Name:

Enrolment No:

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2018

Course: Commodity Trading & Price Risk Management
Semester: III
Programme: MBA (International Business)
Time: 03 hrs. **Max. Marks: 100**
Instructions:

SECTION A

S. No.		Marks	CO
Q 1	**Explain the following in not more than 2 lines** 1.) Call option 2.) Stress Testing 3.) Mark to Market margin 4.) Credit risk 5.) Novation 6.) Good till Day order 7.) Contango 8.) SPAN 9.) Hedger 10.) Limit order	**20**	**CO 1,2**

SECTION B

Q 1.	What do you understand by plain vanilla swap? Explain with the help of an example.	**5**	**CO 3**
Q 2.	Explain the concept of market risk and the measures to mitigate it?	**5**	**CO 1**
Q 3.	Illustrate Short Straddle option strategy with the help of an example?	**5**	**CO 3**
Q 4.	Margin is the deposit money that needs to be paid to buy or sell each contract in an exchange. Explain various kinds of margins?	**5**	**CO 2**

SECTION-C

Q 1.	Compare and contrast forward and futures contracts and Explain how they are applied.	**15**	**CO 2,3**
Q 2.	Summarize the steps involved in the commodity markets trade processing (OTC) lifecycle	**15**	**CO 2,3**

SECTION-D			
Q1.	Refer the case below and answer the questions in the end of the case study. **"Commodities Trading: Nick Leeson, Internal Controls and the Collapse of Barings Bank"** **By Sam Bhugaloo** **<u>Introduction</u>** Even in an era where "cooking the books" and "Enronised" have entered the vernacular, it seems unbelievable that a global institution with an unimpeachable reputation collapsed into bankruptcy as the result of the ethical improprieties of a single employee, Nicholas ("Nick") Leeson. Leeson was directly responsible for causing the collapse of Britain's Barings Bank by concealing $1.4 billion in losses in 1995 (Lemke, 2002). This paper provides an overview of the events leading up to the collapse of Barings Bank in 1995, a discussion of Nick Leeson and commodities trading, and an assessment of the adequacy of internal controls at Barings Bank. An analysis of the lessons learned and steps taken to preclude recurrences of such events in the future is followed by a summary of the research in the conclusion. **<u>Background and Overview</u>** One meaning of globalization refers to "paper entrepreneurialism" and to the explosive growth of international financial markets: "Dwarfing the growth of trade in manufactured goods, these financial markets draw on the $20 trillion of swaps, options, and other derivatives that circulate around the world."1 In these markets, investors speculate on minute spreads in global interest rates, as well as in foreign currency exchanges that currently trade $2.5 trillion a day. According to Blau, technological innovations in banking have helped to fuel this growth in speculative capacity. For example, when Chemical Bank purchased Chase Manhattan, it also acquired the $130 million centre in Bournemouth, England that Chase had built to process transactions from around the world. A satellite network connected this 323,000-square foot facility to offices in New York, Hong Kong, Luxembourg, and Tokyo; the telecommunications lines to London could transmit the equivalent of the city's telephone directory in 90 seconds. The total value of all transactions it handled reached trillions of dollars a year and the money naturally tended to go where more of it could be made in the fastest manner possible. "In essence, the financial markets are now so interlocked it is estimated that political and economic changes elsewhere account for 80 percent of the turbulence in a given market. As a result, a rise of interest rates in New York can easily spark a sell-off in Mexico." This relentless quest for the highest rate of profit frequently deprives some countries of funds. For example, in the last decade of the 20th century, Sweden, Canada, Italy,	**30**	**CO 3,4**

and Spain were deeply in debt and faced a capital shortage; however, U.S. investors were particularly uninterested in these investment opportunities. Rather than seek out these investment venues, from 1990 to the end of 1993, American investors absorbed a net total of $127 billion in the then-robust Asian and Latin American markets. In 1993, the Philippine market increased 133 percent; at the same time, Hong Kong, Indonesia, Malaysia, Thailand, and Brazil roughly doubled. Poland experienced the sharpest increase (718 percent), but Turkey managed to gain 214 percent, and Zimbabwe also increased 123 percent. According to Blau, "Countries that were deeply in debt simply could not compete with speculative opportunities like these."

Barings Bank

Founded in 1762, Barings Bank (previously known as Baring Brothers & Co.) was the oldest merchant banking company in England. Barings collapsed on February 26, 1995 as the result of the activities of one of its traders, Nick Leeson, who lost $1.4 billion by investing in the Singapore International Monetary Exchange (SIMEX) with primarily derivative securities. This was actually the second time the bank had been faced with bankruptcy.5 Following the collapse, Barings was purchased by the Dutch bank/insurance company ING (for the nominal sum of one pound) and today no longer exists as a corporate entity; however, the Baring family's name lives on in Baring Asset Management.6 An autobiography of Leeson and the events leading up to the collapse of Barings were dramatized in the movie "Rogue Trader."7 According to Wolfgang H. Reinicke (1998), in view of recent developments in the derivatives markets, the Basle Committee recognized that its existing formula focused too much on credit risk and too little on market and operational risks. As a result, a series of intense discussions took place within the committee, as well as between regulators and the private sector over the next few years.

This initiative resulted in what represented a dramatic shift in the global public policy framework developed in the late 1980s. In an effort to accommodate the changes that had taken place in the markets, the Basle Committee issued for comment a proposal on a capital standard based on market risk in April 1993; however, the private sector responded with sharp criticisms that the proposed reforms were too complex for smaller institutions to manage, and too difficult for the public to understand, and still too primitive for banks that had already been active in the derivatives market by using much more sophisticated risk management techniques.

The collapse of the Barings Bank identified three fundamental shortcomings that had to be addressed in order to establish a revised framework for global public policy:

1. As late as the end of 1993 Barings had a capital ratio well in excess of the Basle Agreement's 8 percent requirement, and in January 1995 it was still considered a safe bank; the fact that Barings found itself in receivership only two months later could not but raise serious doubts about the adequacy of the regulatory system for capital requirements;

2. The collapse showed that internal controls at Barings were totally inadequate to support the activities of its traders; and

3. It was evidence that regulators in different countries had failed to communicate with each other to a degree sufficient to reduce at least in part the information asymmetry that globalization had created.

Against the background of these events and the shortcomings they revealed, the Basle Committee accelerated its efforts and in April 1995 issued for comment a proposal for an entirely new approach toward the regulation and calculation of banks' capital requirements. For the first time in their history, banks would be allowed to use their own internal risk management models, which they use for their routine day-to-day trading and risk management, to determine their capital requirements.

Nick Leeson and Commodities Trading.

Beyond their usefulness in risk management or hedging applications, derivatives are also powerful tools for cross-border speculation. According to Reicke, as an example, currency options allow large investors to place large bets on the movement of a currency for a fraction of the cost of holding a comparable position in dollars or yen. Likewise, stock index derivatives enable speculators to take positions on the movement of foreign equity markets without acquiring any foreign stock. Although all of these parallel markets are linked to a stock market in some country, or to a national currency, their geographic location is simply a function of where a demand emerges, or where a conciliatory regulatory environment can be found, irrespective of national borders. As a result, the largest market for options on German government bonds was in London, as the activities of Barings' trader Nick Leeson demonstrated.

While there were a number of other factors that contributed to the $1.4-billion trading fraud, business journalist John Plender reports that a number of those who were involved in investigating and picking up the pieces after the Barings fiasco ". . . believe that the competitive nature of the relationship between the Osaka Stock Exchange in Japan and the SIMEX exchange in Singapore prevented a sharing of information about Barings' exposures that would have led to earlier curbs on Leeson's activities."18 Leeson's superiors in London maintained that he was most likely involved in some type of scheme that was designed to profit from Barings' collapse. An increasing amount of evidence, however, suggests a different series of events contributed to the bank's demise. For example, Reincke reports that investigators sent to Singapore by the Bank of England discovered no evidence of anyone building a single, large short position against the bank. "In fact, it was discovered that the former Barings' employee had traded with a number of parties. A more reasonable explanation was that Leeson might have been selling call and put options on the Nikkei, betting that the Japanese equities market would fluctuate

within a stable range."19

Internal Controls at Barings Bank

The Barings collapse confirmed that internal controls at Barings were clearly insufficient to detect what was taking place with Leeson's derivatives trades. "Look at what happened to Baring Brothers Bank when they turned loose that idiot, Nick Leeson, to do his own thing in the Far East financial markets. He lost so much money speculating in yen that he brought down the whole bank before the top command even knew what was happening." While initial accounts cantered on the fraudulent activities of Leeson, and evidence suggests that Leeson was in fact engaged in highly speculative transactions and deliberately tried to deceive his superiors, his actions were not the only reason for the group's failure. Totally inadequate internal communications, controls, and channels of accountability, as well as insufficient regulatory oversight, compounded these findings by UK regulators as did a lack of communication between regulators in the United Kingdom, Japan, and Singapore.

Lessons Learned and Steps Taken to Preclude Recurrences

Barings has not been the only such financial institution so effected by insufficient internal controls, although every situation is unique. For example, in spite of the notoriety and infamy of the Leeson case, over a year later Sumitomo Bank faced an estimated $1.8 billion loss also attributable to a single rogue trader.32 Likewise, Tim Lemke of *The Washington Times,* reports that John Rusnak, a currency trader from Baltimore and seven-year veteran of the company, was accused of losing $750 million through fraudulent transactions over the past year. All first said Rusnak placed a large number of trades that bet on currency movements, and then created phoney contracts to offset those trades after they went sour. The $750 million loss is the sixth-largest "rogue trader" loss since 1987. Already, comparisons are being made between Mr. Rusnak, 37, and Nick Leeson.

Subsequent to the collapse of Barings, SIMEX also reviewed its regulatory rules, auditing, surveillance, and clearing practices, as well as exchange-wide systems to strengthen safeguards against settlement risks. According to Lall and Liu, SIMEX appointed an international advisory panel comprised of distinguished professionals and regulators from the international futures industry to seek advice on the best practices in global futures exchanges and to identify areas for cooperation with other futures exchanges. As Leeson had been based in Singapore, officials there attempted to improve supervisory coordination for futures trading in an increasingly global environment. As a result, SIMEX appointed Dr. Roger Rutz as its consultant on risk management.

The international advisory panel recommended:

(1) The enhancement of customer protection rules;

(2) An upgrading of the clearing system and procedures to incorporate real-time settlement and critical risk management systems;

(3) The promotion of information sharing among exchanges;

(4) The imposition of a requirement that clearing firms register senior officers with SIMEX;

(5) The strengthening of SIMEX's Market Surveillance Department; and,

(6) Enhancements to the large trade reporting system.

Dr. Rutz's recommendations addressed all areas of SIMEX's operations, with an emphasis on risk management, capital requirements, and the clearing system; his major suggestions included:

- Devising comprehensive internal risk analysis procedures to identify high risk accounts and members in need of closer monitoring. These procedures would include stress testing of positions, analysis of daily settlements and margin calls, as well as analysis of position and market concentration.
- Enhancing SIMEX's monitoring ability, including notification by member firms when a margin call is issued for any account in excess of their adjusted net capital, reporting large positions, aggregation of accounts, and reconciliation of reported positions.
- Increasing SIMEX's power to control or direct the operations of member firms in highly vulnerable positions.
- Regulating higher position limits through explicit hedging, arbitrage, risk management, and other qualitative and financial exposure criteria.
- Establishing procedures to manage high risk situations including improved information-gathering to help evaluate challenging situations, and improved default procedures to transfer to other clearing members, in bulk, those positions carried by defaulting brokers who threaten the system's integrity.

Conclusion

The research showed that the now-infamous Singapore-based derivatives trader, Nicholas Leeson, drove Britain’s venerable Barings Bank to bankruptcy. Although the evidence to date suggests that Leeson was in fact involved in shady deals, it appears that other factors were also involved in the bank’s collapse. Leeson’s superior knew, or should have known, what the trader was up to, and had been provided with advance notice concerning his activities. Furthermore, Leeson was not the only trader engaged in such activities, and the philosophy of many financial institutions of the day appeared to encourage the sorts of techniques employed by Leeson. In the final analysis, the Leeson case demonstrates what can happen when one individual is entrusted with too much power, and only time will tell if the remedial steps taken since then will preclude such recurrences in the future.

	1) Explain the profile, responsibility and the crime committed by Nick Lesson, which led to the bankrupt of the company? 1.) Identify the factors that have contributed to the $1.4-billion trading fraud and suggest ways in which it could have been avoided?		