Exhibit 1
Part 4 of 6

member, and that all final decisions were made by Madoff himself.[108] Madoff also informed Friedman during this conversation that there were "4 or 5 black box technologies that deal with various aspects of [the] investment operations."[109]

102. This conversation with Madoff demonstrated the continued inconsistencies in strategy implementation with which Sterling was presented by Madoff over the years.[110] First, there was the issue of an investment committee. Immediately upon learning about an investment committee, industry customs and practices would be to perform due diligence related to this committee. While the existence of an investment committee is not, standing alone, a red flag—to the extent that such a committee had not previously been disclosed, it would be a red flag. Understanding the investment decision process is essential, and an investor would expect to learn of something as fundamental as an investment committee early on in the relationship with the investment adviser. The fact that a committee was being disclosed should have, in my opinion, prompted additional due diligence.

103. Second, there was the issue of "black boxes" purportedly being used by Madoff. Throughout Sterling's investment history with Madoff, they were told varying "stories" regarding the existence of black boxes. As early as 1990, Madoff's strategy purportedly relied in part on computer models and algorithms (i.e., a black box) to determine the stocks to pick for the strategy.[111] Subsequently in 2000, Sterling received BLMIS marketing materials from Fleet Bank, stating that "there [was] no black box."[112] Then, as recounted by Friedman in 2004, Sterling learned that there were 4 to 5 black boxes being used in the

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[108] Friedman Memorandum re: Madoff (January 6, 2004) (STESAA0021058).

[109] Friedman Memorandum re: Madoff (January 6, 2004) (STESAA0021058).

[110] Based on my review of the record in this case to date, it would appear to me that this was the first time in Sterling's investment history where an investment committee was discussed. This would not have been the first time Madoff offered new information about BLMIS contradicting prior information. When Sterling Stamos was created, Sterling approached Madoff about Sterling Stamos potentially investing with BLMIS. At that time Madoff indicated that he did not accept investments from funds of funds. However, Stamos testified that Stamos subsequently was told that at least two feeder funds were invested with Madoff. Stamos Dep. 197-198, August 19, 2010.

[111] Gonder Memorandum (August 24, 1990) (STESAH0007078-80).

[112] Fax to Arthur Friedman from Fleet Bank (October 30, 2000) (STESAP0000215-23).

strategy.[113] Whether an investment strategy uses or does not use a black box is fundamental to understanding the strategy itself as well as the risk profile of the strategy.

104. Receiving conflicting and shifting explanations about how an investment strategy is implemented is a warning sign that an investment adviser, such as Madoff, is lying about what he is doing. This inconsistency in the descriptions of use or non-use of black boxes is a major red flag or indicia of fraud that required additional due diligence to identify, among other things, how, in fact, black boxes were being used in the investment management process.

11. Comparison of Sterling's BLMIS Returns to Benchmarks (April 2004)

105. Sterling's Saul Katz testified that he was told by Madoff that his investment strategy targeted a return of 2 to 2.5 times the rate of return on Treasuries.[114] This statement or "target" was by itself a red flag that Madoff was not executing the strategy he claimed to implement. A SSC strategy should not be correlated to a bond yield, and more specifically it is highly unrealistic, and uncommon by any custom or practice in the investment management industry, to target a multiple of a bond yield.

106. In April 2004, documents in Sterling's possession indicate that research was performed comparing Madoff's historical returns with several market benchmarks, namely the Prime Rate, 30-day LIBOR, and the 10-Year Note, to test Madoff's claim that there was a relationship between interest rates and Madoff returns.[115] While an equity-based strategy (such as the SSC strategy) should not have a strong correlation to bond yields, the R-Squared for the reported returns from Madoff's strategy and the 10-year bond yield from 1991 to 2008 was 0.61, indicating that there was a strong relationship between Madoff and

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113 Memo from Arthur Friedman to Sterling Files (January 6, 2004) (STESAP0000128).

114 Saul Katz Dep. 61: 4-18, August 4, 2010.

115 Friedman Dep. 191, 192, June 22, 2010; Friedman Dep. Ex. AF-6 (STESAP0000178); Spreadsheet titled "Madoff vs. DJIA Annual Percentage Change" (2005) (STESAJ0010051).

selected bond yields.[116] An R-Squared of 0.61 means that changes in the 10-year bond yield explain 61 percent of the change in Madoff's returns.[117] By comparison, the 10-year bond only explains 19 percent of the change in the S&P 100, 22 percent of the change in the DJIA, and 14 percent of the change in the BarclayHedge Bond Index over the same period.

12. Madoff "Loans" Sterling $54 million and the Transaction is Falsely Documented (May 2004)

107. In May 2004, Sterling was engaged in a deal with Cablevision to acquire the local media television rights of the Mets. As part of this deal Sterling had applied for two bank loans totaling $54 million, which had yet to be received as the closing date of the Cablevision deal approached.[118] As such, Sterling approached Madoff about withdrawing this amount from its BLMIS accounts.[119] Madoff informed Sterling that since the money in its accounts was "in the market," withdrawal would lower the accounts' returns.[120] The proposal was for Madoff to loan the $54 million to Sterling, which Madoff funded using a BLMIS bank account at Bear Stearns.[121]

108. First, Madoff's response to loan Sterling the $54 million interest free instead was, standing alone, a red flag because it is an extreme departure from industry customs and practices, and at a minimum highly unusual for an investment adviser to give money out of his own

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[116] Calculated based on information in Exhibit AF-38 to Arthur Friedman Deposition and Federal Reserve FRB: H.15 Release. *See* Arthur Friedman Dep. Ex. AF-38 (February 11, 2008) (STESAK0003504); Federal Reserve FRB: H.15 Release.

[117] R-Squared measures the percentage of a dependent variable's value that is explained by the independent variables in a linear regression. The R-squared is a number between 0.0 and 1.0. The higher the value, the greater the explanatory power of the independent variables. *Quantitative Methods for Investment Methods* 388-89, Association for Investment Management and Research (Baltimore: United Book Press, Inc., 2001).

[118] Saul Katz Dep. 197-198, August 4, 2010.

[119] Saul Katz Dep. 198-199, August 4, 2010.

[120] Fred Wilpon Dep. 214-215, July 20, 2010.

[121] Saul Katz Dep. 198-199, August 4, 2010. While Saul Katz testified that it was "Bernie's money," the money appears to have come from a BLMIS bank account at Bear Stearns. Bernard L. Madoff Investment Securities, Statement Period May 1, 2004 through May 28, 2004, Bear Stearns Services Corp. (May 28, 2004) (BSTSAC0000193-99 at 97); Fax from Arthur Friedman to Bernard Madoff (May 25, 2004) (STESAH0000076-77).

account instead of honoring the request that investors simply redeem their own money. In all my years working with investment advisers I have never seen, nor heard, until now, of an investment adviser who gave tens of millions of dollars to an investor in lieu of having them partially redeem their own account.

109. Second, Sterling testified that Madoff told it that taking money out of the market would lower the returns. This was a red flag. There is no such thing as a guarantee when investing with some market exposure (which Madoff purportedly had). To suggest otherwise was a clear warning sign that Madoff was acting in a suspicious manner.

110. Third, while originally Madoff was to "loan" the $54 million to Sterling, the paperwork associated with the transaction was unreasonably minimal and not accurately representative of what actually occurred. Instead of a loan, the single page of documentation for this transaction reflected a fictitious "investment" by Ruth Madoff and not Bernard Madoff:

> Dear Ruth: This will confirm the conversations with respect to an investment by you in the Network.…You are simultaneously wiring to Sterling Equities Associates the sum of $54 million which is expected to be the approximate amount of your proposed investment in the Network.[122]

111. In short, everything associated with how Madoff responded to Sterling's redemption request and the subsequent "transaction" was a red flag of fraud and an extreme departure from industry customs and practices.

13. Why Sterling Stamos Withdraws from Bayou—A Ponzi Scheme (February – March 2005)

112. In February of 2005, Sterling Stamos redeemed the entirety of its investment in Bayou

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[122] Letter to Ruth Madoff from Fred Wilpon and Saul Katz re: Mets Network Company "Network" (May 25, 2004) (MADTEE00645190).

only a few months prior to the exposure of Bayou as a Ponzi scheme later in the year.[123] In my experience, and consistent with typical industry due diligence practices, the revelation of any investment-related fraud, especially a Ponzi scheme, triggers intensified due diligence, including the following: (1) investors check all of their investments to determine any exposure to the specific fraud that was revealed; and (2) investors typically review their entire investment portfolio to determine whether any of their investments exhibit similar characteristics to the recently revealed fraud.[124]

113. Sterling Stamos identified a number of characteristics, or reasons, why it redeemed its Bayou investment, it communicated these reasons to Sterling, and a number of these reasons were red flags to Sterling because of their similarity to BLMIS.[125]

114. Sterling Stamos outlined the following reasons for its divestment in Bayou:

- Style Drift: Bayou intended to incorporate a different strategy that included trading commodity futures into its existing style of trading equities, equity indices, and derivatives. Sterling Stamos cited two primary reasons this was problematic. The first was that Bayou's partners had little to no experience with the commodity futures markets, and the second was that commodity futures are characterized by high volatility, which would increase the overall volatility of the fund;[126]

- AUM Growth: Bayou wanted to double its fund size from approximately $500 million to $1 billion, part of which was to accommodate the trading of financial assets (commodity futures) with which Bayou had no experience;[127]

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[123] *CFTC v. Bayou Management,* No. 05-CV-8374, Complaint for Injunctive and Other Equitable Relief 9-10, ECF No. 1 (S.D.N.Y. September 29, 2005).

[124] Sterling was a limited partner in the Sterling Stamos fund that was invested in Bayou. Saul Katz Dep. 182-183, August 4, 2010.

[125] Sterling Stamos Redemption Memorandum (February 11, 2005) (SSMSAC0000149-50); Sterling Stamos Redemption Memorandum (March 01, 2005) (SSMSAC0000167); Chachra Dep. 175-178, October 8, 2010; Peter Stamos Dep. 188-189, August 19, 2010. The reasons Sterling Stamos redeemed its Bayou investments were reported at a biweekly Sterling Partner Meeting. Arthur Friedman Dep. 577, June 24, 2010.

[126] Sterling Stamos Redemption Memorandum (February 11, 2005) (SSMSAC0000149-50); Sterling Stamos – Conversations with Limited Partners Bayou Management LLC (2005) (SSMSAC0001139-49).

[127] Sterling Stamos Redemption Memorandum (February 11, 2005) (SSMSAC0000149-50); Sterling Stamos – Conversations with Limited Partners Bayou Management LLC (2005) (SSMSAC0001139-49).

- Operations: Bayou did not have an offering memorandum, used non-standard legal documentation, and had multiple errors on their K-1's for the fiscal year 2003. All of these observations raised concerns regarding back-office competency;[128]

- Lawsuits: Bayou was subject to several lawsuits from former employees and lost one trader whose departure, according to Sterling Stamos, was never fully explained. Sterling Stamos stated that these were "unsettling and although they have been resolved, they make us question…hiring practices to start;"[129] and

- Issues with an independent auditor:[130] Bayou represented that its financial transactions were certified by an independent public accounting firm called Richmond Fairfield ("Richmond").[131] In reality, Richmond was not independent, and was created by Israel and Marino for the sole purpose of concealing the ongoing fraud. As part of perpetuating this fraud, the annual reports were fabricated, and office space was leased for the purposes of acquiring a mailing address and telephone number.[132]

115. After Bayou was revealed as a Ponzi scheme in September 2005,[133] an additional red flag was identified; Bayou's use of an internal broker-dealer. The majority of trading activity at Bayou was transacted through Bayou Securities, a broker-dealer owned by Bayou.[134]

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128 Sterling Stamos Redemption Memorandum (February 11, 2005) (SSMSAC0000149-50); Sterling Stamos – Conversations with Limited Partners Bayou Management LLC (2005) (SSMSAC0001139).

129 Sterling Stamos Redemption Memorandum (February 11, 2005) (SSMSAC0000149-50); Sterling Stamos – Conversations with Limited Partners Bayou Management LLC (2005) (SSMSAC0001139).

130 Sterling Stamos Redemption Memorandum (March 01, 2005) (SSMSAC0000167).

131 *In re Bayou Group LLC*, No. 06-22306, Complaint 6, ECF No. 1 (Bankr. S.D.N.Y. September 1, 2006).

132 *In re Bayou Group LLC*, No. 06-22306, Complaint 6, ECF No. 1 (Bankr. S.D.N.Y. September 1, 2006). Stamos stated that Sterling Stamos included more extensive research into a fund's auditing firm in its updated due diligence checklist. When asked what auditor verification procedures were specifically added, Stamos stated, "we would either know the manager - know the audit firm, or if we didn't know the audit firm, we would do a site visit to get to know the audit firm." Stamos Dep. 188: 15-18, August 19, 2010.

133 Press Release 5121-05, Commodity Futures Trading Commission, *Commodity Futures Trading Commission, Hedge Fund Operator Bayou Management, Its Employees Samuel Israel III and Daniel E Marino, and Accounting Firm Richmond Fairfield Associates, Are Charged with Misappropriation and Fraud in an Action Brought by U.S. Commodity Futures Trading Commission* (Washington, D.C.: September 29, 2005), http://www.cftc.gov/opa/enfo5/opa5121-05.htm.

134 *CFTC v. Bayou Management,* No. 05-CV-8374, Complaint for Injunctive and Other Equitable Relief 9-10, ECF No. 1 (S.D.N.Y. September 29, 2005).

116. BLMIS's operations exhibited certain of these red flags. First, one of the red flags identified by Stamos in Sterling Stamos's own documentation was Bayou wanting to double the AUM, and in particular whether Bayou Management could continue to effectively execute its strategies while growing the amount of capital so substantially. Over the same time period as Stamos's investment in Bayou, Sterling's accounts at BLMIS increased by a factor of approximately 3.5 times. Growth in this amount was a red flag as to whether Madoff could in fact continue to successfully or effectively implement the same strategy because: (i) in general, an increase in assets dilutes the opportunity to exploit market inefficiencies in any strategy (i.e. he would not be able to achieve the same level of returns); and (ii) a SSC strategy would naturally be capacity bound; i.e. there would be insufficient volume - especially in options markets (whether Over-The-Counter ("OTC") or exchange-traded) - to continue to both operate efficiently and deliver consistent returns.[135]

117. Second, as a multi-billion dollar investment adviser executing a consistent investment strategy across all investors, it would have been industry custom for Madoff to maintain some type of marketing documentation providing detailed information regarding his strategy, risks associated with the strategy, background on himself, and a detailed explanation of his fee structure.[136] Hedge funds[137] typically convey such information to

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[135] At this point, BLMIS is reportedly managing billions of assets and the growth would not only be in Sterling's assets. Letter to Fred Wilpon from Richard Papert attaching *MAR/Hedge* article (April 30, 2001) (STESAP0000204).

[136] Government Accountability Office, *Hedge Funds: Regulators and Market Participants are Taking Steps to Strengthen Market Discipline, but Continued Attention is Needed* 27, Report to Congressional Requesters (January 2008). Mutual Funds also prepare prospectuses for potential investors with information similar to a hedge fund Private Placement Memorandum. Mutual fund prospectuses include information on investment strategy, fee structure, past performance, and the investment manager in charge of the fund.

[137] Douglas Hammer, *U.S. Regulation of Hedge Funds* (American Bar Association 2005). Sterling's Fred Wilpon stated that Madoff was "one of the top hedge fund investors in the world." Fred Wilpon Dep. 144: 9-10, July 20, 2010; *See also* Chachra Dep. 116, October 8, 2010 and Peter Stamos Dep. 146, August 19, 2010.

investors through a Private Placement Memorandum,[138] which is a standard hedge fund marketing document.

118. Third, Madoff purportedly executed his own transactions. Finally, as basic, even minimal, due diligence would have uncovered, BLMIS's unknown auditor only had one active accountant who was incapable of auditing Madoff's operations given its AUM and investor base (*see* Section IX.B.5).

Figure 9
Red Flag Similarities Between Bayou and BLMIS

Red Flags	Bayou	BLMIS
Accelerated AUM Growth	✓	✓
Lack of Marketing Materials	✓	✓
Lack of Independent/Capable Auditor	✓	✓
Use of Internal Broker-Dealer	✓	✓

119. These similarities between Bayou and BLMIS were all red flags that additional due diligence was not only appropriate to undertake on BLMIS but was what industry customs and practices would have expected. These similarities between Bayou and BLMIS were indicia of fraud at BLMIS.

14. Sterling Was Offered A Short-Term "Special Investment" Opportunity (November 2005)

120. Not long after the Bayou Ponzi scheme was revealed (in November of 2005), Madoff offered Sterling a short term "Special Investment" opportunity, which required new capital into a new Sterling account, and was expected to generate returns substantially greater than Madoff had been reporting in Sterling's other BLMIS accounts.[139] Sterling's Fred Wilpon

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[138] Investment advisers to managed accounts would have marketing documents (for example, sample investment guidelines, PowerPoint presentations) available for prospective investors, and for periodic presentations.

[139] Interoffice Memo from AF to All Partners re: Special Investment in Madoff (November 28, 2005) (STESAP0000129); Arthur Friedman Dep. 434, July 24, 2010.

testified that his understanding of the opportunity was the following:

> "That Bernie had an idea, which would divert from his normal procedure, and that the returns might be better. It was a short-term kind of thing. It wasn't a long-term strategy. It was a short-term window of opportunity or strategy. I have no idea what the strategy was. And that would we want to invest. And I think we did."[140]

121. This "special investment" opportunity, at this moment in time, was in my opinion, a significant warning sign of fraud.

122. First, the requirement that this "opportunity" mandated new money and could not be transferred from other accounts was a warning sign of a possible liquidity crisis. It is industry practice to perform due diligence in order to understand any new investment opportunity from an adviser, especially one that requires new money.[141]

123. Second, this investment opportunity is atypical due to, among other things, the suggestion of dramatic, short-term increases in returns, and is indicia of possible fraud. Coming on the heels of the Bayou fraud, at a bare minimum, industry customs and practices would have been to conduct substantial additional due diligence of everything associated with this special opportunity (particularly because Sterling had "no idea what the strategy was").[142]

15. Stamos Tells Sterling That Madoff Being His Own Broker-Dealer Was a Prohibitive Operational Due Diligence Concern

124. Sterling was told by Peter Stamos, its financial partner, that Sterling Stamos would not invest with Madoff, and that BLMIS "would have been stopped at the door" based on, among other things, the fact that BLMIS was its own broker-dealer, and was therefore self clearing trades made in Sterling's BLMIS accounts.[143] Stamos testified about two issues

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[140] Fred Wilpon Dep. 230, July 20, 2010.

[141] The "special investment" was assigned account number 1KW427 by BLMIS. Here Sterling did exactly the opposite—they invested in the "special opportunity" and did not perform any due diligence related to it. Fred Wilpon Dep. 230, July 20, 2010.

[142] *See, e.g.,* Fred Wilpon Dep. 230, July 20, 2010.

[143] Peter Stamos Dep. 158-160, August 19, 2010.

associated with self clearing: (1) it was not best practices, and (2) Madoff could use information gained from broker-dealer activities to engage in front-running, which is fraudulent behavior.[144]

125. The fact that Madoff was supposedly his own broker-dealer is a strong red flag because it is well understood in the industry that this very structure presents an opportunity for fraud to be committed. Most funds do not serve as their own prime broker. Despite BLMIS having its own brokerage firm, not having a third-party prime broker raises a concern because the lack of third-party controls creates an opportunity for fraud.

16. Merrill Lynch Stated That It Would Not Invest With Madoff (2007)

126. Around June 2007, Merrill Lynch acquired a 50 percent interest in Sterling's hedge fund, Sterling Stamos.[145] In that same time frame Merrill's Kevin Dunleavy expressed concerns it had with BLMIS to Sterling's Saul Katz and Peter Stamos.[146] These concerns included: (1) the fact that BLMIS cleared its own trades through an affiliated broker-dealer, and (2) the possibility that BLMIS was engaged in front-running.[147] Merrill Lynch informed Sterling that BLMIS would not meet Merrill Lynch's due diligence requirements.[148] As a result, Merrill Lynch refused to take part in investments into BLMIS.[149]

127. Hearing these concerns from a top 5 investment bank, and learning that Merrill Lynch would not invest with Madoff because of due diligence concerns was a significant red flag. This should have prompted Sterling to perform its own due diligence to confirm or deny the warnings and suspicions that Merrill Lynch had communicated. When a well-regarded

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144 Peter Stamos Dep. 159-160, August 19, 2010. According to Sterling Stamos's own documents, Sterling Stamos had recommended for years that Sterling redeem from Madoff. E-mail from Ashok Chachra to Janice Yu, re: Madoff (December 16, 2008) (SSMSAA1061678); E-mail from Mark Thompson to Ashok Chachra, re: Madoff (December 16, 2008) (SSMSAA0934925); E-mail from Ashok Chachra to Peter Stamos (December 13, 2008) (SSMSAA1194929-31).

145 Peter Stamos Dep. 80: 9-25, 81:1-2, August 19, 2010.

146 Peter Stamos Dep. 81-84, 205-207, August 19, 2010.

147 Peter Stamos Dep. 80, 84, 205, August 19, 2010.

148 Peter Stamos Dep. 203, August 19, 2010.

149 Peter Stamos Dep. 204, August 19, 2010.

firm in the investment community, that performs due diligence on hundreds of investment opportunities annually, concludes that a particular investment is rejected outright for warning signs of fraud, at a minimum, industry customs and practices would be to perform additional, independent due diligence.

IX. OPINION NO. 2

DUE DILIGENCE CONSISTENT WITH INDUSTRY CUSTOMS AND PRACTICES WOULD HAVE CONFIRMED IN REAL TIME THAT MADOFF COULD NOT HAVE BEEN LEGITIMATELY ENGAGED IN HIS PURPORTED INVESTMENT STRATEGY AND THEREFORE WAS RUNNING A FRAUDULENT INVESTMENT ADVISORY BUSINESS

128. Following in the section below is a summary of what would have been revealed had basic, customary due diligence processes been performed on BLMIS. At the outset, it is important for me to note that when I performed my due diligence on Madoff invested funds, I did not have access to the lion's share of financial and transaction information that Sterling had available to it. For example, I did not have the same transaction level information that was provided through trade confirmations and customer statements to Sterling. Therefore, I was unable to use any transaction level information in my due diligence analyses back in 2005. I was limited to analyzing monthly returns, which by itself was sufficient for me to conclude that Madoff was not and could not be doing what he said he was doing. As described below, increased knowledge from information like trade confirmations and customer statements enables a number of additional due diligence analyses, that would further confirm Madoff was not engaged in the strategy he purported to be following.

129. The due diligence analyses below tracks the same Five P construct discussed above in Section VII, namely an analysis of People, Process, Portfolio, Performance, and Pricing. The analyses are the same types of analyses, consistent with industry customs and practices that Sterling's own hedge fund, Sterling Stamos, performs on a routine basis as

part of their ongoing due diligence for its investments.[150]

A. People (Madoff and His BLMIS Personnel)

130. It is fundamental for an investor to continually analyze and investigate the manager and his personnel when conducting due diligence. For example, post-investment in Bayou, Sterling Stamos investigated Bayou's management, and the results of this investigation contributed in part to Sterling Stamos's withdrawal from Bayou.[151]

131. A global investment management firm as large as BLMIS (growing to tens of billions under management) would, in my experience, have employed a workforce that possessed credentials more like traditional investment management firms.[152] For example, typical credentials for general directors or general portfolio managers at hedge funds include bachelor's degrees at a minimum, and likely master's degrees, with PhDs possible as well.[153] Due diligence would have revealed that BLMIS had a limited number of personnel, with no advanced education or training, purportedly implementing a multi-billion dollar investment strategy.[154]

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[150] Sterling Stamos "Letter to Investors" (October 5, 2005) (SSMSAC0000181-83).

[151] Sterling Stamos "Redemption Memorandum" (February 28, 2005) (SSMSAC0000149).

[152] A FINRA *BrokerCheck* providing a business description for BLMIS would have shown, at any time, that Madoff did not disclose his investment advisory business even though Madoff was making all investment decisions, and in all other respects serving as an investment adviser to investors such as Sterling. CRD Number 2625 and SEC File No. 8-08132.

[153] General directors are individuals who, regardless of title, focus on daily operations such as trading, modeling, research, risk control, and general fund support. Considering data between 1975 and 2010, 100 percent of directors or managers held bachelor's degrees, 61 percent held master's degrees, 29 percent held PhDs, 1 percent held JDs, 8 percent were Chartered Financial Analysts ("CFA"), 4 percent were Certified Public Accountants ("CPA"), and 1 percent were Financial Risk Managers ("FRM"). Barclay Hedge Database, August 2011.

[154] In its SEC Form ADV, BLMIS was listed as having no more than five employees who performed investment advisory (i.e., BLMIS) functions. It would be difficult for a multi-billion dollar investment management business to operate with so few employees who served in that role. The fact that BLMIS may have been employing a black box as part of its strategy would necessitate that these employees be capable of developing mathematical algorithms or other related analyses for the black box. For this reason alone it would be important to investigate the backgrounds (e.g. education) of these employees. SEC Form ADV (August 25, 2006) (PUBLIC0003729-62 at 34). BLMIS listed one-to-five total employees performing investment advisory functions.

B. Process

132. Performing due diligence on Madoff's investment strategy and execution process would have identified numerous additional red flags to the ones discussed above, which would have further confirmed that Madoff was not doing what he said he was doing, and therefore was running a fraudulent IA business.

1. Split-Strike Conversion Strategy

133. The dominant investment strategy purportedly employed by BLMIS for Sterling was the SSC strategy. As conveyed by Madoff as early as 1990, in its simplest form the strategy includes buying a stock while concurrently selling out-of-the-money call options and buying out-of-the-money put options.[155] Initially this was the strategy conveyed on customer statements.[156] Beginning in 1992/1993, Madoff purportedly began to implement the strategy using a basket of stocks, and selling call options on an index correlated to the basket, and buying put options on an index correlated to the basket.[157] This shift in the investment adviser's philosophy and strategy is exactly the sort of significant change that should have brought about new independent due diligence. Because the majority of the SSC strategy implemented in Sterling's BLMIS accounts used the basket approach, the analyses below relate to the strategy assuming the basket approach.

a) Expected Volatility

134. The SSC strategy that Madoff claimed to implement is arguably a way for investors to reduce risk,[158] where risk generally refers to the volatility of returns.[159] In other words, a

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155 Gonder Memorandum (August 24, 1990) (STESAH0007078); *See also* Peter Stamos Dep. 114, August 19, 2010 and Friedman Dep. 132, June 22, 2010.

156 Fred Wilpon Customer Statement, account number 1-02330-3-0, for November 1985 (November 30, 1985) (MF0016095); Fred Wilpon Customer Statement, account number 1-02330-4-0, for November 1985 (November 30, 1985) (MF0016096).

157 Friedman Dep. 132-133, June 22, 2010.

158 Investors face many types of risk, often characterized as financial or non-financial risk. Market risk associated with exposure to changing stock prices, which is one source of financial risk, is of particular concern for investors in equities. Unless otherwise stated, the "risk" discussed herein refers to market risk.

strategy is highly risky if its returns fluctuate widely over time or if returns are not commensurate to risk. For example, a strategy that provides a steady two percent return each month for 10 years has no volatility, and hence little risk since the investor can predict with great precision what his or her returns will be for the next month. Conversely, a strategy that provides a different return each month, ranging say from -10% to +10%, would have a much higher level of volatility and thus be considered a much riskier investment because predicting the next month's returns would be very difficult.

135. The SSC strategy reduces portfolio volatility (both upside and downside), and thus risk, by limiting the gains and losses that are possible. Under a SSC strategy the investor purchases an equity portfolio, but then limits both gains and losses to some pre-determined range, based on the call and put options.[160] It is for this reason that the strategy may be used by individuals seeking to protect large concentrated positions in a single stock.

b) Expected Losses

136. Madoff purportedly selected his basket of 40 stocks such that returns would correlate with the S&P 100 index, thus Madoff's position would also have been expected to move with the overall S&P 100 index when its value was between the put and call strike prices. Since the S&P 100 has incurred losses 41 percent of the time (in months) from 1978 through 2008, Madoff's SSC strategy should experience at least some material percentage of negative return months.[161] In fact, it would have been, in my opinion, mathematically impossible for an investor implementing the SSC strategy to eliminate downside risk, as Madoff did, while generating returns in excess of default risk-free Treasury returns over any significant period of time.[162] (See Section IX.C and IX.D)

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[159] An asset's volatility is often measured as its standard deviation. *See* CFA Program Curriculum, Level III Volume 4 at 229 (2011).

[160] When an investor attempts to reduce his or her position's exposure to market prices by purchasing puts and/or selling calls, he or she is said to be "hedging" the position.

[161] Calculated based on Bloomberg Market Data.

[162] The stability of Madoff's returns becomes progressively less and less likely as the analysis period increases.

2. Out-of-Range Trades

137. Due diligence on Madoff's execution of the SSC strategy would have revealed a number of impossibilities, further reinforcing the evidence of suspicious activity occurring at BLMIS. For example, the customer statements and trade confirmations that Sterling received included numerous instances where Madoff reported buy and sell transactions at prices either above the high stock price for the day or below the low stock price for the day as reported by Bloomberg.[163]

138. Legitimate trades could not have occurred at all of the prices reported by BLMIS. Since Bloomberg collects its stock price data directly from the exchanges as well as over the counter markets, the prices as claimed by BLMIS would have been picked up by Bloomberg had the trade actually occurred.[164] In the cases when those prices are higher than the high for the day or lower than the low, BLMIS's executed prices would have become the highs and lows for the day.[165] These occurrences are not only strong red flags, they are indicia of fraud, because, simply stated, there was never a trade in the market at the price Madoff reported.

a) Equities

139. Between 2000 and 2008 there were 4,965 transactions across Sterling-related accounts that reported equity prices outside of the daily price range on the day the trade was made.[166] These 4,965 transactions reflected approximately 13 million shares traded outside of the daily range. BLMIS reported a transaction *above* the daily price range 2,463 times, and a

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[163] Examples include the purchase of MSFT shares for 9 accounts on July 2, 2003 at $26.31 when the daily low was $26.45 and sale of JPM shares for 181 accounts on February 16, 2001 for $52.59 when the daily high was $52.00. I adjusted the reported trade prices for the $0.04 commission that was purportedly included in the share price prior to September 2006. Fred Wilpon Customer Statement (February 28, 2001) (MDPTPP03844494); Judith A. Wilpon Customer Statement (July 31, 2003) (MDPTPP03847336).

[164] Bloomberg: Data Solutions (November 16, 2011), http://www.bloomberg.com/enterprise/data_solutions/.

[165] Alternatively, had the prices indicated in the account and trading statements been typos or errors, Sterling should have expected corrections from BLMIS with the appropriate prices.

[166] The source information for trading activity was the "Settled Cash" table populated by BLMIS each month, and backed up each month. While backup tapes for the Settled Cash table were not available for every time period, they existed for most months between 1998 and 2008. Note that no data existed for 1999 for any Sterling account.

transaction *below* the daily price range 2,502 times.[167]

140. It is my opinion that, with more than 13 million shares and 4,965 transactions being falsely reported on the face of customer statements and/or trade confirmations, such impossible equity prices, over so many years, means that the trades did not happen; i.e., the trades as reported on investor documentation are strong red flags where the only reasonable explanation is fraud.

b) Options

141. In addition to the equity transactions, over this same time period (2000 through 2008) there were also 64,127 options contracts (i.e., 6.4 million option shares) representing 1,709 transactions that were traded *outside* of the daily price range across Sterling-related accounts. Of these transactions 850 were traded *above* the daily high and 859 were traded *below* the daily low.[168]

142. These out-of-range options trades were indicia of fraud because they were impossible. Madoff was not actually making the trades that were claimed on trade confirmations or customer statements provided to investors such as Sterling on a regular basis. The only rational explanation for so many falsely reported trades is (and was) fraud.

3. Impossible Option Volumes[169]

143. Reviewing the customer statements Sterling received and tracked, along with readily

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167 The results are based on comparing Settled Cash table against historical pricing data from Bloomberg.

168 Based on comparing Settled Cash table against historical price data from the Chicago Board Options Exchange ("CBOE").

169 While the purported trade confirmations received by Sterling indicate that the options transactions were exchange-traded (based on the name and CUSIP number) I have also considered the possibility that these theoretical transactions were done off the exchange, or "Over-The-Counter" ("OTC"). I conclude that the transactions could not have been done OTC for several reasons. First, OTC transactions tend to be in the $5-$25 million dollar range which would have required many transactions to be done across multi-billions of dollars in assets with theoretically many sophisticated global counterparties. Significantly, any larger OTC transactions would be done only on an appointment or negotiated basis and would require days, weeks, or even months to negotiate. Furthermore, these counter-parties, whoever they might have been would themselves have to offset their own risk (i.e. hedge) which would have to be done back in the exchange traded market. Therefore, if there was insufficient volume in the exchanged-traded market, then there would, in my opinion, be insufficient volume for Madoff's counter-parties in the OTC market to absorb and then lay off this transferred risk.

available market data, such as the CBOE, due diligence would show that BLMIS was reporting option trading volume widely in excess of the total daily volume on the option exchanges. Based on a review of total daily volumes on the CBOE for various options, it simply was not possible that Madoff was trading the number of options indicated on the customer statements.

144. As part of the purported SSC strategy, Madoff traded call and put options on the S&P 100 for Sterling. The trade confirmation slips received by Sterling contained a CUSIP number for each S&P 100 option indicating the options were traded on an exchange as opposed to custom OTC contracts that are not traded on an exchange.[170]

145. For the time period January 2000 through November 2008, where comprehensive BLMIS transaction data for options exist, Madoff traded in 171 different call options on 417 days in 41,752 transactions.[171] I compared the volume of call options traded in Sterling's BLMIS account against the market, and 44.6 percent had a purported number of contracts above the daily market volume.[172] Looking further into specifically the transactions that traded above the daily market volume, I found that the number of shares transacted by Madoff greatly exceeded the total share volume transacted on the exchange. The following figure illustrates these impossible call option share results (*see also* Appendix IX).

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[170] BLMIS Trade Confirmation to Sterling Doubleday Enterprises (Trade Date December 23, 1991) (STESAG0020258); BLMIS Trade Confirmation to Sterling Doubleday Enterprises (Trade Date November 8, 1991) (STESAG0020364).

[171] Settled Cash and Bloomberg Market Data.

[172] Options are traded as a "contract" where each contract represents 100 options. The number of call and put contracts bought or sold by BLMIS was determined based on the purported equity positions as consistent with the SSC strategy. In determining how many transactions included contracts above the daily market volume, I aggregated volume across all Sterling-related accounts, therefore the 44.6 percent reflects the percentage of unique transactions in Sterling-related accounts with volume above the daily market volume. The 41,752 total number of transactions reflects 538 unique transactions with a specific transaction date, strike price, and maturity—44.6 percent of which had reported volumes above the daily market volume.