FEB 4<sup>th</sup>: Hearing with myself followed by SEC's senior staff and FINRA acting CEO; 375 pages of my testimony is available at [www.house.gov](http://www.house.gov) under House Financial Services Committee, 111<sup>th</sup> Congress, Archived Hearings, Feb 4, 2009 along with over 2 hours of video or you can go to youtube.com
- FEB 5<sup>th</sup>: I provided a day of sworn testimony to the SEC's IG
- MAR 10<sup>th</sup>: I meet with SEC Chairwoman Mary Shapiro

# Lessons Learned

- A minimal effort at textbook simple quant methods of due diligence called Madoff into question 10 years ago
  - If we could do this in a few hours, any fund of funds that invested with Madoff is guilty either of criminal collusion, or extreme gross negligence
- Numerous large US firms avoided Madoff
  - Simple rules of due diligence such as requiring a recognizable auditing firm
  - External custody
- US SEC regulators were incredibly inept
  - Despite the “red flag” issues, their only audit of Madoff’s operations focused on “Chinese wall” paperwork at the market making division
  - They missed that the hedge fund had not made a single trade since 1993