

Barings' management have been so seriously mistaken and for so long?

This chapter addresses two main questions about the Barings collapse: why did the bank give Leeson so much discretionary authority to trade, allowing him to operate without any trading limits and with no effective oversight by managers and internal control systems; and what trading strategy did Leeson employ to lose so much in such a short period of time?

Barings Bank PLC

Barings Bank PLC was the blue-blooded British merchant bank founded in 1762 by Sir Francis Baring.¹ The bank catered to royalty and was at the pinnacle of the London financial world. Among its many endeavors over the centuries, Barings financed the Louisiana Purchase in 1803, the Napoleonic Wars, and England's wars against rebellious America (1775–1783). The bank was also responsible for floating Guinness® stock in 1886, making it the first brewery to be incorporated on the London Stock Exchange. But the road to success was not always smooth. Barings survived wars and depressions but nearly went bankrupt in 1890 as a result of imprudent investments in Argentina, surviving only because of a last minute bailout organized by the Bank of England.² Despite occasional moments of turmoil, Barings was always one of the most well-placed and highly regarded players in London's financial hub. How ironic that this centuries-old bank would be toppled by one man operating out of Barings' remote Singapore office!

During the 1990s, Barings' operations focused on banking, asset management, and securities brokering, which created an internal culture clash that led to conflicts and back-office politics. Barings' bankers and asset managers stressed caution, deliberation, and long-term relationships over short-term gains. By contrast, its brokers were more adventuresome and spur-of-the-moment, with short-term gains uppermost in their minds. These two factions fought to allocate Barings' limited capital. The bank's decision to

¹The bank was originally named the John and Francis Baring Company. In 1806, its name was changed to Baring Brothers & Co.

²The bailout cost the consortium £17,326,000, which was more than £1 billion when measured in terms of 1995 of pounds. Ironically, this amount is close to what was needed in February 1995 to purchase Barings Bank, recapitalize it, and absorb the bank's losses. See Stephen Fay, *The Collapse of Barings*, London: W.W. Norton, 1997, p. 11.

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Barings Bank PLC

Leeson's Lessons

Introduction

Nicholas ("Nick") William Leeson was relaxing at a luxury resort in Malaysia, when he heard that Barings Bank PLC, London's oldest merchant bank, had lost \$1.3 billion (£860 million), and the rogue trader responsible for these losses was fleeing from Singapore authorities. Though he was staggered by the size of the losses and stunned to learn that Barings Bank was in administration, Leeson was not at all surprised by the news because it was his massive speculative losses on the futures market over a brief two-and-a-half-year period that wiped out this venerable bank.

Leeson was chief trader and head of settlements for Barings' wholly owned subsidiary in Singapore, dealing mainly in futures contracts for Japanese stocks, government bonds, and euroyen deposits. Because of his huge trading profits, Leeson earned a reputation among Barings' management in London, Singapore, and Tokyo as a "star performer," and he was given virtually free rein. Many of Barings Bank's senior management believed that Leeson possessed an innate feel for the markets, but the story of this rogue trader reveals that he had nothing of the sort. How, one wonders, could

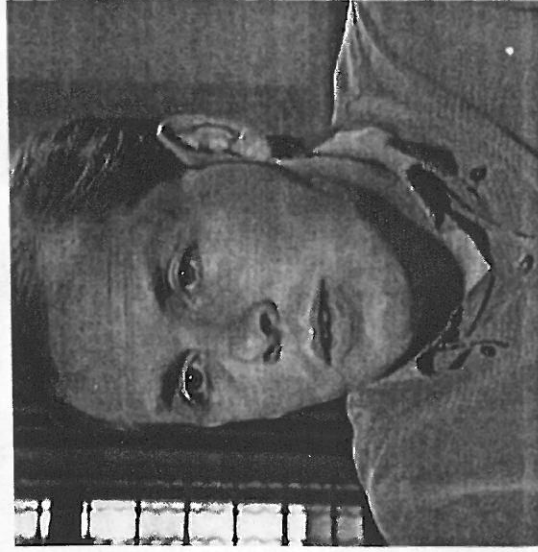
expand globally was divisive because its capital could not support equal expansion of all business lines. As a result, Barings decided in 1993 to merge its capital reserves to support all lines of business instead of allocating capital separately to each one. Unfortunately, this decision removed a major source of control over Leeson's activities.

Incessant bickering among Barings' senior managers in London and backbiting between executives in London and Singapore caused petty office politics to get in the way of good decision making and weakened traditional lines of authority. Leeson reported, in theory at least, to managers in London, Singapore, and Tokyo, but no one took responsibility for him. Internal discussions did not conclusively distinguish whether Leeson was in charge of settlements, compliance, arbitrage, proprietary trading, or just executing customer orders. In reality, he was doing *all* of these jobs, as well as taking unauthorized futures and option positions.

Nick Leeson: From London to Jakarta to Singapore

Nick Leeson (Exhibit 7.1) came from humble origins compared to most of Barings' officers. He had no family ties to the nobility, did not attend Eton, and did not serve in the Coldstream Guards. The son of a Watford plasterer, Leeson's first job at Barings (1989) was in the back office settling futures and option

Exhibit 7.1 Nick Leeson



trades, but he rose swiftly. His big break came in 1990 when he was sent to Barings' Indonesia office in Jakarta to sort out a tangled mess in the back office.

The Indonesia office had built a worrisome £100 million exposure in stocks and bonds that local operations could not reconcile. Trading volume on the Indonesian stock exchange had grown so fast that Barings' procedures for delivering stock and bond certificates could not keep up with the volume. The bank had hundreds of small discrepancies between the certificates it held and the certificates it was supposed to hold. As a result, Barings was in possession of securities worth millions of pounds that should have been paid for and delivered to customers. A team of four, including Leeson, was sent to sort out the problems in Indonesia. Within 10 months, the team had reduced the Jakarta exposure to a tenth of its original size. Leeson returned to London in 1991, and in the following year, was rewarded with the position of chief trader and head of settlements for Barings Futures (Singapore) (BFS). Later that same year, Leeson was promoted to Assistant Director and General Manager.

Barings Securities Singapore (BSS) was incorporated in 1986 and granted non-clearing membership on the Singapore International Monetary Exchange (SIMEX). At first, BSS' activities focused mainly on sock market transactions. But during the early 1990s, Barings decided to expand the bank's worldwide activities in Southeast Asia so it could take advantage of the region's relatively rapid growth and reduce its emphasis on Japan's waning stock and warrant markets. Therefore in 1992, Barings Bank applied for and received clearing membership for a newly established company called Barings Futures (Singapore).³ Leeson's appointment to BFS was the ingredient needed to activate Barings' three seats on SIMEX.

What Was Leeson Supposed to Be Doing at BFS?

In a monumental lapse of good judgment, Barings Bank decided to make Leeson, who was only 25 years old and had no previous trading experience, the chief trader and floor manager for BFS on SIMEX, as well as the head of trade settlements.⁴ You may ask, "What well-managed bank would allow its chief trader to be in charge of the back office?"

³BFS was a wholly owned subsidiary of Barings Securities (International) Ltd.

⁴In early 1992, Leeson applied to England's Securities and Futures Authority (SFA) for registration as a dealer. Shortly afterwards, Barings Bank withdrew his application when SFA found that Leeson had falsely stated that there were no civil judgments against him for unpaid debts. Leeson made the same false statement to SIMEX later in 1992 when he applied for dealer registration in Singapore. SIMEX did not catch Leeson's false statement, and Barings did not bring Leeson's civil judgments to the attention of SIMEX. See Bank of England, Board of Banking Supervision, *Report of the Board of Banking Supervision Inquiry into the Circumstances of the Collapse of Barings London* (ordered by the House of Commons), (July 1995).

The answer is easier to understand once you realize that, initially, BFS was supposed to be executing orders placed exclusively by Barings' affiliates worldwide on behalf of their customers, an activity called "agency trading." As a result, supervisors reasoned that any loss of control resulting from putting Leeson in charge of both the front and back offices would be insignificant compared to the cost savings from having one person perform both jobs.

But as competition became keener, Leeson's (and BFS') responsibilities expanded. By 1993, Leeson was allowed to trade options for clients and to conduct inter-exchange arbitrage (also called "switching"). Most of his arbitrage activities involved simultaneously buying and selling financially identical futures contracts that were offered at different prices on two exchanges, a practice called "futures arbitrage." But he also engaged in "cash-futures arbitrage," which involved trading large baskets of stocks sold in the cash markets and contracts in the futures markets.

Even though these arbitrage transactions exposed Barings' equity to a potential risk, the threat was considered to be minimal because the time gap between buy and sell orders could be measured in seconds (or fractions of a second). Therefore, Barings would have an almost continuous stream of offsetting contracts that were traded simultaneously on two exchanges.

In 1994, Leeson landed a very large customer (Philippe Bonnefoy) and was given permission by senior management to trade for his account.⁵ Bonnefoy worked for the Bahamas-based European Trust and Banking Company and was known to trade in excess of 5,000 contracts per day. In a good month, Leeson could earn commissions of \$100,000 or more from this business. To Leeson's supervisors, trading for Bonnefoy's account posed no major security breach because the bank's equity was not at risk. Only if BFS took independent positions would Barings be exposed, and such positions were prohibited by the bank's internal rules.

Leeson focused his arbitrage activities on three futures contracts: the Japanese Nikkei 225 stock index,⁶ 10-year Japanese government bonds (JGB),⁷ and three-month euroyen deposits.⁸ The Nikkei 225 futures contract was traded simultaneously on SIMEX and the Osaka Stock Exchange

(OSE); the JGB futures contract was traded simultaneously on SIMEX and the Tokyo Stock Exchange (TSE), and the three-month euroyen futures contract was traded simultaneously on SIMEX and the Tokyo International Financial Futures Exchange (TIFFE).⁹

Throughout the day, Leeson would communicate the futures prices quoted on SIMEX to Barings' traders on the Japanese exchanges. For example, if the Nikkei 225 futures contract was trading at 18,000 on SIMEX and 18,100 on OSE, Leeson would buy in Singapore and the OSE trader would simultaneously sell in Osaka to lock in a profit. These deals were simple, safe, and, therefore, the profit from each one was small. If Leeson had only been doing arbitrage trades of that sort, he would probably never have caused any disturbance. But he was also engaging in outright "naked" speculation, and that was how he lost more than \$1 billion. How was he able to evade his managers, as well as internal and external auditors for so long?

Five Eights Account

Barings' internal guidelines required affiliates to post discrepancies and trading mistakes to an Errors Account that was linked to headquarters. That way, the bank's books would balance, discrepancies would be isolated and dealt with separately, and the bank could make its regulatory filings without delay. Any open positions resulting from trading mistakes and separated in this way were expected to be closed and the resulting losses (or profits) charged to Barings' earnings. The bank intended for these discrepancies to be handled within a short period of time (e.g., a day).

Brokers, like BFS, and banks, like Barings, normally have error accounts because traders make mistakes, back-office settlements are not always synchronous, and some trades are disputed. In the melee of SIMEX's outcry trading sessions, it is easy for traders to occasionally buy when they should have sold, execute trades at incorrect prices or maturities, and make mistakes recording transactions.

When BFS began trading SIMEX contracts on 1 July 1992, it already had an errors account called the "99905 Account," which was linked directly to Barings London. During the first two days of trading, Leeson's team made a bevy of small errors and unreconciled trades, which were dutifully recorded in the errors account and reported to headquarters. Inundated with the

⁹SIMEX's Nikkei 225 futures contract is half the size of the OSE contract, and SIMEX's JGB futures contract is half the size of the TSE contract; therefore, two SIMEX contracts are financially identical to the contracts sold on OSE or TSE. The three-month euroyen contracts on SIMEX and TIFFE are the same size.

⁵See Nick Leeson (with Edward Whitley), *Rogue Trader: How I Brought Down Barings Bank and Shook the Financial World*. Boston: Little, Brown, 1996, 50.

⁶A full description of the Nikkei 225 Index can be found at Nikkei Net Interactive, <http://www.nni.nikkei.co.jp/>. Accessed 24 December 2007. A full description of the Nikkei 225 futures contract can be found at http://www.sgx.com/psv/derivatives/futures_options/equity_index/index.shtml. Accessed 24 December 2007.

⁷A full description of the futures market for 10-year Japanese government bonds can be found at <http://www.mizuho-sc.com/english/ebond/bonds/jgb.html>. Accessed 24 December 2007.

⁸A full description of the three-month euroyen futures market can be found at http://www.sgx.com/psv/derivatives/futures_options/interest_rates/SGX_Euroyen_TBOR.shtml. Accessed 24 December 2007.

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Errors Accounts

In addition to correcting trading mistakes and resolving disputed trades, errors accounts are used to reconcile many types of financial transactions for which there are temporary imbalances. Cash management systems often allow intra-day overdrafts and these overdrafts can be large. For instance, a client may send out wire transfers every morning and receive incoming wire transfers every afternoon or may make transfers from different time zones. Every cash management account is supposed to balance at the end of the business day, and if there is an account overdraft, the overdraft amount is supposed to be less than the customer's credit limit. In that same spirit, securities trading systems customarily allow overdrafts that match the delivery period for securities. For example, stockbrokers allow their customers to sell a stock and then

immediately use the proceeds to buy a different one even though the proceeds from the sale will not arrive until several days later. The customer's account is potentially in overdraft because, if the proceeds from the sale do not arrive, the customer still has to pay for the purchased shares.

Big discrepancies can arise between what clients have and what they owe, and these temporary imbalances pose risks. Even if these imbalances arise in the regular course of business and seem innocuous, they can still do harm. One reason is that discrepancies introduce delays in recognizing exposures, but another reason is that they create opportunities for clever and unscrupulous employees to take improper advantage of the permissive treatment of temporary imbalances. Nick Leeson was certainly both clever and unscrupulous.

workload caused by BFS' tiny mistakes and perhaps concerned about attracting greater regulatory scrutiny, headquarters asked Leeson (on 3 July 1992) to set up a second errors account that was not linked directly to London. In this way, BFS' mistakes could be reconciled in Singapore, instead of in London. The Chinese consider the number "8" to be lucky, so Leeson named the new errors account the "88888 Account" (the "Five Eights Account.")¹⁰

Leeson put himself into the role of guardian and proprietor of his newly discovered door to fortune and fame. During the first week of trading, he had the computer software (i.e., the CONTAC system) changed so that transactions booked to 88888 Account almost vanished from the daily reports sent to London. Specifically, Leeson deleted the system's daily trade

¹⁰During the investigation that was authorized by Singapore's Minister of Finance, Barings' senior managers denied having any knowledge of the 88888 Account. The inspectors' findings, however, expressed a lack of belief in these assertions. See Lim, Michael Choo San, *Barings Futures (Singapore) Pte Ltd: investigation pursuant to section 231 of the Companies Act (Chapter 50): the report of the Inspectors appointed by the Minister for Finance* Michael Lim Choo San, Nicky Tan Ng Kuang, Singapore: Singapore Ministry of Finance, 1995.

feed, which listed all the trades that BFS executed on behalf of its customers. He did not, however, delete a crucial report that was created from BFS' daily margin feed. This report listed the margin calls for all of BFS' customers, and it included the 88888 Account as a line item. From his experiences working in Jakarta and in Barings' London back office, crafty Leeson knew that the margin feed report posed no problem because it was neither reviewed by Barings' senior managers nor merged into London's broadly used reporting system (called First Futures).

Shortly after Leeson created the 88888 Account, headquarters informed him that it had installed a new computer system, which was capable of handling any and all of BFS' errors. He was instructed to close the 88888 Account and book all future errors in the 99905 Account. But Leeson did not follow orders, and no one in the Barings organization checked to ensure that he had.

The 88888 Account was the keystone of Leeson's financial fraud and deception. Without it, his reckless trades could not have been executed, and this ignominious financial disaster would have been avoided. He used the account to make unauthorized trades in futures and options, falsify reports to headquarters, misstate BFS' profits, record invented trades, and create fictitious accounting entries. Barings had strict trading limits and believed that it was diligently monitoring all its traders to make sure they did not exceed their limits, but the bank's systems were not good enough to catch the deception and misrepresentation that Leeson committed.

Leeson's turbocharged use of the 88888 Account began soon after it was created.¹¹ Between July 1992 and the end of the year, he booked numerous transactions to this account, causing BFS' hidden losses to grow from £20,000 to £2 million. When his arbitrage activities began in 1993, Leeson was able to report strikingly large profits, and a major source of these profits came from cross-trades he booked in the 88888 Account. Cross-trades occur when a broker matches customers' buy and sell orders internally rather than using the exchange floor. These trades must be for financially identical contracts that have the same total value.¹² Leeson increased his reported profits by recording fictitious buy and sell orders in his 88888 Account at prices that

¹¹Leeson claims that his unauthorized use of the 88888 Account began about 10 weeks after it was opened. He used the account to cover up a £20,000 trading mistake made by an inexperienced employee who earned £4,000 per year and had just begun working for BFS. The mistake could have been grounds for her dismissal. There is skepticism about Leeson's claim, as records indicate that he used this account improperly from the day it was created. See Nick Leeson (with Edward Whitley), *Rogue Trader: How I Brought Down Barings Banks and Shook the Financial World*, Boston: Little, Brown, 1996, pp. 39–42 and Stephen Fay, *The Collapse of Barings*, London: W.W. Norton, 1997, p. 97.

¹²On SIMEX, a trader must first call out prices for these contracts three times on the exchange floor. Only if the orders are not filled on the floor can the trader execute a cross-trade. Obviously, Leeson did not obey this rule.

bank, which translated into higher bonuses for everyone at Barings, including Leeson and his supervisors.¹³

In 1993, Leeson's Singapore operations reported earnings equal to £8.8 million, but actually, his losses amounted to more than £21 million.¹⁴ During 1994 and the first two months of 1995, his losses increased exponentially. For Leeson, it became an all-or-nothing game. Determined to trade his way out of this predicament, he doubled, redoubled, and then doubled again his positions. But time and time again, the market turned against him. By year-end 1994, BFS' reported profits equaled £28.5 million, but Leeson's actual losses were £185 million, and cumulative losses (i.e., since operations began in 1992) had reached £208 million.¹⁵

In 1995, the situation got worse—much worse. By February 24, Leeson had lost £600 million, and on February 27 (just three days later), when Barings Bank filed for bankruptcy, his estimated losses had reached £830 million.¹⁶ As for the power of doubling, had Leeson's activities been identified and stopped just one month prior to the Barings collapse (i.e., stopped at the end of January 1995 rather than the end of February 1995), total losses would have been less than one quarter as large, and the bank would have survived. Had he been stopped just one week prior to the end, losses would have been approximately half.

Funding Margin Calls

As the losses in Leeson's 88888 Account grew, he faced a major problem. The purchase or sale of futures contracts required him to deposit funds in margin accounts with the exchanges on which he was placing his trades. Adverse movements in prices often required Leeson to deposit additional variation margin payments because his positions were marked to market on a daily basis. Leeson had to be careful because, if his positions got too large, he would not be able to raise the cash needed to meet the margin calls.

At first, losses in the 88888 Account were small enough for Leeson to fund by diverting BFS' commissions and using client deposits. But as the required payments grew larger, he searched in desperation for other funding alternatives and found four: increasing commission income by offering

¹³For his performance in 1992 and 1993, Leeson received bonuses of £35,746 and £130,000, respectively.

¹⁴Leeson was able to report these profits because he sold about £30 million of options. See Bank of England, Board of Banking Supervision, *Report of the Board of Banking Supervision Inquiry into the Circumstances of the Collapse of Barings London* (ordered by the House of Commons), (July 1995).

¹⁵Ibid. For his stellar performance in 1994, Leeson was scheduled in February 1995 to receive a bonus of £450,000.

¹⁶Ibid.

guaranteed him profits. He also transacted legitimate business for Barings' worldwide affiliates and then crossed these transactions with fictitious trades in the 88888 Account. As a result, it seemed as if he were making arbitrage profits, but many of these profits were fabricated and were only a small part of the trades he was posting to the 88888 Account. The unreported losses in that account exceeded the arbitrage gains he was reporting.

To protect himself from being caught, Leeson often requested BFS' back office to divide his large cross-trades into a number of smaller deals to make it seem as if they had been transacted in different amounts and at different times throughout the day. In this way, his trades and positions would not arouse the suspicions of Barings' supervisors and auditors. Because he controlled the 88888 Account, Leeson was able to assign any trades he desired to it—and he did. As a result, an inspection of Leeson's normal trading showed robust profits and moderate amounts of futures contracts with positions and activity within authorized trading limits.

Leeson's Trading Strategy: Doubling

Leeson quickly acquired a reputation as a hotshot trader, and success gave him credibility with his managers and colleagues. As a result, his trades were not scrutinized the way they should have been. He made enormous bets on the movement of Japanese stock prices and interest rates. Instead of neutralizing or closing his position when the market turned against him, Leeson viewed every disadvantageous move in the market as an opportunity to recoup his losses. This led him to the fatal strategy of doubling. Doubling requires a trader to double his bets each time he loses. It is a do-or-die strategy that required Leeson to multiply the size of his bets in the 88888 Account so that any favorable movement in Japanese stock prices or interest rates would bring him back to even.

Leeson used his doubling strategy in an attempt to recoup significant losses in the 88888 Account. Meanwhile, he continued to report profits in his regular trading account. After one brush with disaster during the summer of 1993, when the 88888 Account was £6 million in the red, Leeson managed to bring it back to about zero and swore to himself (and to his wife) that he would never use the account again. But like a moth attracted to a flame, Leeson could not resist the twin lures of temptation and access to a seeming limitless supply of funding. After only a weekend's hiatus, he was back at it, with transactions on a larger and grander scale. Leeson had become addicted to fame, which meant he needed to keep his reputation as a brilliant trader. To accomplish that, he had to earn large profits for the

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Doubling

To understand Leeson's *doubling strategy*, let's experiment with a fair coin. Suppose we want to win \$1; so we flip a coin and bet \$1 that it would come up heads. If it comes up tails, we lose \$1; so to win the \$1 we want, we try again, but this time, we bet \$2 that the coin would come up heads on the next toss. If we lose again, we would be out a total of \$3, so to win our elusive dollar, the next bet is for \$4, and so on it would go. If we lose three consecutive times, our bet on the fourth try (just to win \$1) would grow to \$8, and after the seventh consecutive loss, we would be betting \$128 for the chance of gaining just \$1 (see Exhibit RB.7.2.1). Statisticians call it the *gambler's ruin*, and the term accurately describes what happened as Leeson compulsively took bigger and bigger risks.

Doubling strategies are dangerous for two major reasons. First, they can quickly result in gigantic losses, which have to be doubled once again just to break even or to make a small gain. Betting wrong at such high speculative altitudes can threaten the solvency of even the most well-capitalized institutions. The second, and perhaps most frightening, reason the doubling strategy is so dangerous is because, up until the end, individuals who use it often *appear* to be conservative, talented traders who earn rather stable investment returns.¹⁷ As a result, they are relatively unsupervised, which means that, when this strategy goes wrong (i.e., when there are repeated losses), the financial roof falls in virtually overnight and the common reaction of supervisors is one of shock and utter surprise.

A frequently quoted riddle concerning ecological catastrophes can help to show how quickly the doubling strategy can result in catastrophe.

Exhibit RN 7.2.1 Losses from Consecutive Gambles with 50-50 Odds to Win \$1

Bet Number	Amount Paid for a Bet to Win \$1	Win/Lose	Cumulative Losses from Betting
1	\$1	Lose	\$1
2	\$2	Lose	\$1 + \$2 = \$3
3	\$4	Lose	\$1 + \$2 + \$4 = \$7
4	\$8	Lose	\$1 + \$2 + \$4 + \$8 = \$15
5	\$16	Lose	\$1 + \$2 + \$4 + \$8 + \$16 = \$31
6	\$32	Lose	\$1 + \$2 + \$4 + \$8 + \$16 + \$32 = \$63
7	\$64	Lose	\$1 + \$2 + \$4 + \$8 + \$16 + \$32 + \$64 = \$127
8	\$128	Win?/lose?	Either a loss of \$255 or a gain of \$1

¹⁷This is a fact about the strategy and not the people who use it. See, Stephen J. Brown and Onno W. Steenbeek, "Doubling: Nick Leeson's Trading Strategy," *Pacific-Basin Finance Journal* 9 (2001), 83-99.

A lily pad is placed in a pond. Each day thereafter the number of lily pads doubles (i.e., two lily pads on the second day, four on the third day, eight on the fourth, etc.). On the thirtieth day, the pond is covered completely by lily pads, and all life is choked off. A warning bell sounds when the pond is half full. On what day will the warning bell ring? (See footnote for the answer.)¹⁸

deals at non-market prices, using the financial resources of Barings as his cash cow, booking fictitious trades and falsifying records, and finally, selling options.

INCREASING COMMISSION INCOME BY OFFERING DEALS AT NON-MARKET PRICES

Leeson increased his commission income by making deals with customers at prices that were highly disadvantageous for Barings. At times, winning the business meant taking uncovered positions and then hoping that his newly created exposures would turn favorable, thereby earning him both commissions on the increased business *and* gains on the unhedged positions. For example in July 1993, Leeson swapped 6,000 long calls with Philippe Bonnefoy, his major customer. Bonnefoy sold Leeson 6,000 September 1994 calls on the Nikkei 225 Index with a strike price of 19,220 and purchased 6,000 December 1994 calls with a strike price of 19,200. Leeson gave Bonnefoy an exceptionally favorable deal for the options and earned an attractive commission, but the transaction exposed Barings to a serious risk. Leeson tried to hedge the risk but was unable to do so without incurring losses. The end result was that Leeson's immediate need for commission income was solved, but Barings suffered considerable losses later, which were greater than his commissions. To put this deal into perspective, for most traders, taking an unhedged position of 100 contracts would have been considered *large*. Leeson's 6,000 contract deal was over the top.

USING THE FINANCIAL RESOURCES OF BARINGS AS HIS CASH COW

Leeson also tapped Barings' offices in London and Tokyo for needed funds. He fabricated a story that the transfers were needed, in part, to meet the margin calls of Barings' customers, many of whom lived in different time zones and had trouble clearing checks in time. He also convinced his supervisors that

¹⁸Answer: It will ring on the twenty-ninth day—just one day before life in the pond ceases. This riddle can be found in Lester Russell Brown, *The Twenty-Ninth Day: Accommodating Human Needs and Numbers to the Earth's Resources*. London: W. W. Norton, 1978.

large margin calls were a natural counterpart of his profitable arbitrage trading activities. Leeson argued that arbitrage transactions, in general, earn so little profit per transaction that he needed large gross positions to conduct his deals.

Because these positions were on two separate exchanges, each with its own margin requirements and, therefore, having no mutual netting provisions, he had to pay margins on the gross positions in both markets. As a result, Leeson persuaded his supervisors that the cash flow difficulties were more apparent than real—basically, an illusion. None of his supervisors at Barings seemed to question Leeson's explanation even though it should have been obvious that, if he were meeting margin calls on one exchange, he should have been receiving margin funds on the other. After all, he was supposed to be arbitraging.

Many of the remittances made by Barings London to BFS were "top up" payments, which means they were made without the settlements department in London knowing which specific clients' accounts should be debited. Barings London recorded these transfers generically as *loans to clients*, which implied that someone inside the bank was supposed to be checking these customers' creditworthiness and levels of exposure to see if they posed any risks to the bank. Matching customers' transactions with specific transfers also would have been important if Barings intended to charge interest on these loans.

Leeson's supervisors in London and Singapore were fully aware that customer accounts should be reconciled with margin payments and that this reconciliation duty should be separated from Leeson. Therefore, they should have known that there were serious problems at BFS. How could they not have known? Internal audits as early as 1992 (the year Leeson started at BFS) and 1993 recommended reconciliations at BFS and strongly advised that Leeson's responsibilities be separated and more broadly delegated. Hard evidence came in 1993 when a £15-million discrepancy was identified between the margin deposited by Barings' customers and the amount of funding requested by Leeson. By the second half of 1994, this funding discrepancy had grown to £100 million!

Looking back, it is clear that Barings had weak internal checks and balances in its accounting and reporting system, but perhaps more important was the failure by Barings' supervisors to act when problems were identified and warning bells sounded. Barings' first serious attempt at reconciliation started just two weeks before the bank was bankrupt. Within a few days after the audit began, the 88888 Account was discovered and a ¥14-billion discrepancy revealed, but the auditor stalled (and was stalled by Leeson) for a week, and by then, Barings could not be saved. Anything the bank did at that point would have been too little and too late.

There was a pervasive and mystifying lack of urgency at Barings to rein in Leeson. One reason might have been because his margin requests were internal

(e.g., from Barings London to BFS); therefore, Barings was not required to report these transactions to the Bank of England as a large *external* exposure. Another reason for procrastinating might have been because Leeson was making sizeable profits, which increased the bonuses of his bosses. Finally, Barings delayed because Leeson was also able to convince his supervisors that reconciliations, even weekly, were too much work and not needed. Management believed him! Therefore, top-up transfers were not reconciled; customers' credit worthiness was not assessed, and interest was not charged to clients' accounts. Only SIMEX seemed to be worried because it suspected that Barings' top-up payments were financing customers' variation margins, which was against exchange rules. To gain perspective into how glaring Barings' lack of oversight was, consider this: when Barings failed in February 1995, more than £300 million had been paid to BFS without identifying the specific customers who were responsible for the trading losses.¹⁹

BOOKING FICTITIOUS TRADES AND FALSIFYING RECORDS

The need for cash to meet margin calls drove Leeson to desperation. He began to record fictitious trades and falsify internal transfer records. Leeson's fictitious trades were blatant and illegal deceptions. Often, he booked trades late in the day to make it seem as if his net position was zero. Then, he would adjust the prices of these trades during the evening to increase his profits and/or reversed them early the next morning.

In one of Leeson's financial shell games, he pretended to transfer and trade large blocks of stocks between the accounts of the various Barings affiliates and the 88888 Account. By doing so, Leeson gave the impression that his profits were high and net exposures were small, thereby duping exchanges into charging him less margin than he should have paid. He entered false trades into the accounting system almost every day during the two months before Barings' failure, providing him with margin relief on some days by as much as \$160 million. All of these shenanigans had the effect of temporarily postponing Leeson's day of reckoning. Meanwhile, Leeson continued to hope that the Japanese stock market would rise, bringing him enough profit to put everything right.

Selling Options and Straddles

Leeson's final source of funding came from selling options, a practice that was in strict violation of Barings' internal rules. He began selling options in 1992, but this unauthorized activity increased dramatically during the final

¹⁹Bank of England, Board of Banking Supervision, *Report of the Board of Banking Supervision Inquiry into the Circumstances of the Collapse of Barings London* (ordered by the House of Commons), (July 1995). Sections 13.22 and 13.23.

Risk Notepad 7.3

Leeson's Most Flagrant Falsification Scheme

The most flagrant of Leeson's falsification schemes occurred in January 1995, one month before the end. Coopers and Lybrand (C&L), Barings' external auditor, caught a \$7.78 billion (about \$77.8 million) hole in Barings Bank's balance sheet while auditing BFS's year-end accounts. Leeson had used the \$7.78 billion to pay for his losses in the 88888 Account, and he covered his tracks by booking a fictitious sale of options to bring the 88888 Account back to zero. Because the transaction was fictitious and no cash inflows resulted from the transaction, Leeson simply fabricated a journal entry to make it seem that Barings had a \$7.78 billion deposit in Citibank (Tokyo). C&L was not able to reconcile the deposit with the transaction, which means C&L looked, but the funds were not in Citibank.

Barings supervisors were in a panic, but Leeson was able to ease their worried by manufacturing a story. His fairy-tale varied depending on who he was talking to (there were at least six versions in all), but the one that stuck was both clever and diabolical. Leeson explained that the missing funds were the result of an erroneous payment on an over-the-counter trade that he brokered between Banque Nationale de Paris (BNP) and Spear, Leeds, and Kellogg (SLK), a New York-based brokerage house that specialized in futures and options. He assured everyone that Barings had paid BNP by accident and that SLK would deposit the missing funds in Barings' Citicorp account.

To pull off this incredible lie, Leeson forged three letters and performed an act of Harry Potter-like accounting wizardry. First, he forged the signature of Richard Hogan, Managing Director of SLK, on a letter that confirmed SLK's side of the (1 October 1994) deal. The other two forgeries were created by Leeson (using scissors, paste, and a copy machine) and then faxed to BFS from his home. The first of these two forged letters was, again, from Richard Hogan at SLK, but this time it confirmed that payment would be made to BFS (on 2 February 1995). The second forgery was a letter from Ron Baker, Leeson's boss and Head of Barings' Financial Products Group, confirming his knowledge and prior approval of the deal.

Leeson's final deed was a brazen act of financial legerdemain. Needing to show that \$7.78 billion had actually been deposited in Barings' account at Citibank (Tokyo), he ordered the BFS back office to transfer these funds from the accounts of Barings' customers. What made this order so absurd and preposterous was that the accounts of Barings' customers amounted to only \$3.45 billion—barely half the amount needed. Leeson knew the transaction would bounce, but before reversing it, he asked Citibank to send him a fax showing that the funds had been deposited. Citibank's fax (which Leeson doctored to his needs) and the forged letters were enough to get Leeson a clean bill of health from the C&L audit team.

Leeson's managers in London and Singapore were jubilant! The missing \$7.78 billion had been found, and their year-end bonuses were no longer in jeopardy. Very few at Barings seemed interested in finding answers to important questions, such as:

- Who authorized Leeson to broker an over-the-counter trade?
- Who authorized him to make payments to *anyone* as large as \$7.78 billion?

- Who gave credit authorization for the payment of \$7.78 billion to SLK when the company's line of credit with Barings was only \$500 million (about \$5 million)?
- Why was \$7.78 billion taken out of another Barings account on the same day that \$7.78 billion was deposited in Citibank?
- Why were there inaccuracies and inconsistencies in the documents Leeson provided? For example on the (forged) transfer confirmation, why was the amount paid (i.e., \$7.778 billion) different from the amount returned \$7.878 billion, and why was the deal listed as a SIMEX trade rather than OTC trade?
- Finally, why was the greeting "*From Nick and Lisa*" printed on the top of the (forged) payment confirmation from Richard Hogan and (forged) deal confirmation letter from Ron Baker?²⁰

two months of 1994. During January 1995 (the month before the end) Leeson's option sales diminished because his cumulative losses had reached a whopping £208 million and option prices had fallen dramatically. In February, however, he was back in the market, again, trying to sell options as a way of getting cash to meet margin calls on his existing positions, which were still going against him. One of Leeson's favorite option contracts was a short straddle, which is the simultaneous sale of both a call option and put option at the same strike price and maturity.

One way to better understand the corner into which Leeson painted himself and the bets he was making is by diagramming the profit/loss profile of his *combined* positions. The graphic explanation in the next section illustrates what really went wrong at Barings. We will use his futures and options positions in the Nikkei 225 as the basis for this explanation.

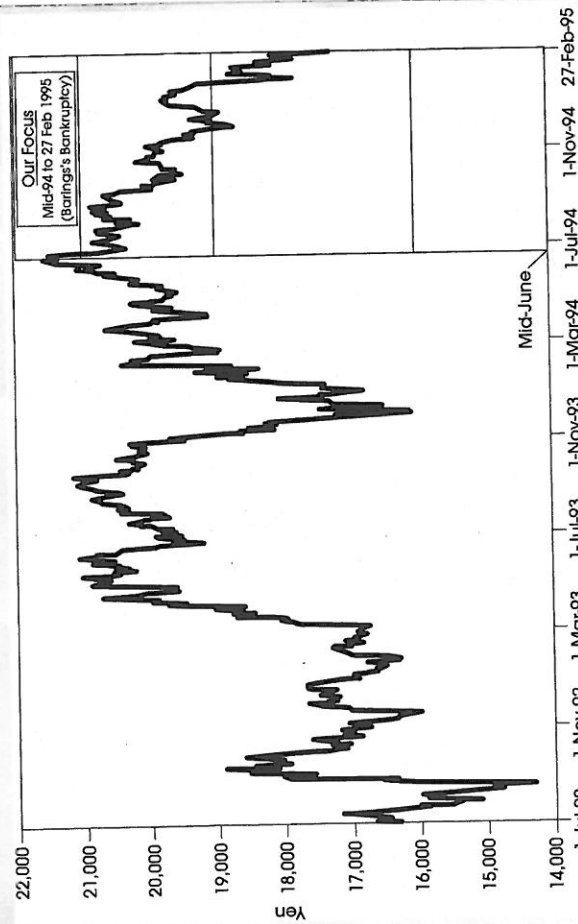
Net Profit/Loss Profile of Leeson's Exposures

LEESON'S LONG FUTURES POSITIONS

From mid-1992 (when Leeson began at BFS) to mid-1994, the Nikkei 225 Index rose and fell with market forces (see Exhibit 7.2). During this period, Leeson varied his positions in Nikkei 225 futures contracts from long to short and back again. For example, if he was long and the market moved persistently against him, he would occasionally reverse his entire position and, out of desperation, go short. Exhibit 7.2 shows how it was possible for Leeson to have been on the wrong side of rising and falling markets. Our analysis begins in mid-1994 because that was the fatal time period before the Barings collapse.

²⁰ The greeting "*From Nick and Lisa*" was automatically stamped on all messages sent from Leeson's home fax machine. In his haste to send the two forged letters, he forgot to turn off the automatic stamp.

Exhibit 7.2 Nikkei Index Closing Quotes: 1 July 1992 to 27 February 1995



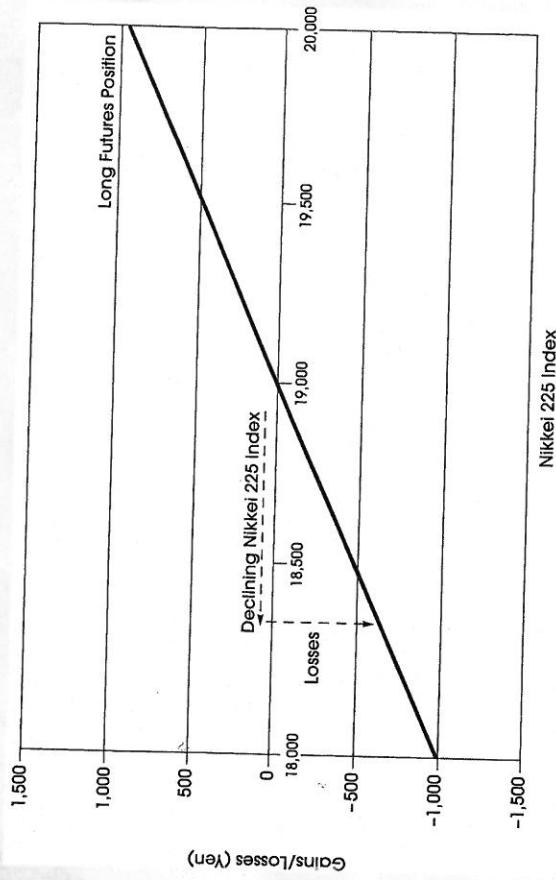
In June 1994, Leeson was betting the Nikkei 225 Index would rise; so, he built a sizeable long position in Nikkei 225 futures contracts. As Exhibit 7.2 shows, Leeson totally missed the market trend. Rather than rise, the Nikkei 225 Index fell strongly from mid-June 1994 to the end of February 1995—and beyond.

The payoff profile of a long futures position is upward-sloping, and as Exhibit 7.3 shows, any decline in the underlier's price (in this case, the Nikkei 225 Index) causes losses. Leeson was long on both OSE and SIMEX. As a result, a falling Nikkei 225 Index forced him to pay variation margin to both exchanges. At first, he tapped BFS's commission income, customer deposits, and the financial resources of Barings' London and Tokyo offices, but as his margin calls grew in size, he relied increasingly on the sale of options, in general, and on the sale of straddles, in particular.

LEESON'S SHORT STRADDLES

From November to December 1994, Leeson financed a large portion of his margin calls with unauthorized short straddles, and he hid these transactions in the 88888 Account. A short straddle is the hybrid derivative created when a put option and a call option with the same strike price are simultaneously sold (Exhibit 7.4). The only way a short straddle can earn profits is if the price of the underlier does not move substantially in either direction. A short

Exhibit 7.3 Leeson's Long Futures Positions



straddle looks like an iceberg, with most of its mass underwater (i.e., below zero). Notice how little of the straddle is above zero, compared to the total profit/loss profile. The portion of the short straddle that is above zero depends on the size of the premium relative to the total exposure.

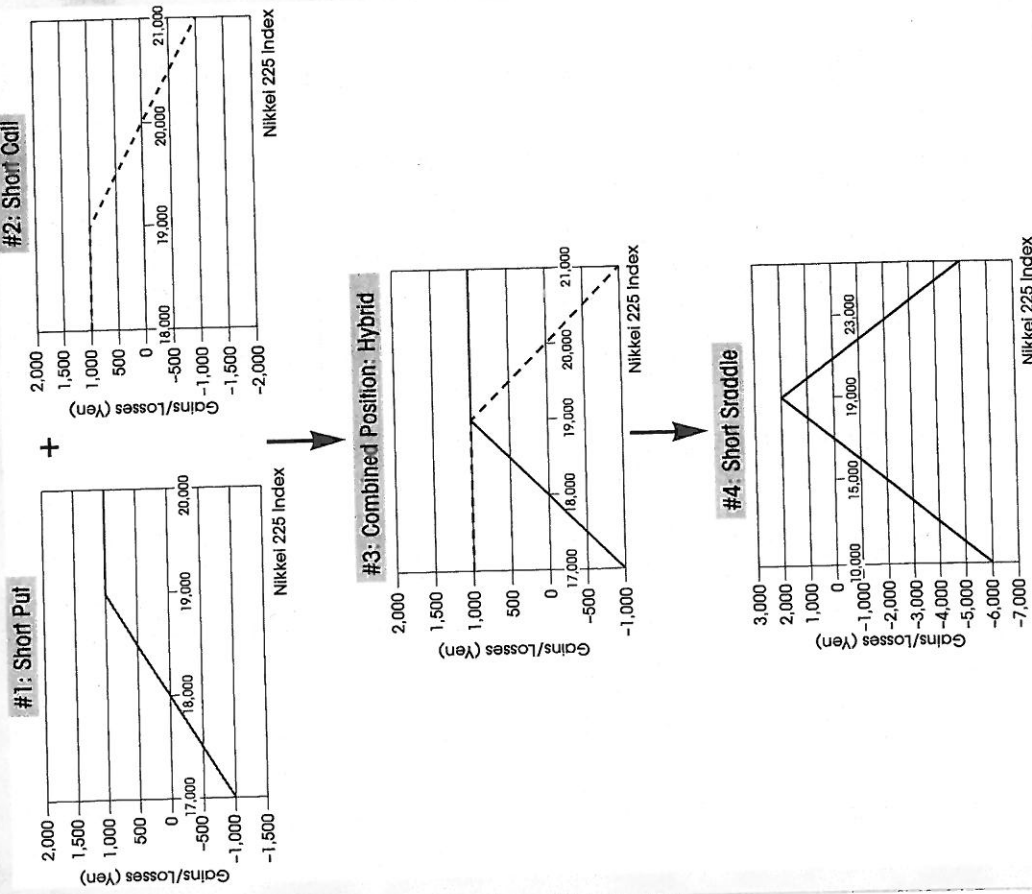
PROFIT/LOSS PROFILE: COMBINING ONE SHORT STRADDLE AND ONE LONG FUTURES CONTRACT

We must remember that the short straddle positions taken by Leeson were not in isolation. As Exhibit 7.5 shows, he combined his short straddles with long futures positions.

For every straddle he sold, Barings got cash, which Leeson used to pay the required initial margin deposits on new trades and to meet the escalating margin calls on his existing futures positions. Exhibit 7.5 shows that, to profit from his long futures position, the Nikkei 225 Index had to rise above the futures price.²¹ But if it rose too much, every yen gained on his futures position would be offset by losses on his short straddle (or more specifically, on the short call portion of the straddle).

²¹To simplify the explanation in this example, the futures price is equal to the strike price. Of course, this equality did not have to be the case. For example, if the strike price were greater than the futures price, the short straddle and long futures would profit until the strike price was reached. Only afterwards would they offset each other.

Exhibit 7.4 Profit/Loss Profiles of a Short Put, Short Call, & Short Straddle Hybrid



On the down side, the situation was much riskier. A drop in the Nikkei 225 Index caused simultaneous losses on his futures position *and* on his straddle position (or more specifically, on the short put portion of the straddle). The only thing standing in the way of losses at every lower price level was the premium Leeson collected up front, at the time he sold the straddle.

Exhibit 7.5 Profit/Loss Profiles of a Long Futures Position and Short Straddle

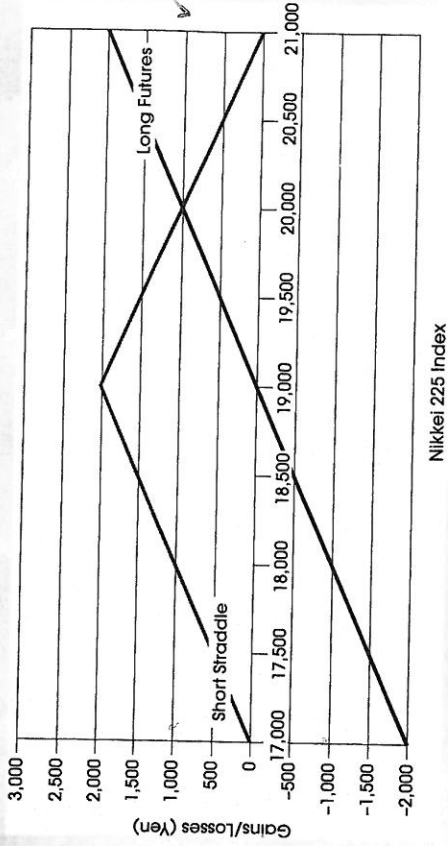
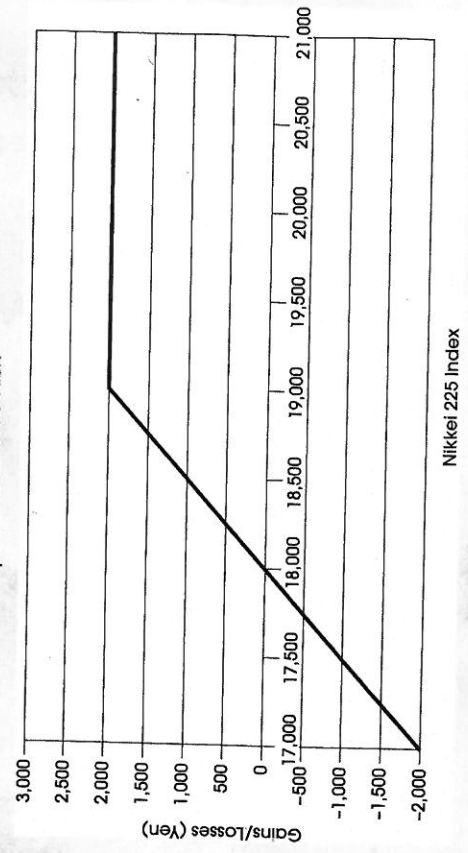


Exhibit 7.6 shows the profit/loss profile created when *one* short straddle and *one* long futures position are combined. It looks like a short put, except the downward-sloping portion of the profit/loss curve is even steeper than usual because the long futures contract incurs losses as the price falls below the futures price, and the short straddle incurs losses as the price falls below the strike price. Notice in Exhibit 7.6 that the gains from a short put position are capped. By contrast, the potential losses could be enormous if the Nikkei 225 Index fell—and it did.

Exhibit 7.6 Profit/Loss Profile of One Long Futures + One Short Straddle = Short Put with Amplified Downside Risk



premiums. But if stock prices rose too much, the losses on Leeson's mountain of short calls would have overwhelmed the gains on his futures contracts. By contrast, if stock prices fell, losses on Leeson's long futures would have been amplified by the losses on his mountain of short puts.

MASSIVE PURCHASES OF NIKKEI 225 FUTURES CONTRACTS

By 31 December 1994, Leeson had accumulated losses of £208 million. Most of his short straddles had strike prices between 18,500 and 20,000. Leeson figured that to keep earnings positive, he needed the Nikkei 225 Index to remain between 19,000 and 20,000. Luckily, during the first two weeks of January 1995, this index averaged 19,507, which was solidly within his desired range. Unfortunately, any spark of hope Leeson had that he might survive was extinguished on January 17 when Japan suffered the Kobe earthquake, one of its worst disasters of the twentieth century. Registering 7.3 on the Richter scale, this earthquake killed almost 6,500 people, and caused an estimated ¥10 trillion worth of damage to the Japanese economy. As a result of the devastation, the Nikkei 225 Index plummeted during the following weeks.

Exhibit 7.2 shows the daily closing quotes for the Nikkei 225 Index and their death-spiral fall that took Leeson and Barings to ruin. By 20 January 1994, the index had fallen to 18,840. Leeson was in real trouble, and his anguish was intensified by managers at Barings London, who were pressuring him to reduce drastically (and at almost any cost) his positions. But Leeson did not obey the directive;²² in fact, his positions grew explosively. Had Leeson wished to hedge, he would have sold futures contracts, but he did just the opposite and bought them (i.e., doubled) with every drop in the market, hoping to recover his losses when the market rose. In retrospect, his frantic and massive purchases looked like a single-handed effort to hold the Nikkei 225 Index at the 19,000 level. But the wave of selling was too great, and Leeson's efforts were as unsuccessful as a child trying to hold back a rising tide. By 23 February 1995, he owned more than 61,000 Nikkei 225 futures contracts, and despite his frantic buying efforts, the Nikkei 225 Index fell sharply to 17,830.

For Leeson, the end was near. Barings' supervisors and internal auditors, external auditors, and SIMEX officials were at his doorstep. By 27 February 1995, his position had deteriorated further, increasing Leeson's losses to an astounding £860 million (approximately \$1.3 billion),²³ which was

²²Ironically, the order from London to reduce Leeson's position seemed to be based more on the desire to quell negative market rumors that Barings was losing its conservative reputation than on any negative reaction to Leeson's activities. After all, he was arbitraging, wasn't he?

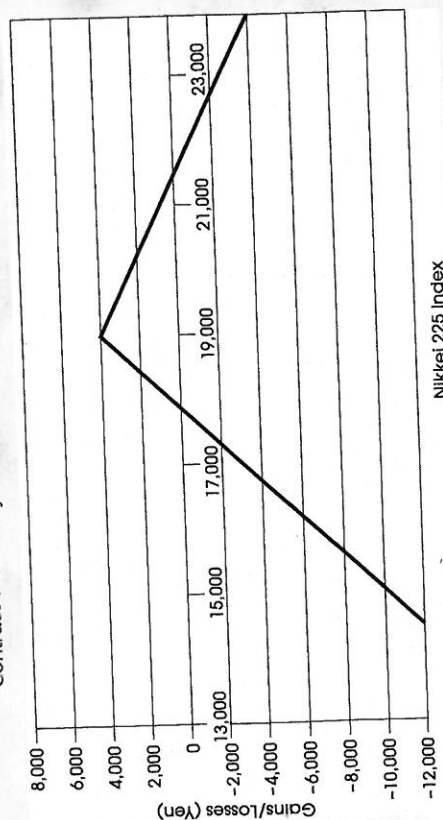
²³Bank of England, Board of Banking Supervision, *Report of the Board of Banking Supervision Inquiry into the Circumstances of the Collapse of Barings London* (ordered by the House of Commons), (July 1995).

PROFIT/LOSS PROFILE: COMBINING A LONG FUTURES POSITION AND "NUMEROUS" SHORT STRADDLES

The profit/loss profile from combining one short straddle and one long futures position gives the illusion that Leeson had a viable trading strategy, and he just guessed wrong in terms of the price movement. Exhibit 7.6 shows a large span of prices to the right of the strike price, which offers, at least, a glimmer of hope that profits could be earned. Unfortunately, we will find that this was not the case. In fact, Barings would have been lucky if Leeson had put the bank in such a position. The illusion is revealed once you understand that Leeson's need for large sums of cash to fund his margin calls forced him to sell disproportionate numbers of short straddles for each long futures position he took. Exhibit 7.6 shows the results if *one long futures contract* were combined with *one short straddle*, but this one-for-one combination was not what Leeson did. Rather, he combined numerous short straddles with each long futures position.

Exhibit 7.7 shows the profit/loss profile when numerous short straddles are combined with a long forward contract. The hybrid profit/loss profile looks, again, like an iceberg ("Leeson's Iceberg") because 90% or more is underwater (i.e., in the red). The only outcome that could have been even slightly profitable were if the Nikkei 225 Index hovered within a narrow range. For example, if the Nikkei 225 Index rose slightly, Leeson's long futures contracts would have generated small gains, and his put and call options would have expired *out-of-the-money*, thereby leaving him with the

Exhibit 7.7 Leeson's Iceberg: Profit/Loss Profile from Combining a Long Futures Contract with Many Short Straddles



considerably more than Barings Bank's equity base of £440 million. Knowing there was no way out, Leeson fled with his wife, Lisa, to Kota Kinabalu, Malaysia, stopping in Kuala Lumpur to fax Barings his resignation, in which he offered "sincere apologies for the predicament that I have left you in."

Beyond Irony: The Barings Failure in a Broader Time Frame

As enormous as his losses were after the stunning drop in Japanese stock prices, Leeson's strategy still could have earned considerable profits if Barings had been able to hold his positions until the end of the year. Exhibit 7.8 shows that, between 27 February 1995 (when Barings failed) and the end of December 1995, the Nikkei 225 stock index rose by more than 3,000 points. Due to the colossal number of Nikkei 225 futures contracts he had purchased during January and February 1995 trying to keep the Nikkei 225 Index at 19,000, *Leeson's Iceberg* (Exhibit 7.7) had been transformed into *Leeson's Hockey Stick* (Exhibit 7.9). His new position had a sharply sloping downside, reflecting the losses he would incur on his short straddle and long futures positions if the Nikkei 225 Index fell. But if prices rose, he would have earned profits because the earnings from his mountain of long futures positions would now have overpowered the losses on his short straddles.

Exhibit 7.8 Nikkei 225 Stock Index from 1 January 1995 to 29 December 1995

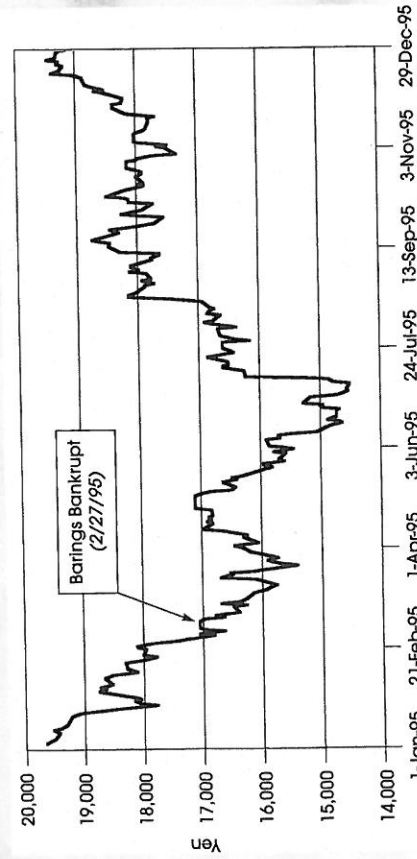
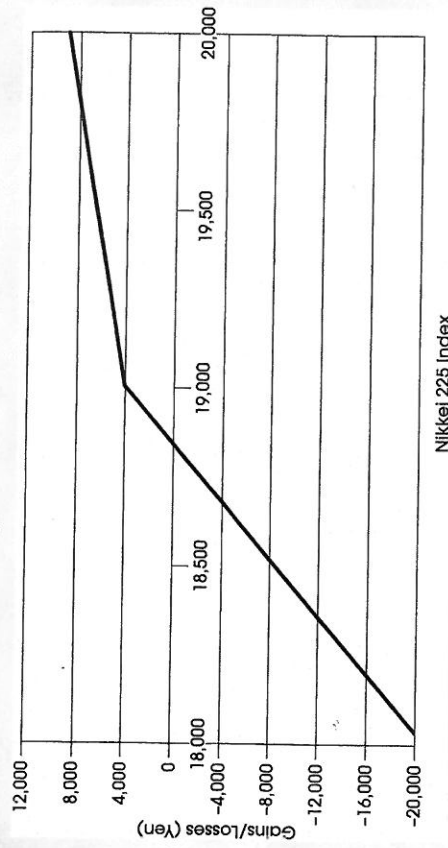


Exhibit 7.9 Leeson's Hockey Stick



A Bank for a Pound

It was not until SIMEX issued its mega-margins calls in January and February 1995 that Barings' directors in London suspected that Leeson's trading was not arbitrage and that he was not a star trader. Barings sent auditors to Singapore, but by the time the team exposed the reckless trader, it was too late. Losses had mounted and exceeded the bank's net worth. Barings had no way to recover, and efforts to extricate itself from financial ruin failed. Unlike the near bankruptcy of 1890, no white knight came to the rescue. The choice for Barings was simple: bankruptcy or sale. In the end, a Dutch bank, Internationale Nederlanden Groep (ING), purchased Barings for £1 (about \$1.50) and assumed all of the bank's liabilities.²⁴ SIMEX immediately liquidated all of Barings' positions, using the deposited margin to repay all counterparties.²⁵

Leeson tried desperately to get back to England so he could be tried in an English court. If he were imprisoned, Leeson wanted to be close to his family and not in a foreign jail. From Singapore, he and his wife fled to

²⁴The cost to ING for Barings was closer to £660 million, which can be calculated by subtracting from Barings' equity, which equaled £440 million, BFS' losses of £860 million and the infusion of £240 million needed to recapitalize Barings. If we also included estimated foreign exchange losses, which were equal to about \$60 million, Barings' price would have increased to about £720 million. Why would ING pay such a price for Barings? Remember that, even though BFS had lost £860 million, ING also purchased Barings' profitable banking and asset management businesses. See Stephen Fay, *The Collapse of Barings*. London: W. W. Norton, 1997, 231-232.

²⁵Actually, \$86 million in margin payments were returned to BFS.

Malaysia, and from there to Brunei, Bangkok, Abu Dhabi, and finally Frankfurt, where Leeson was apprehended by the police as he disembarked from a plane. London's Serious Fraud Office (SFO) was not interested in extraditing Leeson to England to stand trial. Even though Leeson's crimes had been against an English bank, they had occurred in Singapore, and it was difficult for British lawyers to find charges on which to build their case. SFO could have tried Leeson for theft, but this charge was considered to be trivial compared to his reprehensible deeds; therefore, SFO was happy to have Leeson stand trial in Singapore.

After losing a seven-month battle to be tried in an English court, Leeson accepted extradition to Singapore, where he pleaded guilty to two charges of fraud.²⁶ His penalty for misreporting contracts worth £300 million (1 February 1995) was a six-year sentence in Singapore's Changi jail, and his penalty for forgery was six months in the same jail. Leeson's imprisonment was backdated to account for the time he spent in Germany's Hoechst Prison. While in prison, he was diagnosed with colon cancer that had spread to his lymph nodes, and his marriage dissolved. In July 1999, Leeson was released from prison on good behavior after serving about four and a half years of his six-and-a-half year sentence.

Aftermath of the Barings Failure

Peter Baring, Chairman of Barings PLC, was convinced that the failure of his bank was the work of a conspiracy, which was much broader than Nick Leeson's involvement alone. After all, if Leeson bought so many Nikkei 225 futures contracts, someone must have sold them. Leeson was certain that his phone had been tapped, and he was the victim of competitors who unfairly beat him to the market and robbed him of profitable trades. Still others were sure that Leeson had a "pot of gold" hidden away for after he was released from jail. When the smoke cleared, virtually all of the conspiracy theories were either disproved or carried little credibility. The failure of Barings Bank PLC shocked the financial industry into realizing just how powerful one trader's undiscovered and unsupervised transactions could be. As a result of this catastrophe and others that occurred in the 1990s, the financial industry set its sights on the target of implementing

²⁶Leeson was extradited on 11 charges: three related to fraud, two related to amending prices, and six related to reducing his margins with cross trades. Nine of the charges were dropped in the judicial proceedings, but they were used in determining Leeson's sentence. Under Singapore law, it was difficult to charge Leeson with many of his unauthorized activities. That was one of the main reasons why all of the charges against him were for activities he performed after 6 January 1995.

new and improved risk management measures. Today, financial tools and approaches to risk management, such as value at risk and enterprise risk management, have grown in popularity due to the lessons learned in the 1990s.

Because ING purchased Barings and assumed all its losses, none of Barings' depositors, bank creditors, or customers was hurt by the collapse, and only a minority (about 1,200) of Barings' employees lost their jobs. Nevertheless, shareholders and bondholders suffered terribly.²⁷ As for the financial markets, the Barings failure turned out to be little more than a speed bump on the global financial turnpike. For a short time, market volatility and transaction costs (i.e., bid-ask spreads) increased marginally, but they returned to normal after a few months as the markets shrugged off this financial debacle.²⁸

How Could Barings Have Caught Leeson Sooner?

It is difficult to understand why Barings London did not discover and stop Leeson's reckless trading far sooner than it did, but then everything seems simple with 20:20 hindsight. A large part of the problem was that Barings' control systems were ineffective and toothless, but equally important was management's inability or unwillingness to act on the information and warning signs it had. In July and August 1994, a Barings auditor spent two weeks in Singapore and occupied the chair right next to Leeson but did not discover the unauthorized positions in his 88888 Account.

There were also plenty of advance warnings, but they were either disregarded or not taken seriously. Leeson's excessive margin calls were not challenged, when they should have been. Warning bells should have rung loudly when his daily requests for funds were evenly split between Barings' house account and customers' accounts—an occurrence that probabilistically should not have occurred even once, let alone almost every day. How difficult should it have been to expose this rogue trader? Regrettably, the answer is "not very difficult."

²⁷In 1993, Barings issued £100 million worth of perpetual bonds. After the bankruptcy, ING offered to repay the owners of these bonds only about 5% of their value. See Bank of England, Board of Banking Supervision, *Report of the Board of Banking Supervision Inquiry into the Circumstances of the Collapse of Barings London* (ordered by the House of Commons), (July 1995).

²⁸See David M. Walsh and Jinwei Quek, "An Empirical Examination of the SIMEX Nikkei 225 Futures Contract Around the Kobe Earthquake and the Barings Bank Collapse," *The Journal of Futures Markets*, Vol. 19, No. 1 (1999) 1–29.

- Barings could have looked (just once) at the simple, but informative, one page margin statement that was sent to Barings managers by SIMEX every working day from July 1992 (when Leeson began trading at BFS) until February 1995 (when Barings failed). Just adding together customers' margins calls for the day and comparing this total to the amount requested by Leeson would have revealed an eye-popping difference. This difference would have proved immediately that Barings' customers were not the cause of the large payments that Barings London was sending to BFS.
- To separate customers' business from its own and reconcile the difference, Barings London could have asked Leeson to prepare a report that showed cash balances with banks, loan positions, and margin balances for its agency and proprietary businesses.²⁹
- The 88888 Account was hidden from Barings London, but it was not hidden from SIMEX. To expose Leeson's fraud, Barings' managers needed only to ask SIMEX for its daily position statement and then compare it with its own position statement. This comparison would have shown that Barings Bank (itself) had an enormous and unauthorized exposure to the exchange.
- Barings could have compared its positions on SIMEX and OSE to see that Leeson's trades were not offsetting. When Barings failed, he was long in both markets, which meant that Leeson was speculating and not arbitraging.
- Barings' internal and external auditors could have asked for a list of all BFS accounts. The 88888 Account was in BFS' computer system and would have been printed (along with all of BFS' other positions) for anyone to see.
- Barings' external auditors could have examined the yearly activity the 88888 Account instead of focusing exclusively on the ending balance. Before each audit, Leeson reduced the 88888 Account to a trivial balance; therefore, auditors saw no need (from 1992 to 1994) to inspect this *immaterial* (sic) account. As well, auditors could have (should have) relied on original sources to verify audit information, rather than ask Leeson to provide it.
- SIMEX wrote three important letters to Barings' senior management. One was written as early as 1993, and the other two were written

²⁹In fact, Leeson was asked to submit this report in May 1994, but he never complied, and Barings did not follow up sufficiently.

during the two months before Barings went bankrupt. The 1993 letter informed Barings of a minor fine imposed on Leeson because of trading violations, and it specifically mentioned the 88888 Account. The second letter (11 January 1995) also mentioned the 88888 Account and went on to complain about the lack of information coming from BFS. Moreover, it cautioned Barings that the bank might be violating a SIMEX rule that forbade clearing members from funding customers' variation margin payments. This letter was never sent to London by Leeson's Singapore manager, and to make matters worse, the same manager asked *Leeson* to draft Barings' reply to SIMEX. The final letter from SIMEX (27 January 1995) asked for Barings' assurances that it could meet future variation margin requirements. This letter was sent to London, and astonishingly, Barings responded to SIMEX (on 10 February 1995) with a resounding confirmation of its funding abilities. It was obvious afterwards that Barings' managers spent no time researching the accuracy of their misleading response to SIMEX.

To gain an understanding of the degree to which Leeson's trades took him outside Barings' internal rules, consider Exhibit 7.10, which

Exhibit 7.10 Reported and Actual Trades of Barings Futures (Singapore) on 27 February 1995

Contract	Reported to Barings London		Trades Booked in 88888 Account	
	Number of Contracts ^a		Number of Contracts ^a	
Total Futures	46,653		95,918	
Nikkei 225	30,112		Long 61,039	
JGB	15,940		Short 28,034	
Euroyen	601		Short 6,845	
Total Options	0		70,892	
Short Calls	0		37,925	
Short Puts	0		32,967	

^a Contracts are measured in terms of SIMEX contracts, which are half the size of OSE and TSE contracts.

Source: Bank of England, Board of Banking Supervision. Report of the Board of Banking Supervision Inquiry into the Circumstances of the Collapse of Barings London (ordered by the House of Commons), (July 1995).

compares the trades Leeson reported to London at the end of February, 1995 with the actual trades booked in the 88888 Account. Barings London assumed that the SIMEX trades Leeson was reporting were offset by equally valued trades on OSE. Moreover, the bank's internal rules limited traders' intraday positions in the Nikkei 225, Japanese government bonds, and three-month euroyen contracts to 200, 100, and 500 contracts, respectively. These same internal rules also prohibited traders from taking proprietary positions (i.e., positions using Barings as a counterparty), such as selling options or holding unauthorized positions overnight.

Leeson was in gross violation of all these limits. At the end of February 1995, he stood to gain or lose more than \$30.5 million with each 100-point movement of the Nikkei index³⁰ and more than \$28 million for each 100-point change in Japanese government bond prices.³¹ His positions were so large that they caused Barings to run afoul of Bank of England protocols. To control credit risk, English banks were required to report to the Bank of England all customer exposures that exceeded 10% of the bank's shareholders' equity and to notify the central bank *before* an exposure would exceed 25%. Yet during 1994 and 1995, Barings had persistent exposures to SIMEX, OSE, and TSE that were each in excess of 25%. In February 1995, when Barings failed, its exposures to OSE and SIMEX were 73% and 40%, respectively.³²

Conclusions: Leeson's Lessons

The Barings failure was a spectacular calamity that provided some valuable lessons. Effective risk management requires a clear line of demarcation between the responsibilities of front-office and back-office managers and staff. Otherwise, there will always be temptation to fix the books to

³⁰61,039 Nikkei 225 contracts $\times$ ¥500/tick $\times$ 100 ticks $\times$ \$0.01/¥ = \$30,519,500.

³¹\$28,034 JGB contracts $\times$ ¥1,000/tick $\times$ 100 ticks $\times$ \$0.01/¥ = \$28,034,000.

³²In 1993, the Bank of England made an *informal concession* to Barings that granted a temporary right to exceed the 25% equity limit. Barings inquired whether this rule applied to banks when the foreign counterparty was an exchange rather than a private entity, such as an individual or company. Barings must have interpreted the Bank of England's tacit approval as a perpetual right because it did not report its rising SIMEX and OSE exposures during 1994 and 1995. At the same time, the Bank of England delayed for almost two years before ruling that a bank's exposure to a foreign exchange cannot exceed the 25% equity limit. Bank of England, Board of Banking Supervision, *Report of the Board of Banking Supervision Inquiry into the Circumstances of the Collapse of Barings London* (ordered by the House of Commons), (July 1995), Section 13.63.

enhance performance. Without this separation, control systems that monitor risks, such as trading limits, creditworthiness, liquidity, and cash flow, lose most of their significance. Barings allowed Nick Leeson to settle his own trades, by giving him authority over both the front and back offices. As a result, he could manipulate accounts at the Singapore branch, while reporting fraudulent totals that appeared accurate. Giving Leeson authority over front- and back-office functions was equivalent to giving the fox responsibility for counting the chickens in the chicken coop.

Perhaps the most embarrassing aspect of the Leeson-Barings catastrophe was the role played by senior management (i.e., Leeson's direct supervisors, the bank's management committee, and the Board of Directors), whose errors were ones of omission rather than commission. Barings management gave too much autonomy to Leeson, who was, in more ways than one, far beyond the scrutiny of his supervisors. From the start, there were no clear reporting lines in Barings' highly political matrix organization. As a result, there was a gaping lack of understanding throughout Barings of exactly what Leeson was doing.

Barings' controls proved to be pathetically ineffective. No one in the bank seems to have fully understood the risks that Leeson was taking. He was thought to have the Midas touch, and too much restraint would cramp his trading style. Therefore, no one posed the hard questions that should have been asked. Even routine tasks, such as reconciling margin payments with customers' accounts and verifying information sent from BFS to headquarters, were not performed in a professional way. Barings' management committee should have set up reporting systems to ensure that important information on operational risks reached it, and the Board of Directors should have put the management committee under constant pressure to formulate these risk-reporting systems.

Barings management thought Leeson was hedging and, therefore, it funded his margin calls without demanding a full explanation. Had Leeson been fully hedged, then the margin calls on one exchange should have been offset by gains in the other. When he earned 20% to 50% of Barings' worldwide annual profits on *riskless* trades, alarm bells should have sounded immediately.³³ Yet no one from Barings investigated the source of these profits. Instead of scrutinizing these absurd profits, Barings management

³³See BBC Online Network, *Business, The Economy How Leeson Broke the Bank* (Tuesday, June 22, 1999). Also see, Stephen J. Brown and Onno W. Steenbeek, "Doubling: Nick Leeson's Trading Strategy," *Pacific-Basin Finance Journal* 9 (2001), 83-99.

convinced itself that the source of the BFS' competitive advantage over rivals came from its large customer base, ability to arbitrage the Japanese and Singapore exchanges, and having the *wisdom* to hire Leeson, the golden boy of arbitrage trading.

Senior Barings managers ignored internal audit reports, as well as inquiries from the Bank of England and Bank for International Settlements. They even ignored (for a while) the cold reality of Leeson's call for cash, when trading losses required Barings to borrow the needed funds and wire them to Singapore. The bank had rules and regulations in place that were supposed to stop traders (including Leeson) from activities such as exceeding intraday trading limits, carrying open overnight positions, and exposing the bank to excessive customer risk, but rules are useless if they are not obeyed or enforced.

From all their years of trading and security dealing, one would expect banks, like Barings, to have learned from their successes and failures how to control the positions of their employees. But control is an elusive goal when banking activities have so many dimensions and when each trading operation and each new instrument offers its own secret passageways to the bank vault. Derivatives can involve huge amounts of *leverage*, and their net risks can be masked by joining them in countless combinations, permutations, and variations. Nevertheless, almost no twisting and turning can reverse the fact that many levels of management above and around Leeson failed to function properly. Whatever arguments Leeson's supervisors concocted to absolve themselves were invalid and shallow. Leeson was only 25 years old and had no previous trading experience when he became BFS' chief trader and head of settlements. It is sobering to think how many individuals with brilliant minds and the opportunity to study at prestigious universities, like Oxford and Cambridge, were duped by a lone rogue trader in Singapore.

Epilogue

What Happened to the Key Players in the Barings Financial Fiasco?

The Barings fiasco was a story meant for the movie screen. If Leeson, himself, was not colorful enough, Barings' highly educated managers came out looking like the banking industry's equivalent of the Keystone cops. What happened to these individuals who peppered the landscape during Nick Leeson's brief stint with the 233-year-old Barings Bank?

Exhibit E 7.1 What Happened to the List of Characters After Barings' Financial Fiasco?

No. Name	Position and/or Relationship to Leeson	What Happened to Him/Her?
1 Ron Baker	• Head of Financial Products Group, Barings Investment Bank (London) • Leeson's direct boss in Singapore	• Censured by the Department of Trade and Industry's inquiry. Prohibited from serving as a company director. • Found by England's Securities and Futures Authority to have breached securities industry rules.
2 Peter Barling	Chairman, Barings PLC	• Had planned to retire, anyway, in 1995 due to his age. Resigned from ING in April 1995 and decided to retire from finance to live in his country estate. • Absolved of any responsibility for the failure.
3 James Bax	• Managing Director, Barings Securities (Singapore) • Leeson's main boss in Singapore	• Found by the Securities and Futures Authority to have breached securities industry rules. • Censured by the Department of Trade and Industry's inquiry. Prohibited from serving as a company director for four years. • Returned to Scotland, his native country.
4 Geoffrey Broadhurst	Group Finance Director, Barings Investment Bank, (London)	• Found by the Securities and Futures Authority to have breached securities industry rules. • Censured by the Department of Trade and Industry's inquiry. Prohibited from serving as a company director for four years.
5 Tony Gamby	Director of Settlements, Barings Investment Bank (London)	• Found by the Securities and Futures Authority to have breached securities industry rules. • Censured by the Department of Trade and Industry's inquiry. Prohibited from serving as a company director.

(Continued)