

MOCK TEST PAPER 1
FINAL (NEW) COURSE: GROUP – II
PAPER – 6A: RISK MANAGEMENT

Solutions

Note: Please note these solutions are for guidance purpose only.

ANSWERS TO CASE STUDY: 1

1.1 Working Notes:

(a) Profitability Ratios

	31.03.2018	31.03.2019
(i) Gross Profit Ratio	$\frac{\text{Gross Profit}}{\text{Sales}} \times 100$ $= \frac{3,29,127}{14,46,791} \times 100$ $= 22.75\%$	$\frac{\text{Gross Profit}}{\text{Sales}} \times 100$ $= \frac{3,36,905}{14,69,762} \times 100$ $= 22.92\%$
(ii) Net Profit Ratio	$\frac{\text{Net Profit}}{\text{Sales}} \times 100$ $= \frac{85,304}{14,46,791} \times 100$ $= 5.896\%$	$\frac{\text{Net Profit}}{\text{Sales}} \times 100$ $= \frac{93,410}{14,69,762} \times 100$ $= 6.355\%$
(iii) Return on Capital Employed	$\frac{\text{Operating Profit}}{\text{Capital Employed}} \times 100$ $= \frac{58,455}{5,90,392} \times 100$ $= 9.90\%$	$\frac{\text{Operating Profit}}{\text{Capital Employed}} \times 100$ $= \frac{69,648}{5,11,297} \times 100$ $= 13.62\%$

(b) Performance Ratios

	31.03.2018	31.03.2019
(i) Inventory Turnover Ratio	$\frac{\text{Cost of Goods Sold}}{\text{Closing Inventory}}$ $= \frac{1,117,664}{22,200}$ $= 50.34 \text{ times}$	$\frac{\text{Cost of Goods Sold}}{\text{Closing Inventory}}$ $= \frac{1,132,857}{19,100}$ $= 59.31 \text{ times}$
(ii) Debtor Turnover Ratio	$\frac{\text{Sales}}{\text{Closing Debtors}}$ $= \frac{14,46,791}{3,66,246}$ $= 3.95 \text{ times}$	$\frac{\text{Sales}}{\text{Closing Debtors}}$ $= \frac{14,69,762}{3,08,547}$ $= 4.76 \text{ times}$

(c) **Liquidity Ratios**

	31.03.2018	31.03.2019
(i) Current Ratio	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$ $= \frac{763,428}{395,337}$ $= 1.93 : 1$	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$ $= \frac{679,539}{382,908}$ $= 1.77 : 1$

Analytical Report

To: The Management

From: Chief Risk Officer

Date: 15 October 2019

Subject: Analytical Report on Financial Risks Involved

Introduction

This analytical report covers Performance, Profitability, Working Capital Management, Liquidity etc.

Performance: Performance of the company has been improved in the year ending 31.03.2019 as the Inventory Turnover and Debtor's Turnover Ratios have been improved.

Profitability: So far as the profitability of the company is concerned there is no improvement in the Gross Profit Ratio which is almost same. Though some improvement is there in Net Profit Ratio and Return on Capital Employed.

Working Capital Management: On this front company is performing well as company is reducing the investment in the stock or inventory. However, it appears that company is not using the available credit facilities from the supplier by paying off the old payables.

Liquidity: From the Current Ratio it appears that company enjoys a comfortable liquidity situation.

Conclusion: Presently company is not facing any major risk.

Signed/-

Chief Risk Officer

1.2 (D)

1.3 (C)

1.4 (D)

1.5 (C)

1.6 (B)

ANSWERS TO CASE STUDY: 2

2.1 Report to Ms. X

To: Ms. X

From: Chief Risk Officer

Date: 15 October 2019

Subject: Grading/ Bucketing of Various Risks

Introduction

This report covers grading/ bucketing of various identified risks by the client.

Grading of various Risks

(1) Stagnant business growth resulting from competition from other airlines.

Although this risk has a high impact but has low probability as investment involved in the Airline business is very huge. Accordingly, this risk often skips the management's decision as these type events cannot be foreseen. Hence, this risk is bucked in the category of '**High Impact – Low Probability**'.

(2) Aggressive fleet expansion leading to over-capacities.

Since Airline has already ordered 170 aircrafts there is high probability that it will involve financial commitments and impact will also be high. Hence, this risk is bucked in the category of '**High Impact – High Probability**' and it needs immediate and sufficient attention of management.

(3) Safety Standards resulting in Crash/ disastrous hijacking

Any crash or dangerous hijacking incidents will create negative publicity, poor image resulting in a decline in revenue and similar consequences.

Whilst the probability is low, the strong impact ought to force the seeking of appropriate mitigants. Hence, the impact is high and can be classified as '**Low Probability – High Impact**'. It is suggested to ensure the adequacy of safety systems, to establish the average age of the aircraft and if necessary, to seek the help of an external expert.

(4) Volatile Oil Prices

Oil price fluctuation is a business risk that has serious implications for the profitability of the airline business. However, since this affects almost all competitors, the impact can be considered as low and can be categorized as '**Low Probability – Low Impact**'.

Signed/-

Chief Risk Officer

2.2 (A)

2.3 (B)

2.4 (A)

2.5 (B)

2.6 (A)

ANSWERS TO CASE STUDY: 3

3.1 To: The Management

From: Chief Risk Officer

Date: 15 October 2019

Subject: Key risks affecting the company

This report covers some of the key risks affecting the Company are illustrated below:

- (a) **Economic Risk:** Due to increase in the cost of number of inputs and raw materials used by the Company, it is faced with the threat of pressure on margins on sales. To counter this, the Company has taken various steps including backward integration which comprises own coal mines and iron mines and brownfield expansions e.g. sinter plant, setting up sponge iron plant, coke oven plant, power plant from waste heat recovery, upgrading and expanding manufacturing capacities and increasing efforts on R&D. In addition, cost control measures are an ongoing process.

To avoid price volatility for critical items, the company can attempt to enter into long term contracts.

- (b) **Competitor Risk:** The quality improvement efforts have established the brand image of the product as the most preferred brand with the customers. With the thrust given by Government of India on water and water related projects and with the estimated growth in water requirement, the demand of DI pipes is expected to grow substantially, and the company is confident of retaining its market share.
- (c) **Foreign Exchange Risk:** Considering the large export and imports of raw material, the Company is exposed to the risk of fluctuation in the exchange rates.

The Company has adopted a comprehensive risk management review system wherein it actively hedges its foreign exchange exposures within defined parameters, through use of hedging instruments such as forward contracts, options and swaps. The company periodically reviews and audits its risk management initiatives through an independent expert.

- (d) **Industrial Risk:** The company is exposed to labour unrest risk, which may lead to production slowdown ultimately resulting in plant shutdown.

Labour relations have been excellent throughout the year in spite of number of unions. It is result of such cordial and harmonious relations that not a single man-day has been lost in the last 8 years. The Company believes that labour relations will continue to remain excellent.

- (e) **Environment Risk:** The company is exposed to the risk of Environment and Pollution Controls, which is associated with such types of industries.

The Company is committed to the conservation of the environment and has adopted the latest technology for pollution control. The Company is ISO-14001-2004 certified and is adhering strictly to the emission norms applicable for the industry.

- (f) **Payment Risk:** The company is exposed to the risk of defaults by the customers in payments.

Since major water infrastructure projects are government founded or foreign aided, the risk involved in payment defaults is minimum. Further, evaluation of the credit worthiness of the customers has minimized the risk of default by other segment customer. Besides, the risk of export receivables is covered under Credit Insurance.

Signed/-

(Risk Manager)

3.2 (D)

3.3 (B)

3.4 (C)

3.5 (A)

3.6 (B)

ANSWERS TO CASE STUDY: 4

4.1 Report to Board of Directors

To: The Board of Directors, ABC Co. Ltd.

From: Chief Risk Officer

Date: 15 October 2019

Subject: Analytical Report on Risks Involved

This analytical report covers the reply on the various concerns raised by the Board of Directors.

(a) What is the type of the risk the Company is subject to?

The risk arising from this lapse is 'Legal Risk' or 'Compliance Risk' as it is resulting from the failure to comply with statutory or legal requirements.

(b) Impact on Company's Performance

The various types of impacts on the company's performance are as follows:

- (i) Bringing bad name and reputation for the Company.
- (ii) Over or Under Statement of Profit Loss in Income Statement of Company leading wrong decisions by the Company itself and external parties.
- (iii) Wrong financial position of the Company in the Balance Sheet.
- (iv) Due to wrong calculation of profit company may have paid wrong dividend in previous years.
- (v) Wrong computation of Cash Flows of the previous years and consequently leading to wrong budgeting figures.
- (vi) Wrong decision based on wrong budgeted figures.

Signed/-

Chief Risk Officer

4.2 (B)

4.3 (B)

4.4 (A)

4.5 (D)

4.6 (C)

ANSWERS TO CASE STUDY: 5

5.1 (a) Key features of RBI guidelines on CDS

- Participants in the CDS market are classified as either users or market makers. User entities are permitted to buy credit protection (buy CDS contracts) only to hedge their underlying credit risk on corporate bonds. Such entities are not permitted to hold credit protection without having eligible underlying as a hedged item. The users cannot buy CDS for amounts higher than the face value of corporate bonds. This is the most important point of difference, as there was no such limitation in United States of America prior to 2008, and hence many Institutional players had taken huge long positions (in CDS) without having any exposure to reference asset.
- Since the users are envisaged to use the CDS only for hedging their credit risks, assumed due to their investment in corporate bonds, they shall not, at any point of time, maintain naked CDS protection i.e. CDS purchase position without having an eligible underlying bonds held by them and for periods longer than the tenor of corporate bonds held by them.
- The eligible entities under user's category would be Commercial Banks, PDs, NBFCs, Mutual Funds, Insurance Companies, Housing Finance Companies, Provident Funds, Listed Corporates, Foreign Institutional Investors (FIIs) and any other institution specifically permitted by the Reserve Bank of India.
- CDS will be allowed only on listed corporate bonds as reference obligations. However, CDS can also be written on unlisted but rated bonds of infrastructure companies. This is another major area of difference between the US markets and RBI guidelines. In United States of America, the CDS were written on various pass through securities like Mortgage Backed Security (MBS), Collateralized Debt Obligation (CDO) etc, whereas as per the RBI

guidelines, the CDS are specifically restricted for listed corporate bonds, the obvious reason being that there is no big market of pass through securities in India as it is in US.

- The credit events specified in the CDS contract may cover: Bankruptcy, Failure to pay, Repudiation/moratorium, Obligation acceleration, Obligation default, Restructuring approved under Board for Industrial and Financial Reconstruction (BIFR) and Corporate Debt Restructuring (CDR) mechanism and corporate bond restructuring.
- Since, CDS are traded mainly over-the-counter (OTC), the contracting parties therefore have to agree upon the terms and conditions of the CDS individually. In order to facilitate documentation, and to avoid disputes as to whether a credit event had actually occurred and how a contract should best be settled, CDS contracting parties (in the international and US market) generally refer to the International Swaps and Derivatives Association (ISDA) Master Agreement. In India, the RBI guidelines specifically states that Fixed Income Money Market and Derivatives Association of India (FIMMDA) shall devise a Master Agreement for Indian CDS
- Regarding the Settlement procedures, the RBI Guideline states that the parties to the CDS transaction shall determine upfront, the procedure and method of settlement (cash/physical/auction) to be followed in the event of occurrence of a credit event and document the same in the CDS documentation. However it further adds that for transactions involving users, physical settlement is mandatory. For all other transactions, market-makers have been permitted to opt for any of the three settlement methods (physical, cash and auction), provided the CDS documentation envisages such settlement
- Further, the guidelines specifically provide norms for Prevention of mis-selling and market abuse, wherein it requires protection sellers to ensure that CDS transactions shall be undertaken only on obtaining from the counterparty, a copy of a resolution passed by their Board of Directors, authorizing the counterparty to transact in CDS.
- RBI has also incorporated certain reporting requirements in the guidelines which would require market makers to report their CDS trades with both users and other market makers on the reporting platform of CDS trade repository within 30 minutes from the deal time. The users would be required to affirm or reject their trade already reported by the market- maker by the end of the day. In addition to these reporting requirements the participants are also required to report to respective regulators (e.g. IRDA for Insurance companies) information as required by them such as risk positions of the participants vis-à-vis their net worth and adherence to risk limits, etc.

(b) Difference between Credit Insurance and Credit Default Swaps

CDS contracts have obvious similarities with insurance, because the buyer pays a premium and, in return, receives a sum of money if an adverse event occurs.

However, there are also many differences, the most important being that an insurance contract provides an indemnity against the losses actually suffered by the policy holder on an asset in which it holds an insurable interest. By contrast a CDS provides an equal payout to all holders, calculated using an agreed, market-wide method. The holder does not need to own the underlying security and does not even have to suffer a loss from the default event. The CDS can therefore be used to speculate on debt objects.

The other differences include:

- The seller might in principle not be a regulated entity (though in practice most are banks);
- The seller is not required to maintain reserves to cover the protection sold (this was a principal cause of AIG's financial distress in 2008; it had insufficient reserves to meet the "run" of expected payouts caused by the collapse of the housing bubble);

- Insurance requires the buyer to disclose all known risks, while CDSs do not (the CDS seller can in many cases still determine potential risk, as the debt instrument being "insured" is a market commodity available for inspection, but in the case of certain instruments like CDOs made up of "slices" of debt packages, it can be difficult to tell exactly what is being insured);
- Insurers manage risk primarily by setting loss reserves based on the Law of large numbers and actuarial analysis. Dealers in CDSs manage risk primarily by means of hedging with other CDS deals and in the underlying bond markets;
- CDS contracts are generally subject to mark-to-market accounting, introducing income statement and balance sheet volatility while insurance contracts are not;
- To cancel the insurance contract the buyer can typically stop paying premiums, while for CDS the contract needs to be unwound

(c) Types of Estimation of Probability of Credit Default

1. **Pooling Method:** This method relies on the historical data and assumes that past defaults are a reasonable predictor for future likelihood of losses. Historical Probability Default (PD) is calculated by taking the ratio of the facilities that have defaulted to the total facilities that existed in the concerned time frame, usually a year. In this method, the facilities are divided into different categories/pools based on their risk drivers.
2. **Statistical Method:** Data on characteristics of retail obligors and corporate obligors can be used to estimate their respective probability of defaults. Various statistical techniques can be employed on the data to estimate PD for defined time horizons. The statistical model specifies the relationship between the inputs and the outcome – PD. The parameters determined depend on the data used to develop the model.

One of the most recommended statistical techniques to estimate PD is logistic regression. This method of regression is applicable when the dependent variable is binary i.e. takes one of the two available values i.e. default & non default. This variable indicates whether or not the loan/debt has gone into default over a certain time horizon, usually a year. Some of the common variable sources used to estimate the PD of a corporate are financial statements, owner's data, type of loan, size of loan, and industry of the company. Similarly, for retail obligors, variable sources could be customer demographics, income statistics, age of loan, and number of late payments etc.

3. **Structural Method:** This method is generally applicable for listed corporate entities wherein structural models are used to calculate the probability of default for a corporate based on the value of its assets and liabilities. This technique is a sophisticated approach and requires valuation models to be applied for firm valuation.

Over a period of time, we propose to collate other statistical relevant inputs to explore possibilities of using statistical method for PD calculation as well as to improve portfolio quality.

5.2 (A)

5.3 (B)

5.4 (A)

5.5 (D)

5.6 (C)