**Case 3: Barings Bank**

1. **Briefly but accurately describe Leeson’s strategy in early 1995. Be specific. What contracts were traded? Were the contracts held long or short? Describe the strategy Leeson used to cover losses. What is the relationship between this strategy and Gambler’s ruin?**

Barings Bank’s collapse was led by rogue trader Nicholas Leeson, who was supposed to be implementing an exchange arbitrage strategy, in which he was supposed to either purchase or sell futures contracts on the Nikkei 225 Index on the Singapore Exchange Ltd. and offset the position with a sale or purchase of futures contracts on the Index on the Osaka Exchange.

Leeson was long Nikkei 225 futures contracts and short JGB futures contracts, thinking Japanese government bond yields would fall.

Moreover, he implemented a short straddle, which is short volatility, and lost big on that position. Now, after the Nikkei 225 Index fell on over 1,500 points in one day and Leeson’s short straddle position lost 68 million.

As most traders do when they are losing big, Leeson kept doubling down, possibly to get a better average price. However, he held too much of the open interest and deviated from his strategy. Leeson held nearly 50% of the open interest of the Nikkei 225 Futures contracts expiring in March 1995, 24% of the open interest of the contracts expiring in June 1995 and shorted 26,000 JGB futures expiring in June 1995, which was 88% of the open interest.

Leeson took on more risky positions and did not hedge himself. By the end of the debacle, Barings Bank committed 742 million pounds to finance margin calls for Barings Future Singapore.

**Gambler’s ruin**

The original meaning is that a persistent gambler who raises his bet to a fixed fraction of bankroll when he wins, but does not reduce it when he loses, will eventually and inevitably go broke, even if he has a positive expected value on each bet.

Also, it states that the probability of one player losing is 1. Trading is a zero-sum game, in a controlled, small environment, such as the futures and options market. Since Leeson did not reduce his bets when he lost, his doubling strategy is similar to Gambler’s ruin. Eventually, Leeson doubled to a point in which the firm went bankrupt.

1. **Summarize the primary sources of the $1.4B loss to Barings. Assume you were on the supervisory board of Barings at the time the potential losses were made evident. What would be your recommendation for resolving future crises like this one? Justify your recommended action.**

The primary sources of the $1.4 billion loss could be attributed to futures contracts and a short options position. Now, there was hardly any oversight of Nick Leeson’s trading activities and no transparency of what Leeson was really trying to do. The company had a lack of internal checks and balances, and the error account allowed Leeson to hide his trading activities. Leeson’s unauthorized traders were hidden in an error account numbered 88888. He used the account to execute all his unauthorized trades.

Leeson's official trading strategy was to arb the SIMEX and OSE Nikkei 225 contracts. This arbitrage, which Barings called switching, required Leeson to buy the cheaper contract and to sell simultaneously the more expensive one, reversing or closing out the trade when the price difference had narrowed or disappeared. This kind of arbitrage activity has little market risk because positions are always matched.

Recommendations:

* Management teams have a duty to understand fully the businesses they manage;
* Responsibility for each business activity has to be clearly established and communicated;
* Clear segregation of duties is fundamental to any effective control system;
* Relevant internal controls, including independent risk management, have to be established for all business activities;
* Top management and the Audit Committee have to ensure that significant weaknesses, identified to them by internal audit or otherwise, are resolved quickly

1. **What is the correlation between Nikkei 225 index and JGB Yields? Regress the Nikkei 225 against JGB Yield and test the coefficients for significance for alpha at 5%. Given Leeson’s long position in Nikkei futures, was he on the proper side of the market for JGB futures if he wanted to hedge this exposure? How would you have designed a hedge against a long position in Nikkei futures?**

Given the data provided in the Excel exercise, we calculate the correlation between Nikkei 225 index and JGB yields to be -0.394. The regression coefficient of JGB is -3684.18 and the intercept is 17131.51, p-values for both coefficients are smaller than 5%, they are statistically significant.

Also, In Jan - Feb 1995 Leeson was long positions in Nikkei futures and short positions in JGB futures. He is on other side of the market for JGB futures. Since Nikkei 225 futures and JGB go in reverse direction, if the price of Nikkei 225 decreases, Leeson would make losses on both sides of the trading. I would have gone long (short) Nikkei 225 futures and long (short) JGB futures at the same time.