

M.B.A. DEGREE EXAMINATIONS: NOVEMBER 2009

Fourth Trimester

P07BA413 INTERNATIONAL FINANCIAL MANAGEMENT

Time: Three Hours

Maximum Marks: 100

Answer ALL Questions:-

PART A (1 x 20 = 20 Marks)

1. Case Study

John Meriwether, who founded Long-Term Capital Partners in 1993, had been head of fixed income trading at Salomon Brothers. Even when forced to leave Salomon in 1991, in the wake of the firm's treasury auction rigging scandal (another marker buoy), Meriwether continued to command huge loyalty from a team of highly cerebral relative-value fixed income traders, and considerable respect from the street.

Teamed up with a handful of these traders, two Nobel laureates, Robert Merton and Myron Scholes, and former regulator David Mullins, Meriwether and LTCM had more credibility than the average broker/dealer on Wall Street.

It was a game, in that LTCM was unregulated, free to operate in any market, without capital charges and only light reporting requirements to the US Securities & Exchange Commission (SEC). It traded on its good name with many respectable counterparties as if it was a member of the same club. That meant an ability to put on interest rate swaps at the market rate for no initial margin - an essential part of its strategy. It meant being able to borrow 100% of the value of any top-grade collateral, and with that cash to buy more securities and post them as collateral for further borrowing: in theory it could leverage itself to infinity. In LTCM's first two full years of operation it produced 43% and 41% return on equity and had amassed an investment capital of \$7 billion.

Meriwether was renowned as a relative-value trader. Relative value means (in theory) taking little outright market risk, since a long position in one instrument is offset by a short position in a similar instrument or its derivative. It means betting on small price differences which are likely to converge over time as the arbitrage is spotted by the rest of the market and eroded. Trades typical of early LTCM were, for example, to buy Italian government bonds and sell German Bund futures; to buy theoretically underpriced off-the-run US treasury bonds (because they are less liquid) and go short on-the-run (more liquid) treasuries. It played the same arbitrage in the interest-rate swap market, betting that the spread between swap rates and the most liquid treasury bonds would narrow. It played long-dated callable Bunds against Dm swaptions. It was one of the biggest players on the world's futures exchanges, not only in debt but also equity products.

To make 40% return on capital, however, leverage had to be applied. In theory, market risk isn't increased by stepping up volume, provided you stick to liquid instruments and don't get so big that you yourself become the market.

Some of the big macro hedge funds had encountered this problem and reduced their size by giving money back to their investors. When, in the last quarter of 1997 LTCM returned \$2.7 billion to investors, it was assumed to be for the same reason: a prudent reduction in its positions relative to the market.

But it seems the positions weren't reduced relative to the capital reduction, so the leverage increased. Moreover, other risks had been added to the equation. LTCM played the credit spread between mortgage-backed securities (including Danish mortgages) or double-A corporate bonds and the government bond markets. Then it ventured into equity trades. It sold equity index options, taking big premium in 1997. It took speculative positions in takeover stocks, according to press reports. One such was Tellabs whose share price fell over 40% when it failed to take over Ciena, says one account. A filing with the SEC for June 30 1998 showed that LTCM had equity stakes in 77 companies, worth \$541 million. It also got into emerging markets, including Russia. One report said Russia was "8% of its book" which would come to \$10 billion!

Some of LTCM's biggest competitors, the investment banks, had been clamouring to buy into the fund. Meriwether applied a formula which brought in new investment, as well as providing him and his partners with a virtual put option on the performance of the fund. During 1997, under this formula [see separate section below, titled UBS Fiasco], UBS put in \$800 million in the form of a loan and \$266 million in straight equity. Credit Suisse Financial Products put in a \$100 million loan and \$33 million in equity. Other loans may have been secured in this way, but they haven't been made public. Investors in LTCM were pledged to keep in their money for at least two years.

LTCM entered 1998 with its capital reduced to \$4.8 billion.

A New York Sunday Times article says the big trouble for LTCM started on July 17 when Salomon Smith Barney announced it was liquidating its dollar interest arbitrage positions: "For the rest of the that month, the fund dropped about 10% because Salomon Brothers was selling all the things that Long-Term owned." [The article was written by Michael Lewis, former Salomon bond trader and author of Liar's Poker. Lewis visited his former colleagues at LTCM after the crisis and describes some of the trades on the firm's books]

On August 17,1998 Russia declared a moratorium on its rouble debt and domestic dollar debt. Hot money, already jittery because of the Asian crisis, fled into high quality instruments. Top preference was for the most liquid US and G-10 government bonds. Spreads widened even between on- and off-the-run US treasuries.

Most of LTCM's bets had been variations on the same theme, convergence between liquid treasuries and more complex instruments that commanded a credit or liquidity premium. Unfortunately convergence turned into dramatic divergence.

LTCM's counterparties, marking their LTCM exposure to market at least once a day, began to call for more collateral to cover the divergence. On one single day, August 21, the LTCM portfolio lost \$550 million, writes Lewis. Meriwether and his team, still convinced of the logic behind their trades, believed all they needed was more capital to see them through a distorted market.

Perhaps they were right. But several factors were against LTCM.

1. Who could predict the time-frame within which rates would converge again?
2. Counterparties had lost confidence in themselves and LTCM.
3. Many counterparties had put on the same convergence trades, some of them as disciples of LTCM.
4. Some counterparties saw an opportunity to trade against LTCM's known or imagined positions.

In these circumstances, leverage is not welcome. LTCM was being forced to liquidate to meet margin calls.

On September 2, 1998 Meriwether sent a letter to his investors saying that the fund had lost \$2.5 billion or 52% of its value that year, \$2.1 billion in August alone. Its capital base had shrunk to \$2.3 billion. Meriwether was looking for fresh investment of around \$1.5 billion to carry the fund through. He approached those known to have such investible capital, including George Soros, Julian Robertson and Warren Buffett, chairman of Berkshire Hathaway and previously an investor in Salomon Brothers [LTCM incidentally had a \$14 million equity stake in Berkshire Hathaway], and Jon Corzine, then co-chairman and co-chief executive officer at Goldman Sachs, an erstwhile classmate at the University of Chicago. Goldman and JP Morgan were also asked to scour the market for capital.

But offers of new capital weren't forthcoming. Perhaps these big players were waiting for the price of an equity stake in LTCM to fall further. Or they were making money just trading against LTCM's positions. Under these circumstances, if true, it was difficult and dangerous for LTCM to show potential buyers more details of its portfolio. Two Merrill executives visited LTCM headquarters on September 9, 1998 for a "due diligence meeting", according to a later Financial Times report (on October 30, 1998). They were provided with "general information about the fund's portfolio, its strategies, the losses to date and the intention to reduce risk". But LTCM didn't disclose its trading positions, books or documents of any kind, Merrill is quoted as saying.

The US Federal Reserve system, particularly the New York Fed which is closest to Wall Street, began to hear concerns about LTCM from its constituent banks. In the third week of September, Bear Stearns, which was LTCM's clearing agent, said it wanted another \$500 million in collateral to continue clearing LTCM's trades. On Friday September 18, 1998, New York Fed chairman Bill McDonough made "a series of calls to senior Wall Street officials to discuss overall market conditions", he told the House Committee on Banking and Financial Services on October 1. "Everyone I spoke to that day volunteered concern about the serious effect the deteriorating situation of Long-Term could have on world markets."

Peter Fisher, executive vice president at the NY Fed, decided to take a look at the LTCM portfolio. On Sunday September 20, 1998, he and two Fed colleagues, assistant treasury secretary Gary Gensler, and bankers from Goldman and JP Morgan, visited LTCM's offices at Greenwich, Connecticut. They were all surprised by what they saw. It was clear that, although LTCM's major counterparties had closely monitored their bilateral positions, they had no inkling of LTCM's total off balance sheet leverage. LTCM had done swap upon swap with 36 different counterparties. In many cases it had put on a new swap to reverse a position rather than unwind the first swap, which would have required a mark-to-market cash payment in one direction or the other. LTCM's on balance sheet assets totalled around \$125 billion, on a capital base of \$4 billion, a leverage of about 30 times. But that leverage was increased tenfold by LTCM's off balance sheet business whose notional principal ran to around \$1 trillion.

The off balance sheet contracts were mostly nettable under bilateral Isda (International Swaps & Derivatives Association) master agreements. Most of them were also collateralized. Unfortunately the value of the collateral had taken a dive since August 17.

Surely LTCM, with two of the original masters of derivatives and option valuation among its partners, would have put its portfolio through stress tests to match recent market turmoil. But, like many other value-at-risk (Var) modellers on the street, their worst-case scenarios had been outplayed by the horribly correlated behaviour of the market since August 17. Such a flight to quality hadn't been predicted, probably because it was so clearly irrational.

According to LTCM managers their stress tests had involved looking at the 12 biggest deals with each of their top 20 counterparties. That produced a worst-case loss of around \$3 billion. But on that Sunday evening it seemed the mark-to-market loss, just on those 240-or-so deals, might reach \$5 billion. And that was ignoring all the other trades, some of them in highly speculative and illiquid instruments.

The next day, Monday September 21, 1998, bankers from Merrill, Goldman and JP Morgan continued to review the problem. It was still hoped that a single buyer for the portfolio could be found - the cleanest solution.

According to Lewis's article LTCM's portfolio had its second biggest loss that day, of \$500 million. Half of that, says Lewis, was lost on a short position in five-year equity options. Lewis records brokers' opinion that AIG had intervened in thin markets to drive up the option price to profit from LTCM's weakness. At that time, as was learned later, AIG was part of a consortium negotiating to buy LTCM's portfolio. By this time LTCM's capital base had dwindled to a mere \$600 million. That evening, UBS, with its particular exposure on a \$800 million credit, with \$266 million invested as a hedge, sent a team to Greenwich to study the portfolio.

The Fed's Peter Fischer invited those three banks and UBS to breakfast at the Fed headquarters in Liberty Street the following day. The bankers decided to form working groups to study possible market solutions to the problem, given the absence of a single buyer. Proposals included buying LTCM's fixed income positions, and "lifting" the equity positions (which were a mixture of index spread trades and total return swaps, and the takeover bets).

During the day a third option emerged as the most promising: seeking recapitalization of the portfolio by a consortium of creditors.

But any action had to be taken swiftly. The danger was a single default by LTCM would trigger cross-default clauses in its Isda master agreements precipitating a mass close-out in the over-the-counter derivatives markets. Banks terminating their positions with LTCM would have to rebalance any hedge they might have on the other side. The market would quickly get wind of their need to rebalance and move against them. Mark-to-market values would descend in a vicious spiral. In the case of the French equity index, the CAC 40, LTCM had apparently sold short up to 30% of the volatility of the entire underlying market. The Banque de France was worried that a rapid close-out would severely hit French equities. There was a wider concern that an unknown number of market players had convergence positions similar or identical to those of LTCM. In such a one-way market there could be a panic rush for the door.

A meltdown of developed markets on top of the panic in emerging markets seemed a real possibility. LTCM's clearing agent Bear Stearns was threatening to foreclose the next day if it didn't see \$500 million more collateral. Until now, LTCM had resisted the temptation to draw on a \$900 million standby facility that had been syndicated by Chase Manhattan Bank, because it knew that the action would panic its counterparties. But the situation was now desperate. LTCM asked Chase for \$500 million. It received only \$470 million since two syndicate members refused to chip in.

To take the consortium plan further, the biggest banks, either big creditors to LTCM, or big players in the over-the-counter markets, were asked to a meeting at the Fed that evening. The plan was to get 16 of them to chip in \$250 million each to recapitalize LTCM at \$4 billion.

The four core banks met at 7pm and reviewed a term sheet which had been drafted by Merrill Lynch. Then at 8.30 bankers from nine more institutions showed. They represented: Bankers Trust, Barclays, Bear Stearns, Chase, Credit Suisse First Boston, Deutsche Bank, Lehman Brothers, Morgan Stanley, Credit Agricole, Banque Paribas, Salomon Smith Barney, Societe Generale. David Pflug, head of global credit risk at Chase warned that nothing would be gained a) by raking over the mistakes that had got them in this room, and b) by arguing about who had the biggest exposure: they were all in this equally and together.

The delicate question was how to preserve value in the LTCM portfolio, given that banks around the room would be equity investors, and yet, at the same time, they would be seeking to liquidate their own positions with LTCM to maximum advantage. It was clear that John Meriwether and his partners would have to be involved in keeping such a complex portfolio a going concern. But what incentive would they have if they no longer had an interest in the profits? Chase insisted that any bailout would first have to return the \$470 million drawn down on the syndicated standby facility. But nothing could be finalized that night since few of the representatives present could pledge \$250 million or more of their firm's money.

The meeting resumed at 9.30 the next morning. Goldman Sachs had a surprise: its client, Warren Buffett, was offering to buy the LTCM portfolio for \$250 million, and recapitalize it with \$3 billion from his Berkshire Hathaway group, \$700 million from AIG and \$300 million from Goldman. There would be no management role for Meriwether and his team. None of

LTCM's existing liabilities would be picked up, yet all current financing had to stay in place. Meriwether had until 12.30 to decide.

By 1pm it was clear that Meriwether had rejected the offer, either because he didn't like it, or, according to his lawyers, because he couldn't do so without consulting his investors, which would have taken him over the deadline.

The bankers were somewhat flabbergasted by Goldman's dual role. Despite frequent requests for information about other possible bidders, Goldman had dropped no hint at previous meetings that there was something in the pipeline. Now the banks were back to the consortium solution. Since there were only 13 banks, not 16, they'd have to put in more than \$250 million each. Bear Stearns offered nothing, feeling that it had enough risk as LTCM's clearing agent. [Their special relationship may have been the source of some acrimony: LTCM had an \$18 million equity stake in Bear Stearns, matched by investments in LTCM of \$10 million each by Bear Stearns principals James Cayne and Warren Spector]. Lehman Brothers also declined to participate. In the end 11 banks put in \$300 million each, Societe Generale \$125 million, and Credit Agricole and Paribas \$100 million each, reaching a total fresh equity of \$3.625 billion. Meriwether and his team would retain a stake of 10% in the company. They would run the portfolio under the scrutiny of an oversight committee representing the new shareholding consortium.

The message to the market was that there would be no fire-sale of assets. The LTCM portfolio would be managed as a going concern.

In the first two weeks after the bail-out, LTCM continued to lose value, particularly on its dollar/yen trades, according to press reports which put the loss at \$200 million to \$300 million. There were more attempts to sell the portfolio to a single buyer. According to press reports the new LTCM shareholders had further talks with Buffett, and with Saudi prince Alwaleed bin talal bin Abdelaziz. But there was no sale. By mid-December, 1998 the fund was reporting a profit of \$400 million, net of fees to LTCM partners and staff.

In early February, 1999 there were press reports of divisions between banks in the bailout consortium, some wishing to get their money out by the end of the year, others happy to "stay for the ride" of at least three years. There was also a dispute about how much Chase was charging for a funding facility to LTCM. Within six months there were reports that Meriwether and some of his team wanted to buy out the banks, with a little help from their friend Jon Corzine, who was due to leave Goldman Sachs after its flotation in May, 1999.

By June 30, 1999 the fund was up 14.1%, net of fees, from last September. Meriwether's plan approved by the consortium, was apparently to redeem the fund, now valued at around \$4.7 billion, and to start another fund concentrating on buyouts and mortgages. On July 6, 1999, LTCM repaid \$300 million to its original investors who had a residual stake in the fund of around 9%. It also paid out \$1 billion to the 14 consortium members. It seemed Meriwether was bouncing back.

Question:-

1. Discuss on the reason for the downfall of the LTCM fund.

PART B (10 x 2 = 20 Marks)

2. What is Capital Account Convertibility?
3. Define Special Drawing rights.
4. Define Transaction Exposure.
5. If the yen is selling at a premium relative to the euro in the forward market, is the forward price of EUR/JPY larger or smaller than the spot price of EUR/JPY?
6. Difference between future hedge and forward hedge.
7. Define Exposure Netting.
8. What do you mean by forfeiting?
9. Difference between revocable and irrevocable L/C.
10. Define Eurodollar Bond.
11. Expand IBRD and ADB.

PART C (4 x 15 = 60 Marks)

12. a. Discuss on India's Balance of Payment with rising crude oil prices.

(OR)

- b. What was the Bretton Woods currency system?

13. a. Discuss with an example each, the various types of currency exposures faced by a firm. Do you agree with the following statement :

“The only exposure that really matters is operating exposure which cannot be hedged; with efficient money and foreign exchange markets and rational investors, hedging activities are a waste of time and resources”. Give reasons whether you agree or disagree.

(OR)

- b. In London, a dealer quotes:

GBP/CHF Spot: 3.5250/55

GBP/JPY Spot: 180.80/181.30

- (i) What do you expect the CHF/JPY rate to be in Geneva?
- (ii) Suppose that in Geneva you get a quote CHF/JPY spot 51.1530/51.2550. Is there an arbitrage opportunity?

14. a. Discuss and explain the various determinants of European foreign currency call and put option values. Explain the influence of each of the factors separately.

(OR)

b. What is meant by exchange-rate overshooting? What is the economic explanation underlying such behaviour?

15. a. An American firm has a EUR 70 million, 180-day payable. The market rates are:

EUR/USD spot : 0.8733/41 180 day Swap : 167/175
EUR interest rate : 3.90/4.10 USD interest rate : 7.95/8.05

- (i) How much will it have to pay if it covers the payable forward?
- (ii) How much will the outflow be if it covers via money market?
- (iii) If it decides to lead the payment, how much would it cost?

(OR)

b. Explain the concept of investing via deposit receipts schemes say ADRs or GDRs to achieve international diversification.
