

EXAMINATION

September 2006

Subject SA5 — Finance Specialist Applications

EXAMINERS' REPORT

Introduction

The attached subject report has been written by the Principal Examiner with the aim of helping candidates. The questions and comments are based around Core Reading as the interpretation of the syllabus to which the examiners are working. They have however given credit for any alternative approach or interpretation which they consider to be reasonable.

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Chairman of the Board of Examiners

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Comments

Individual comments are shown after each part question.

- 1 (i)
- Alternative 1: Overseas inflation index linked securities plus currency hedge
 - Alternative 2: Local nominal bonds plus local RPI swap

This question called for the student to present two alternatives; where students presented answers that were less obvious, it was important to include acknowledgement of mismatching or similar issues with their answers. Without this, their proposals would not have scored well.

- (ii) Potential risk, depending on the alternative offered, and their mitigations include:
- Sovereign risk (e.g. assets being expropriated); mitigate by choosing appropriate foreign issuer e.g. G7 issuers only.
 - Currency risk; mitigate by using FX forwards or swaps.
 - Basis risk (i.e. mismatched foreign vs local RPI); mitigation hard! possible foreign vs. RPI swap and probably in the over the counter market
 - Credit risk (default of investment bank issuing a derivative); mitigate by using swaps in place of forwards and / or trading with well-capitalised investment banks and/or have spread of counterparties.
 - Liquidity risk (unable to find enough volume when needed by sales of product); mitigate by controlling sales activity.

This question was looking for investment risks, not operational or business risks — students confused these in some cases — and for ways of mitigating these. Students failed to score marks in several cases by stating a risk without explaining why it was relevant or how it could be mitigated.

- (iii) Risk report
- Product risk — product definition, development team, technical, programmatic, quality and legal, sales and distribution (manufacturing not relevant).
 - Operational risk — IT systems, accounting, product liability if guarantee not met, we have no balance sheet.
 - Technology risk — are IT systems able to cope with the product? Trading and settling unusual instruments? Volume of business acceptable given system resources?
 - Compliance risk — regulatory approval required. New counterparties. The licences necessary to carry out this business

Several students did well however others did not make the connection or did not tie the headings to the situation at hand.

2

(i) Role of clearing house

- Clearing house acts to protect the integrity of the market by standardising trades and ensuring settlement
- Clearing house becomes the principal to each matched contract through novation (taking over the position of one side of every trade); it therefore acts to fulfil in the first instance the obligation (position) of a defaulted broker-trader.
- Operates centralised settlement process.
- Operate netting of purchase, sale and collateral payments and receipts within each currency block.
- Operate margining process (calculating amounts, managing / demanding cashflows, operate potential central bank account)
- As an example of an international clearing house, the London Clearing House (LCH) guarantees trades registered by its members. The LCH performs the above role/services for LIFFE, Tradepoint, the International Petroleum Exchange and the London Metal Exchange. The Board of Trade Clearing Corporation is another clearing house operating in Chicago.

This question was about the role of the clearing house. Several students provided unrelated information about the role of the exchange itself (e.g. market surveillance) for which no marks were obtained.

(ii) Trading system

- Aim for real-time prices, preferably electronically accessible.
- Trading could take place by open outcry which involves independent market makers and traders shouting their offers to each other on a trading floor.
- An electronic exchange by contrast does not have a trading floor. All offers to trade are entered into a computer system and trades are made according to the rules of the exchange e.g. timing, amount, matching different orders etc..
- Globally, electronic trading takes place through the trading platforms like Retail Automated Execution Service (RAES), Auto Quote, the Electronic Book and CBOEdirect. Euronext/LIFFE is an electronic exchange.
- Open outcry not very efficient although still used in places; it may not be fully compatible with the objective of real-time pricing.
- Best practice is to operate an electronic exchange.
- Need to decide whether to employ a system of market makers, who are obliged to trade in a specified quantity of a security / derivative at all times.
- The exchange needs to define the type of orders that traders can place. for example “fill-or-kill” orders, “good till cancelled orders”.
- Need to decide between a quote driven market (where traders enter continuous two-way prices quotations) or an order driven market (where buy/sell orders are entered into a central system and matched – usually in real time – according to an algorithm)
- Need to decide the approach used for market surveillance, including the data that is kept and the personnel employed

- Need to decide how and to whom direct access to the market is granted, e.g. traders, banks, investment houses
- Need to decide how to disseminate prices to the public, e.g. through a daily newspaper, through a global data vendor.

Marks were available for defining and describing the various trading systems. Also, the question was testing the student's understanding of the features of trading systems, including data access, price dissemination, whether to have market makers etc.

(iii) Margining procedure

- Decide level of and relationship between client margin (paid by the external client) vs. broker margin (paid by the broker to the clearing house).
- Need to determine the frequency of margin calls (probably daily with an option to make intra-day calls if market movements are severe).
- Determine the level of and relationship between initial margin vs. variation margin.
- Initial margin covers the maximum expected one-day loss; variation margin covers (accumulated) losses to date since opening a position.
- Require some form of risk model to compute initial margin.
- Risk model could be scenario-based (using deterministic changes in market prices) or simulation-based (e.g. using a Monte Carlo technique to assess portfolio behaviour under different states).
- Margining procedure should take into account changes in inter-month spreads, lack of perfect correlation between certain positions which may be based on identical assets.
- Need to decide how much credit to allow for offsetting/nearly offsetting positions.
- Clearing house should calculate margin in an unambiguous way and monitor the level of margin continuously.
- Clearing house will require a system for collecting and safekeeping of margin collateral.
- Need to decide what form to accept collateral in? e.g. bank deposits? gilts?
- Need to decide how to deal with member defaults / non-payments

- 3 (i)
- Management has an incentive for an all-or-nothing approach if the firm appears doomed (creates undesirable high volatility of business outcomes for shareholders).
 - Management may choose high risk projects and investments (again, highly volatile outcomes for shareholders).
 - Management may sell promising assets to raise cash to fund less promising ones (shareholders lose on what they've built up to date; may also change the nature of the business).
 - Management may aggressively reduce costs by compromising on R&D / product quality / employee safety (this may jeopardise future earnings or introduce the risk of product recalls / liability lawsuits later).
 - Management may cut back reinvestment into asset stock (this may require a substantial cash call to rectify later).

This question is about the management / shareholder agency problem, not about corporate governance or distressed firm actions in general.

(ii) Find value of assets:

• Printing press	$400,000 - 10,000 =$	390,000
• Trade creditors	$200,000 \times (1 - 0.25) =$	150,000
• Vehicle		25,000
• Trademarks	0 (worthless in liquidation)	
• Total		565,000

Find payout for bonds/equities.

Starting asset stock: £565,000.

Trust certificates get £390,000 from printing press; leaves £110,000 unsatisfied, which is add to junior bonds.

Remaining assets drop to $£565,000 - £390,000 = £175,000$

Senior bonds get £100,000, being £1 per security given 100,000 outstanding.

Remaining assets drop to $£175,000 - £100,000 = £75,000$.

Outstanding junior bonds plus balance of trust certificate
= $£50,000 + £110,000 = £160,000$ outstanding.

However assets are insufficient so partial payout made of
 $75,000 / 160,000 = 0.46875$ of demand.

So junior bonds get 46.875p per £1 outstanding.

Trust certificates get total of $£390,000 + 0.46875 \times £110,000 = £441,562.50$ which is $441,562.50 / 500,000$ per bond or 88.3125p.
Equity gets nothing.

Some students were able to score full marks on this question. The difficult piece of was what value to place on the trademarks, which should have been close to nil given the company is being liquidated. However, some students continued to value them at full which rendered the remaining calculations around apportioning payouts meaningless as there were now sufficient assets in the company to cover all liabilities. Students who did not show workings were likely to score fewer marks as it was not clear how they had arrived at their answers.

(iii)

- Trade volumes likely to be very small (tiny company to begin with, now unlisted).
- Bid / offer spread will be very wide; how to value — at bid? at mid?
- Quoted prices probably not reliable and unlikely to be firm in any size.
- May be no quote at all at certain times.
- Price will be very volatile and moved by small trades.
- Client could look for direct buyer rather than going through broker.
- Trade could be executed in tranches to reduce market impact of each one

(iv)

- Potential to buy company at less than replacement cost given liquidation
- Established firm with clients and brand rather than starting from nil.
- Private equity company may have no direct exposure/experience of print industry and desire the retain some of the incumbent management.
- However incumbents have not succeeded to date — need to understand reasons and possibly seek selective retention of staff.
- Existing company has been making losses and may provide a tax shield against earnings for a period of time

(v)

- Valuation of goodwill/brand.
- Determining staff relationships, any long-term management contracts since they are currently the majority owners.
- Assessing the probability of getting the trade debtors to pay.
- The scope and comprehensiveness of the valuation will depend on the purchaser's access to data
- Must be an agreed takeover since management are majority owners.
- Ability to renegotiate terms of existing securities (e.g. could we achieve a conversion of debt into equity?)
- Any special analysis features of this industry (e.g. competitive landscape, industry consolidation / expansion)

END OF EXAMINERS' REPORT