

CFE SDM Model Solutions

Fall 2016

1. Learning Objectives:

2. The candidate will be able to identify the presence of liquidity & counterparty credit risk, and critique approaches to measure and manage these risks

Learning Outcomes:

- (2a) Identify counterparty credit and liquidity risks concepts that arise from specific business activities.
- (2b) Assess the critical nature of the counterparty credit and liquidity risk exposure.

Sources:

Counter party Credit Risk, Gregory

Case Study BJA

Commentary on Question:

This question tested candidates' understanding of wrong-way risk. The question provided a situation and candidates were asked to evaluate the existence of wrong-way risk. Most candidates performed well on this question. The candidates who underperformed identified wrong-way risk as right-way risk or did not connect their response to the situation presented in the question.

Solution:

- (a)
 - (i) Describe how correlation drives wrong-way risk.
 - (ii) Explain why it is challenging to quantify wrong-way risk using historical data.

Commentary on Question:

Most candidates were able to describe wrong-way risk and explain why it is difficult to quantify it using historical data.

1. Continued

- (i) Wrong-way risk exists when the correlation between the default probability and exposure is positive.
- (ii) Historical data may be lacking or irrelevant for quantification of wrong-way risk.

Wrong-way risk is extreme and rather specific. Historical data may not show the relationship.

Wrong-way risk may not be revealed by any historical time series analysis.

- (b) Assess whether there is wrong-way or right-way risk on a cyber insurance policy provided by Insurance Company XYZ to one of Company ABC's clients. Justify your assessment.

Commentary on Question:

Most candidates were able to correctly evaluate the situation presented and conclude existence of wrong-way risk. Few candidates evaluated the situation from the perspective of all three parties (i.e. Company ABC, Company ABC's clients, and Company XYZ), which was not required by the question. Very few candidates incorrectly identified wrong-way risk as right-way risk or did not connect their response to the situation presented.

There is wrong-way risk on the cyber insurance policy provided by Insurance Company XYZ to any of Company ABC's clients.

With Company ABC dominating the cyber security market, when the probability of cyber attack increases, the risk exposure of system-wide failure to Company XYZ also increases. If Company ABC gets cyber attack, then all its clients, 90% of the market, will be at risk. The risk exposure for Company XYZ increases and it is more likely that the firm will default. There is a positive correlation between the position of an insurance policy payout and the probability of default on the insurance policy.

2. Learning Objectives:

1. The candidate will understand measures of corporate value and their uses in risk management.

Learning Outcomes:

- (1a) Critique accounting concepts used in the production of financial statements.
- (1c) Evaluate various financial reporting metrics for use in corporate decision-making.

Sources:

SDM-100-13 Managerial Accounting for CERAs and FSAs, 2013

SDM-315-14 Strategic Management - Ch 6

Commentary on Question:

The goal of this question was to test the candidate's understanding of the matching principle of accrual accounting, apply it in insurance, and also to recognize there are other considerations outside finance in acquisition decisions.

Solution:

- (a) Define the following:
 - (i) Cash accounting
 - (ii) Accrual accounting

Commentary on Question:

Candidates generally performed well on part (a) as it was a straight recall question from the Managerial Accounting study note.

- (i) Cash accounting is based on the actual flow of cash in and out of the business
- (ii) Accrual accounting recognizes income and expenses in the income statement as occurred whether or not cash has actually changed hands. Accrual accounting is tied to the matching principle concept: to match expense with the associated revenues in the same period.

2. Continued

- (b)
- (i) Calculate Company XYZ's historical travel insurance profit for years 2011-2016 if it had chosen to use accrual accounting instead.
 - (ii) Explain whether or not Company XYZ's use of cash accounting to analyze profits is appropriate. Justify your answer.

Commentary on Question:

Candidates performed poorly in calculating the profits under accrual accounting. Most did not realize that the change in reserves was needed for the calculations and did not attempt to try and match revenues and expenses. Many candidates simply replaced the claims in the income statement with the claims by cohort from Exhibit B. This was incorrect and received little to no points. Partial credit was rewarded to those candidates who at least tried to use the matching principle within their calculations. Regardless of calculations performed in part (i), most candidates were able to score well on part (ii) by recognizing that the use of cash accounting to analyze profits was not appropriate.

- (i) To calculate the profit under accrual accounting, we need to recognize the future liability generated by the policy at the same time its premium is recognized. To do this, we to recognize the future liability using a reserve.

At the end of 2011, 50% of customers who bought policy in 2011 have not completed their trip since sales are uniform and there is 6 months between purchase of policy and end of trip; hence need to hold reserves for 50% of premium (i.e. unearned premium = 50% of premium at end of year).
Apply reserve factor from exhibit B.

	Reserves at Year End	Change in Reserves
Reserve at beginning of 2011	0	
Reserve at end of 2011	$0.5 * 25 * 0.7 = 8.75$	$0 - 8.75 = (8.75)$
Reserve at end of 2012	$0.5 * 85 * 0.7 = 29.75$	$8.75 - 29.75 = (21.0)$
Reserve at end of 2013	$0.5 * 105 * 0.7 = 36.75$	$29.75 - 36.75 = (7.0)$
Reserve at end of 2014	$0.5 * 104 * 0.7 = 36.4$	$36.75 - 36.4 = 0.35$
Reserve at end of 2015	$0.5 * 145 * 0.7 = 50.75$	$36.4 - 50.75 = (14.35)$
Reserve at end of 2016	$0.5 * 120 * 0.7 = 42.0$	$50.75 - 42.0 = 8.75$

2. Continued

	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>
Premium	25.0	85.0	105.0	104.0	145.0	120.0
Claims	(9)	(38)	(66)	(73)	(88)	(92)
Fixed Expenses	(10)	(10)	(10)	(10)	(10)	(10)
Variable Expenses	(4)	(13)	(16)	(16)	(22)	(18)
Change in Reserves	(8.75)	(21.0)	(7.0)	0.35	(14.35)	8.75
Profit	(6.75)	3.0	6.0	5.35	10.65	8.75

Or if used actual calculated values for claims and variable expenses, instead of Exhibit A rounded results:

	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>
Premium	25.0	85.0	105.0	104.0	145.0	120.0
Claims	(8.75)	(38.08)	(65.55)	(73.15)	(87.67)	(92.15)
Fixed Expenses	(10)	(10)	(10)	(10)	(10)	(10)
Variable Expenses	(3.75)	(12.75)	(15.75)	(15.6)	(21.75)	(18.0)
Change in Reserves	(8.75)	(21.0)	(7.0)	0.35	(14.35)	8.75
Profit	(6.25)	3.17	6.7	5.6	11.23	8.6

- (ii) The use of cash accounting is not appropriate here. Some of the expenses (i.e. future claims) are not recognized in the same period as the revenue/premium. This obscures the true profitability of the business. Looking at the income statement, it would appear that there is a general downward trend in profits from 2012 – 2016 (except for 2015) but this is due to the lag in claims cash flow vs. premium cash flow. Under accrual accounting, it shows that the profits are steady or growing.
- (c)
- (i) Recommend whether or not Company XYZ can invest the \$60 million to expand its business. Justify your answer.
- (ii) Recommend whether or not Company XYZ could invest to expand its business if it were a subsidiary of Blue Ocean. Justify your answer using information from the Case Study.

Commentary on Question:

Many candidates were able to recognize that Company XYZ would not be able to pay back the loan in one year on its own, but the company XYZ would be able to do so if it were a subsidiary of Blue Ocean. Some candidates focused on the profitability that the loan provides and ignored the fact that it needed paid back in one year, so only partial credit was rewarded. To receive full marks, candidates needed to make a clear recommendation and provide sufficient justification. Candidates also needed to justify part (ii) based on information found in the case study and not just general responses.

2. Continued

(i) Profitability of Travel Business

The income statement is on a cash basis. There is a 6 month lag in the reporting of the claims compared to the premium (since policyholders buy the policies 6 months before they travel). 2012 looks particularly good because there were not a lot of sales in 2011 and hence less claims reported in 2012. 2016 looks poor because there were a lot of sales in 2015 and the claims associated with those sales are coming through the 2016 income on a cash basis. XYZ cannot look at claims experience based on cash accounting. It does not recognizing the risk/liability generated by the premium written. The company should look at profitability by accrual accounting as it allows better performance measurement by reducing the timing mismatch between when costs are incurred and when revenue is realized. It is an indicator of whether new business will be profitable over the life of the policy.

Claims experience report uses the matching principle as it compares the claims to the associated premium. The results from the report indicates claims experience is stable.

	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>
Profit Margin on Accrual Basis	-25%	4%	6%	5%	8%	7%

where profit margin is equal to profit / premium from part (b), for example 2011
profit margin = $-6.3 / 25 = -25\%$

On an accrued basis, profits and profit margin are positive after 2011.

Cash Strain in 2017

The projected income for 2017 on a cash basis is below:

	<u>2017</u>
Premium	200
Claims	(112)
Fixed Expenses	(70)
Variable Expenses	(30)
Projected Profit on Cash Basis	(12)

where premium information is provided in question, claims associated with premiums from 2nd half of 2016 and 1st half of 2017 assumed to have loss ratio of 70% based on historical performance = $0.5 * (120 + 200) * 0.7$ (other assumptions can be used if reasonable explanation was provided), fixed expense information provided in question (includes fixed expense + one-time investment), and variable expense information is provided in the question (15% of premium).

2. Continued

2017 is projected to have negative cash flows and creates a cash strain. Since Company XYZ has no free capital, this would leave them in a deficit position.

Recommendation

Although the travel insurance business is profitable, Company XYZ would face cash strain and would not be able to pay for the investment in 2017. Therefore recommend that Company XYZ should not make investment in 2017.

(ii) If Blue Ocean acquired Company XYZ, Company XYZ would have access to more capital since the parent company, Blue Ocean, has a capital base of \$3 billion (p.70 of case study). Therefore the projected cash strain of \$-12 million in 2017 (as calculated in part c.i) would not be an issue in the decision to invest or not.

If Company XYZ were to make the investment, the profit earned from the business written from 2017-2021 is expected to be:

	<u>2017 – 2021</u>	
Premium	1000	5 yrs of premium at \$200M per year
Claims	-700	Assume 70% loss ratio based on historical performance, other assumptions acceptable if reasonably justified
Fixed Expenses	-110	Annual fixed expense * 5 yrs + one-time investment
<u>Variable Expenses</u>	<u>-150</u>	<u>15% of premiums</u>
Projected Profit on Cash Basis	40	
Average Profit per Year	8	= 40 / 5
Profit Margin	4%	= 40 / 1000

Blue Ocean's goals are to grow their travel insurance business and eventually generate as much profit and premium as the marine business (p71 of case study). The projections above show the investment will make the business more profitable and will add to Blue Ocean's profits in the Travel Business. Thus they should invest since the investment will help Blue Ocean towards these goals as it will increase the premium and profit in the travel business.

Within the Travel insurance line, the goal is to establish a dominant market share in the insurance field (p71 of case study). They should invest since the investment will add more sales and help Blue Ocean gain market share in travel insurance.

2. Continued

- (d) Describe the two most significant non-financial factors that Blue Ocean should consider when evaluating this acquisition.

Commentary on Question:

*Candidates performed about average on this question. In order to receive full marks, candidates needed to provide specific answers in relation to the Blue Ocean case study. General responses received very little partial credit. A few candidates also provided answers that were financial in nature; these type of responses received no credit since the question was asking for **non-financial** considerations only. Below is one possible answer to the question, other responses received credit if the responses are reasonably justified and related specifically to Blue Ocean.*

Blue Ocean should look at the company structure, culture, operational function, management practice, etc. of XYZ. For example, if the operation relatedness is high, activity sharing may be value creating. Since both companies sell travel insurance there may be some synergies gained or lessons learned that could be implemented within Blue Ocean's business.

Blue Ocean should also consider the distribution channels, innovative products, niche markets, etc. that XYZ offers. This will help them determine strategically if XYZ would be a good acquisition in order to achieve its goals. For example, good relationships with distribution channels that Blue Ocean does not currently have may allow Blue Ocean to reach certain niche markets they currently cannot obtain on their own and to become a dominant player in the travel insurance market. Furthermore, Blue Ocean would like to be known for providing innovated solutions to its customers. If XYZ already has innovative products or has products that could easily be modified in creative ways to meet customers' needs, this will also align with Blue Ocean's strategy/goals.

3. Learning Objectives:

5. The candidate will understand the decision making process and the lessons learned from the risk taking activities and experiences of other organizations. In particular, the candidate will be able to apply the learning objectives of all the prior sections of the syllabus to the risk management principles embodied within the case studies explored in this section.

Learning Outcomes:

- (5c) Assess the risk of the status quo alongside any other risky and or risk management decision.

Sources:

Uber

Airbnb

Commentary on Question:

This question aims to test the candidate's comprehension on the sharing economy concepts introduced in the Uber and Airbnb readings. The candidate is expected to apply the learnings from the readings on these companies to a hypothetical "sharing economy for insurance". Most candidates understand the concepts and challenges faced by the business model of Uber and Airbnb. However, some candidates struggled to apply the sharing economy concepts in an insurance industry construct.

Solution:

- (a) Describe two challenges faced by both Uber and Airbnb in their business practices.

Commentary on Question:

Most candidates were able to identify the challenges faced by Uber and Airbnb. However, a few candidates had difficulty describing challenges based on the particular business model of Uber and Airbnb.

Regulation: Taxi and hotel industries are heavily regulated. The barrier to entry is high. Regulators are upset that many of the associated costs/taxes are skirted by the sharing economy. Uber/Airbnb could face shut down/lobbied against/banned in various cities.

Safety: Perception that Uber/Airbnb is less safe than the traditional alternatives, leads to some skepticism. Safety breaches are high-profile media events that kindle that perception.

3. Continued

Scale: The key is to grow supply to keep up with exponential demand. A great example of how to control this is Uber surge pricing. Uber/Airbnb business model is capital intensive. Both companies lost a lot of money up front when trying to enter new markets, until a critical mass was reached.

Other acceptable challenges could be branding, demand innovation, supply chain and etc.

(b)

- (i) Describe how the Uber and Airbnb business model might be applied to insurance.
- (ii) Evaluate how the challenges identified in part (a) could apply to this new insurance business model.

Commentary on Question:

Several candidates were confused and went on to explain how Uber and Airbnb can provide insurance coverage for their customers. Also, a few candidates proposed a "peer to peer" insurance model that is not practical and not reasonable. For example, the proposal of one person lending his/her own insurance plan to another person temporarily will not receive credit.

- (i) Analogous "peer-to-peer" insurance would connect policyholders to a micropreneur or investors that wants to insure their insurance risks in exchange for the insurance / underwriting profit. (Uber driver/Airbnb host equivalent is an individual providing insurance capital.)
- (ii) Identified Challenges:

Regulation: Insurance industry is already heavily regulated. This business model will add more complexity to legal and compliance issues.

Safety: There is no direct concern on individual policyholder's safety in this business concept. The safety issue here could be the possibility that the policyholders' claim will not be paid.

Scale: Insurance is built on scale, so the concept only makes sense if each "insurer" is sufficiently diverse with a large number of exposures.

4. Learning Objectives:

3. The candidate will understand best practices for ERM processes and Capital Management and their use in setting a risk-return strategy.

Learning Outcomes:

- (3a) Explain ERM principles and frameworks.
- Evaluate a company's ERM processes in its ability to adapt to emerging issues and identify risk opportunities.
 - Critique the direction of new regulation and industry standards in risk governance.
 - Describe the components of a risk appetite statement. Design and develop a risk appetite statement and risk return strategy.

Sources:

Risk Appetite Frameworks – How to spot the genuine article (Deloitte, p. 4-5, 8-13, 16)

Exploring Risk Appetite and Risk Tolerance (RIMS Exec Report, P. 3-4,8)

SDM-121-13: British Petroleum (PLC) and John Browne: A Culture of Risk Beyond Petroleum (P. 13)

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a)
- (i) Describe how the four elements (A to D) above support a risk appetite framework.
 - (ii) Provide one example for each of these elements (A to D) within RPPC's Risk Management Framework.

Commentary on Question:

- *Max. points are given if the candidate is able to describe the 4 elements of RAF and how they each support RAF. Candidates also have to demonstrate their understanding by providing one example of RPPC for each element.*
- *Re part (i), this question should be a "regurgitation" question. Some candidates answered poorly based on common sense.*
- *Re part (ii), some candidates identify an activity of RPPC without any supporting explanation (ie. wrote 2-3 words an example). This is example of poor answer.*

4. Continued

(i)

- Risk governance clarifies lines of accountability and describing how staff should adhere to firm's risk appetite framework. Implementation and running of the risk appetite framework depend crucially upon the full buy-in of Board and senior mgmt and the tone at the top.
- Risk infrastructure includes timely aggregation and reporting of risk data, related systems and processes, and employee skillset. RAF identifies comprehensive, firm-wide info necessary to shape the firm's risk infrastructure. A robust and well developed risk infrastructure responding to firm's current and targeted future risk profile and its business and risk strategy is essential for RAF. It facilitates effective monitoring, reporting and control of RA, RP and capacity.
- Risk Management tools are the metrics and methods to support RAF. Ie. Running stress tests aligns to its targeted future RP, business and its risk strategy support firms' calibration of RA& RL
- Risk culture is the ideas, beliefs, and norms regarding risk across the organization. It is in its language and the style and quality of its internal communication. It is instrumental in full operational embedding of the risk appetite framework since only the firm's risk culture helped by the tone at the top and appropriate compensation can turn RA stmts and limits into a RA language that is spoken and understood throughout the firm. "

(ii) Below are selective examples only (full marks are granted for other examples deemed reasonable)

- Risk Governance
 - Have 5 committees (Operation, Audit, Finance, Risk, Compliance & Legal) set-up which has its own defined lines of accountability
 - Reinforce 3-lines-of-defense approach to manage risk across the Enterprise
 - Established and formalized the role of Risk Champion to ensure strengthened engagement between the office of CRO and Business Operating groups
 - CRO sponsored Operations Committee which will meet on a quarterly basis to assess risks taken, discuss diff risk policies & issues and strengthen governance.

4. Continued

- Risk Infrastructure
 - The need for reporting on KRI at all levels of mgmt within each business group and in all risk decision-making, and the demonstration of scenario results and stress testing to support the reporting.
 - Risk Review and Approval Policy is in place to assess the feasibility of new product/ service created, all aspects of product design, all aspects of risks of product/ service, sign-off & approval from CRO, producing pricing committee & operation head of BU, & ensure proper documentation.
 - There are 3 disciplines which facilitate the risk monitoring: Post implementation review, Risk based capital assessment, and stress testing.
 - > Post-implementation Review: develop & report KPI & KRI specifically related to newly-launched initiatives.
 - > Solid Risk-based Capital Assessment: key metrics in the measurement & communication of any risk taken on.
 - > Stress testing
 - Note:** The presence of CRO promoting engagement between business and risk officers is reflection of employee skillset.

- Risk Management Tools
 - Demonstrate scenario results and stress testing in the context of the business and directly related to its business driver when reporting KRI. These should be based on transparent deterministic scenarios recommended by Business and by Risk team.
 - Quantification of return on its EC relative to COC acquired to fund the risk. KPI related to this must be reported.
 - FAST Analytics (Risk consultant group) to propose a quantitative framework in measuring & managing risks due to diversity of investment & business ventures.

- Risk Culture
 - (CRO) Promoting engagement dialogue between BOG (1st line) and Risk Officer (2nd line) within the protocols of Corporate policies that support EPM.
 - 2 human resource corporate policies which improve risk mgmt – i) 2-way rotation policy which allow employees to rotate b/w risk roles and business mgmt roles ii) continued PD policy which obligate EE to attend training on risk mgmt principles and techniques at least once every 2 years.
 - Current incentive compensation includes risk consideration (KRIs) so incentives aligned with the company's risk appetite.

Note: Simplying saying "every ee is responsible for risk management at RPPC." will only get partial marks.

4. Continued

- (b)
- (i) Evaluate how each course of action (A to D) above aligns with BJA's strategic vision.
 - (ii) Recommend which one of A to D BJA should pursue. Justify your answer.

Commentary on Question:

The question is to test whether the candidate is able to evaluate the best risk management approach in the light of firm's risk appetite, risk management objective (ie. maintain good credit rating), vision and core values (ie. safety, customer-orientation) & suitability to the external environment (ie. the focus of safety within the current international airline industry).

i) Full marks will be given only if the candidate clearly identifies the relevant risk appetite/ risk management objective/ vision / core value/ external environment and evaluate the options in the light of these.

ii) Full marks will be given if candidate is able to analyze the business case and various options collectively based on part (i) and make a recommendation.

- (i) Approach A: This is not good as this might put a threat to the expertise and skillsets of pilot and safety knowledge, which does not comprise the industry's safety vision and not strategically sound especially when the international market has been facing increasing # of accidents.

Approach B: Seems to be consistent with BJA's business plan. No conflicts.

Approach C: Automating all the booking or enquiry's service process online to replace the direct engagement with staffs at front desk and call centers might lose the direct or personal engagement with customer, which does not align with the firm's business model and strategic vision. This jeopardizes BJA's strategic vision of becoming the most customer-orientated airline in the world. Also, this is against RPPC's risk appetite statement "protect and enhance the RPPC brand by exceeding expectation in the products and services that is deliver to the clients".

Approach D: Raising more capital by issuing more debts in addition to the existing high level of long-term debt and finance leases. BJA is already incurring significant amount of long-term debt and finance leases, which further exposed them to interest rate volatility. This poses risks to credit rating and might drop below the regulatory requirements. This might put them off-side wrt to its credit's risk appetite.

4. Continued

- (ii) Option B is the best course of action as it aligns with the risk appetite of both BJA's risk appetite and commensurate with BJA's business vision and strategy and priorities of international airline industry.
- (c)
 - (i) Identify the most problematic risk management element that is evident in the Philadelphia Operation Hub.
 - (ii) Describe the three most significant issues associated with the element identified in part (i).

Commentary on Question:

This question is test the candidate's understanding of the Risk Culture as an important aspect of the Enterprise Risk Management Framework.

(i) A good candidate should be able to identify "Risk Culture" as the question is explicitly asking for "Risk Management Element".

- Many candidates missed the entire concepts of Risk Management element and replied based on common sense, ie. safety, bad communication, poor understanding of the significance of safety, etc. This shows that majority of the candidates do not understand what is a true enterprise-wide risk management framework.

(ii) This question is asking the candidate to come up with 3 most significant issues related to Risk Culture. Many candidates do not understand the objective of this question and describe the potential outcomes or issues which could have resulted from the existing poor risk management practice at the Philadelphia Operation Hub (Hub).

- A good candidate should be able to provide 3 aspects of Risk Culture which have failed with supporting details from the Hub.

- (i) Risk Culture is the most problematic aspect of Philadelphia Operation Hub's risk management.
- (ii)
 - Example#1: Lack of shared value and common understanding of the risk appetite at the Hub which reflected poor risk culture. This was evidenced by:
 - > Technician A's comment "I do not anticipate the aircrafts will collapse just because of some delayed safety checks.", which reflected that lack of shared value of safety and that being BJA's core value.
 - > Supervisor did not seem to be acquaint with the firm's risk appetite framework.

4. Continued

- Example #2: Poor leadership from the top. Risk appetite and the important of safety value were not broadly articulated in a top-down manner, resulting from the lack of shared value and common understanding of the risk appetite in this regard. This reflected poor risk culture, which was evidenced by:

> Risk appetite were established at the Board & senior level, but was not communicated across organization formally.

> The manager did not seem to be clear about the implication of risk appetite. This might imply unclear articulation of risk appetite by the leaders.

- Example #3: Not a culture where risk considerations were weaved into the rest of the firm (ie. business strategy, day-to-day risk-taking by the business, the design of its remuneration system, etc). This reflects poor risk culture. This was evidenced by:

> Technician B was not interested in seeing how his day-to-day work will have an impact on the firm's risk profile and implementation of its strategy.

> Technical B also did not have incentive to take risk to align with firm's vision/ strategic objective. This reflects that the firm's incentive plans were not well structured to support the firm's risk appetite and the taking and controlling of risks in line with its risk appetite framework.

> The fact that the manager is still thinking about how to incorporate risk into it strategic planning reflects that the risk considerations have not been weaved into the rest of the firm

- Example #4: BJA's form did not enable the free flow of info up and down the hierarchy (ie. manager does not like bad news, water down messages for fear of giving offence, etc.), which reflected poor risk culture. This was evidenced by:

> The manager did not feel that was valuable or was not comfortable to escalate the issue up with the business leaders. The issue was "watered-down" instead.

- (d)
- (i) Describe how using the risk trigger and upper risk limit acts as a risk control mechanism within a firm.
 - (ii) Recommend appropriate measures, X%, Y%, Z%, for the Philadelphia Operation Hub. Justify your recommendation.

4. Continued

Commentary on Question:

This question is to test the candidates understanding of the Risk Limit & Control System (ie. upper risk limits, risk trigger, risk capacity) to steer and control the risk-taking within a firm.

- Re part (i), majority of candidates displayed understanding of the risk limit & control System.

- Re part (ii), many candidates suggested risk trigger of 3%, upper risk limit of 5%, and risk capacity of 10%. This is not correct, because of the following rationale:

> Risk capacity should be the maximum level of risk the firm can tolerate. The current missed safety rate (10%) does not imply that that is the maximum level of risk which the Hub can tolerate. In fact, it is their vision to be competitive and be in the top quartile. Thus, the risk capacity should be set to the level which enables them to be qualified in the top quartile (ie. 5%).

> Upper risk limit is the level at which the objective (ie. risk appetite) is under threat. It should also be set to a level which is sufficiently below the risk capacity since the purpose of upper risk limit is to signal the need to take corrective actions before it exceeds the maximum level of risk the firm can tolerate. Thus, it should be set to 3%.

*> Risk trigger should be set at a level which is sufficiently below than the risk appetite, since it is to signal the need to escalate and consider correction actions before the risk appetite is potentially breached. Any level in the range of 1-2% is appropriate. **Note:** Level between 2-3% is not correct as it does not seem to warrant enough time for the escalation and any correction actions.*

(i) & (ii):

- Risk Capacity = 5%

Risk capacity is the maximum level of risk the firm can tolerate. If the firm's objective is to be at the top quartile of the safety standards in the airline industry, then the missed safety check rate must be no greater than 5%, which is the maximum level of risk tolerable.

- Upper Risk Limit = 3%

The upper risk limit represents the level at which the objective is under threat (ie. risk appetite level of 3%). It should also be set to a level which is sufficiently below the risk capacity since the purpose of upper risk limit is to signal the need to take corrective actions before it exceeds the maximum level of risk the firm can tolerate.

- Risk Trigger = 1-2%

The risk trigger should be set at a level which is sufficiently below than the risk appetite (ie. 3%) , since it is to signal the need to escalate and consider correction actions before the risk appetite is potentially breached.

4. Continued

Note: Level between 2-3% is not correct as it does not seem to warrant enough time for the escalation and any correction actions. Level <2% is also not correct as it limits the potential return (ie. not optimizing the labour resources for other strategic initiatives).

5. Learning Objectives:

2. The candidate will be able to identify the presence of liquidity & counterparty credit risk, and critique approaches to measure and manage these risks
4. The candidate will understand organizational behavioral concepts and apply strategic management frameworks to corporate financial and ERM business problems.

Learning Outcomes:

- (2a) Identify counterparty credit and liquidity risks concepts that arise from specific business activities.
- (2b) Assess the critical nature of the counterparty credit and liquidity risk exposure.
- (4b) Evaluate and apply the concepts of strategic management, recognizing the factors that affect the development and implementation of strategies.
 - Demonstrate the importance of analyzing the firm's external environment and the internal organization.
 - Define types of business-level strategies and recommend an appropriate business-level strategy for a given situation.
 - Explain the impact of competitive dynamics on strategic management.
- (4c) Use organizational behavior and strategic management concepts to evaluate and recommend corporate financial and ERM decisions.

Sources:

SDM-150-16 (p. 253, 260-265)

SDM-245-13 (p. 54-55)

Case Study Frenz

Commentary on Question:

Commentary listed underneath question component.

Solution:

- (a) Define the two types of wrong-way risk:
 - (i) General wrong-way risk
 - (ii) Specific wrong-way risk

Commentary on Question:

This was a straightforward question and most candidates were able to provide an appropriate answer.

5. Continued

- (i) General wrong-way risk: When the counterparty's credit quality is correlated, for non-specific reasons, with macroeconomic factors that also affect the value of the underlying portfolio.
 - (ii) Specific wrong-way risk: When the counterparty's exposure is highly correlated with its default likelihood caused by idiosyncratic factors.
- (b) Describe how this new arrangement exposes Frenz to both general and specific wrong-way risks

Commentary on Question:

Many candidates were not able to draw a connection between wrong-way risk and the new arrangement.

Frenz is protected from increases in coffee prices, but becomes exposed to the new organization's ability to purchase and deliver beans.

Example of general wrong-way risk: Frenz may be exposed to natural disaster in Vietombia under this new arrangement. Even if the global price of coffee in general were to remain constant, the availability of beans within the country may become constrained.

Example of specific wrong-way risk: With higher than expected increases in coffee bean prices there may be a higher probability that the new organization will not have sufficient funds to purchase the supply of beans demanded by Frenz, causing it to default on its obligations.

- (c) Describe the following elements of the five forces of competition:
- (i) Bargaining power of suppliers
 - (ii) Bargaining power of buyers

Commentary on Question:

This was another straightforward question and most candidates were able to provide an appropriate answer.

- (i) Bargaining power of suppliers: The extent to which an entity may increase prices or lower quality
- (ii) Bargaining power of buyers: The extent to which an entity may purchase goods for lower prices or with superior quality.

5. Continued

- (d)
- (i) Describe how the bargaining power of suppliers applies to growers.
 - (ii) Describe how the bargaining power of buyers applies to the new corporation.

Commentary on Question:

Based on the conditions in the case study, most candidates were not able to conclude that the bargaining power of suppliers for growers meant that growers had the ability to reduce the quality of their crops as opposed to being able to demand higher prices for their coffee beans.

- (i) Vietombia suppliers are the only ones selling coffee beans to the organization so they may reduce their own production or the quality of their crops to reduce their own expenses in response to the demand for lower prices.
 - (ii) As a monopolistic buyer, the new organization will be able to demand discounts from the suppliers, thus insulating it from large increases in the market price of coffee.
- (e) Describe how the bargaining power of buyers mitigates specific wrong-way risk for Frenz.

Commentary on Question:

Many candidates did not answer this question from Frenz's perspective and appropriately conclude that Frenz could use its power to ensure that there was still a win-win price situation for itself, the new organization, and the farmers, such that its objective should be to mitigate the risk of the new organization or farmers from defaulting during tough times.

To mitigate specific wrong-way risk for Frenz, the objective is to reduce the probability that the new organization will default on the contract with Frenz, which in turn means purchasing coffee within a tolerable range, relative to the agreed upon price with Frenz.

This will allow the new organization to buy coffee at sustainable price relative to the agreement, while allowing the quality of the product to possibly suffer. This is only sustainable up until a certain point, as Frenz still faces wrong-way risk in extreme scenarios. The risk is mitigated, but not entirely eliminated.

5. Continued

- (f)
- (i) Assess whether or not each of the four reasons (A to D) above is applicable to Frenz. Justify your assessment.
 - (ii) Recommend whether or not the new government-backed option is a better approach to support Frenz's growth strategy than vertical integration of the supply chain. Justify your recommendation.

Commentary on Question:

Many candidates did not completely explain why the government-backed option is better than vertical integration and thus did not receive full marks.

- (i) A – No. Frenz is not forward integrating as they are the consumption end of the life cycle.
B – Yes. The quality of Vietombia beans is high and the cost is low. This prevents other competitors and new business from entering.
C – Yes. Coffee beans are a key cost driver for Frenz and while the price at the store has to be competitive, the price of beans may fluctuate.
D – Yes. Coffee is an established commodity and there are many buyers and sellers.
- (ii) The government-backed option is better than vertical integration as it more favorably supports growth given that Frenz is being negatively affected by operating cash flow and available capital constraints.

Fixed coffee bean prices means better cash flow predictability and having the government set up the new organization means reduced up-front investment costs, which is the less capital demanding option.

6. Learning Objectives:

4. The candidate will understand organizational behavioral concepts and apply strategic management frameworks to corporate financial and ERM business problems.

Learning Outcomes:

- (4b) Evaluate and apply the concepts of strategic management, recognizing the factors that affect the development and implementation of strategies.
 - Demonstrate the importance of analyzing the firm's external environment and the internal organization.
 - Define types of business-level strategies and recommend an appropriate business-level strategy for a given situation.
 - Explain the impact of competitive dynamics on strategic management.
- (4c) Use organizational behavior and strategic management concepts to evaluate and recommend corporate financial and ERM decisions.

Commentary on Question:

The question tests the candidates' knowledge of the external environment, specifically through the lens of the five force's model, and how assessment of the external environment is influenced by a firm's core competencies.

Many candidates were able to provide isolated answers to each of the five forces, but struggled to justify assessments directly applicable to BJA through examples from the case study.

Many candidates also struggled with recommending a decision for BJA to take based on a holistic decision making framework that applies a consistent set of metrics for making a decision.

Solution:

- (a) Assess the impact of each of the five forces of competition on BJA's profitability potential. Justify your assessment.

Commentary on Question:

Candidates who simply stated the five forces or provided generic examples that do not relate back to the Case Study were not awarded any points.

6. Continued

1. Threat of new entrants. The threat of new entrants has a **high impact** on BJA because the deregulation of the airline industry has made it easier for new competitors to enter the market.
 2. Bargaining power of suppliers. The bargaining power of suppliers has a **minimal impact** on BJA. Both suppliers of aircraft, Xolar and Skylite have cost overrun issues and are competing with each other for aircraft business that reduces their bargaining power. Also, BJA's labor force is currently un-unionized, which speaks to lower bargaining power than a labor force that is unionized.
 3. Bargaining power of buyers. The bargaining power of buyers has a **large impact** on BJA because its customers are business clients who are typically funded by the institutions they represent, who have more power to negotiate for better prices than individual customers.
 4. Threat of substitute products. The impact of substitute products to BJA is **small**. While other transportation services for business travelers, such as trains and busses exist, they do not provide similar value over longer distances as airplanes do.
 5. Intensity of rivalry among competitors. The impact to BJA of rivalry among competitors is **low** because BJA's loyalty programs increase switching costs from carrier to carrier. Also, BJA enjoys good relationships with the business community that differentiates it from other airline companies.
- (b) Explain why BJA has sustainable competitive advantage from maintaining a good relationship with its labor force. Justify your answer.

Commentary on Question:

This was a fairly straightforward question part that many candidates scored well on.

BJA's competency of maintaining a good relationship with its labor force is a sustainable competitive advantage because it is valuable, rare, costly to imitate, and non-substitutable.

It is valuable in that BJA's ability to maintain good relationships with its labor force helps BJA keep its costs low.

It is rare – the Case Study mentions that most other airline companies have labor forces that are unionized.

It is costly to imitate. BJA has had decades of history of profit sharing schemes, regular salary scale and benefit reviews, frequent employee networking events, employee suggestion boxes, and an employee diversity team to foster communication and pay equity between management and regular staff – that points to a unique organizational culture that would be difficult for a competitor to imitate.

6. Continued

It is non-substitutable – the fact that most other companies in the industry have labor forces that are unionized indirectly indicates the difficulty of using a different strategy to keep its labor force non-unionized.

- (c) Rank the importance of each of the five forces as it relates to the sustainable competitive advantage in part (b). Justify your ranking.

The sustainable competitive advantage stated in part (b) is BJA's ability to keep its costs low through having a good relationship with its labor force. This has implications on the importance of each of the five forces to BJA specifically as opposed to any other airline with a unionized labor force.

(1) Because BJA relies on its un-unionized labor force for its cost advantage, the force "bargaining power of suppliers" is the most important force to BJA. The risk of its labor supply forming a union is a large threat to BJA earning above average returns. Therefore, BJA must do everything it can to keep its labor force happy, unionized, and low costing.

Since BJA has a sustainable competitive advantage with its good relationship with its labor force that keeps costs low relative to the rest of the airline industry, it is insulated from most of the other forces that would threaten a typical airline company.

(2-4) Threat of new entrants, intensity of rivalry among competitors, and bargaining power of buyers is important to BJA but less than the bargaining power of suppliers. New entrants and existing competitors are likely to be supported by higher-cost unionized labor, and the bargaining power of buyers is diminished due to BJA's ability to charge lower prices for flights than other airlines.

(5) As noted in part (b) of the question, there are no substitute products that enable someone to travel thousands of miles in a matter of hours, so this force is irrelevant as it relates to BJA's sustainable competitive advantage.

- (d) Assess whether or not the air travel market is attractive to BJA. Justify your assessment.

Commentary on Question:

Many candidates failed to relate the answer to this question part back to their answers in parts (a) and (c) that would provide a more nuanced and strong justification for why the air travel market is attractive to BJA.

6. Continued

While the air travel market is unattractive to most airline companies, it can be argued that it is attractive to BJA because of its low-cost advantage from its sustainable competitive advantage. The bargaining power of its suppliers is the most important to its ability to earn above average returns, while at the same time it has a low impact due to the nature of its labor force being un-unionized.

Also, as noted in part (a) of this question, a majority of the five forces are of low threat to BJA, further affirming that the market is relatively attractive to BJA.

- (e)
- (i) Describe the most significant risk for each of the options X and Y above with respect to capabilities and market attractiveness.
 - (ii) Recommend which option BJA should implement. Justify your recommendation.

Commentary on Question:

Many candidates failed to provide a comprehensive solution that showed organized thinking – of recommending one option over the other in terms of consistent metrics applied to both options. Most candidates stated the benefits of one option as sole justification for selecting that option without contrasting against the other.

A solution that was awarded full marks provided a clear and consistent decision making framework – a statement of the factors that are most important for BJA, followed by how each Option measures up to those factors.

- (i) Option X:
- Impact on capabilities – the laying off of 20% of aircraft servicing and maintenance technicians would increase the likelihood of BJA's remaining labor force to unionize for great protection. This would have a detrimental impact on BJA's ability to earn above average returns as it may wipe out its cost advantage.
 - Impact on market attractiveness – this option trades away its core competency for further differentiation, lowering the threat of rivalry – essentially trading an internal advantage for an external advantage.
 - Overall, the benefit of lowering the threat of rivalry is questionable since it was argued in part (a) that it has minimal impact on BJA, whereas the threat to its SCA is much more impactful.

6. Continued

Option Y:

- Impact on capabilities – increasing the aircraft fleet by 20% would increase BJA’s capability of getting customers from point A to point B in a more timely manner, since a larger aircraft fleet would reduce the impact of delays or flight cancellations from there being more flights available to take.
- Impact on market attractiveness – reducing BJA’s amenities would increase the intensity of rivalry as its product would be less differentiated from its competitors.
- Overall, in pursuing this option, BJA is trading away increasing the attractiveness of its external environment for resources that increase its internal capabilities.

- (ii) The main advantage that BJA enjoys over its competitors is its unique position of having an un-unionized labor force that helps to keep its costs low. This disproportionately favors strategies that increase BJA’s competitive position without increasing the risk of its labor force unionizing.

In light of this, Option Y is clearly more advantageous than Option X, considering Option X’s likely impact on weakening its key sustainable competitive advantage in keeping its costs low for a questionable advantage in the external environment space. On the other hand, Option Y does not threaten its internal competitive advantage. While it reduces market attractiveness within one of the forces that has lower importance to BJA, it provides a clear benefit of increasing punctuality, one of the three virtues in its vision statement.

7. Learning Objectives:

3. The candidate will understand best practices for ERM processes and Capital Management and their use in setting a risk-return strategy.

Learning Outcomes:

- (3b) Explain ERM and capital management concepts to evaluate and recommend corporate financial and ERM decisions.
- Apply capital allocation models to a multi-line organization.
 - Compare and contrast various ERM and Capital Management frameworks as to their ability to assess value and articulate the risk-return strategy of an organization.
 - Evaluate the value-added for an organization by jointly evaluating risk measurement and capital allocation.
 - Assess how an ERM process can improve capital efficiency and articulate the risk-return strategy.

Sources:

SDM-111-13

Commentary on Question:

This question was trying to test the candidates' understanding the risk measurements. Candidates are expected to understand the deficiency of using VaR compared to "Expected Shortfall" (ES). Since VaR is not a coherent risk measure, using VaR to define risk capital can result in a clearly riskier having lower capital requirement. Or vice-versa, a clearly diversified portfolio may end up having higher capital requirement. Any coherent risk measure will lead to a higher risk capital requirement for a riskier portfolio.

Candidates are also expected to understand why ES is a better risk measurement than VaR. One key point that has to be mentioned in any part of the solution is that VaR fails to consider losses beyond certain point.

In general this question was answered well. Part (b) and part (c) were answered very well. Every candidate made the correct choice. In order to get full mark, there needs to be enough justification. Some candidates did not justify enough for part (b).

Some candidates used "diversification" benefits to justify their answer. In theory this is possible. Although no rigorous mathematical proof is required, further justification/argument was needed to earn full mark for this part.

Solution:

- (a) Assess whether such a situation is possible. Justify your answer.

7. Continued

Such strategy is possible.

Since VaR fails to recognize Bank XYZ's loss beyond VaR₉₉, one possible strategy is to invest in assets with higher expected returns and very heavy tails. This can keep economic capital the same while increasing the portfolio's expected return; however, once the loss beyond VaR₉₉ happens, the loss is much more severe.

- (b) Determine which portfolio, A or B, is more risky. Justify your answer.

Portfolio B is more risky than portfolio A since larger losses are more likely to happen for portfolio B. When using VaR, portfolio A appears to be more risky for α below 99.5. Only above confidence level 99.5% does VaR show the higher risk in the tails of portfolio B.

Comparing the two portfolios using use expected shortfall, the risk in the tails of portfolio B is reflected for all the values of α in the question.

- (c) Recommend whether ES or VaR is a better risk measure. Justify your recommendation.

Recommend to use expected shortfall since it is a coherent risk measure. Value at risk is not a coherent risk measure since it fails the subadditivity axiom. Using VaR contradicts the notion that there should be a diversification benefit associated with merging the portfolios.

8. Learning Objectives:

1. The candidate will understand measures of corporate value and their uses in risk management.

Learning Outcomes:

- (1b) Explain how economic capital and related concepts can be used as the building block of value measure in any industry.
- (1c) Evaluate various financial reporting metrics for use in corporate decision-making.

Sources:

SDM-100-13

SDM-152-16

SDM-153-16

Commentary on Question:

This question tests the ability of the candidates to demonstrate their understanding of float, earnings on float, and its appropriate use in a company's presentation of earnings.

Solution:

- (a) Explain how the amount of float grows.

Commentary on Question:

Most candidates were able to obtain points for part a. Points were lost when the answer only stated that float growth occurs through earnings on float and underwriting gains. These items are indicative drivers of income generated by float and the insurance contracts.

The growth on Float occurs when more cash is paid in as premium than is paid out in claims and expenses or float growth occurs when more is added in reserves and capital than is paid out in claims.

- (b) Analyze the similarities or differences for each of the above characteristics (I to V) between a typical P&C company and Darwin.

Commentary on Question:

Most candidates were able to obtain most of the points for part b. No significant oversights were made overall.

I – Darwin's products also obtain premium with a promise to pay claims in the future. However, none (or very little) of what Darwin writes is annual renewable.

8. Continued

II – Most of Darwin's products will only pay once, on an insured's life, where the payment is generally known, but, the length of time it will take to payout all claims for policies currently in-force does stretch many decades. Additionally, annuity streams may pay out over many years and face longevity risk.

III – Darwin also holds billions of dollars in reserves, held in order to pay claims to its customers.

IV – Darwin will invest these billions of dollars in order to make a gain. However, this P/C example holds 100% of its assets in a general account, and Darwin's separate accounts for Variable annuities are held for the insured, with no investment benefit, beyond fees. All other gains for separate account products would come through as the underwriting gain. Additionally, Darwin returns some of the interest returns to policyholders through credited interest and also has explicit or implicit interest rate guarantees in many of its products.

V – Underwriting loss can also be viewed as a cost to hold float, if earnings on float are segregated. Life insurance companies, however, will seek an underwriting gain.

- (c) Assess whether Darwin should manage its business using the concept of float based on the analysis in part (b). Justify your assessment.

Commentary on Question:

Most candidates performed poorly and few did well on part c. Many points were lost when candidates indicated their understanding of float as an investment mechanism instead as a way to explain earnings. Additionally, candidates generally did not recognize the fundamental risk differences between a property and casualty company and a life insurance company.

Payouts of claims over a longer period of time

- Darwin's products are more sensitive to changes in interest rates (have a longer liability duration)
- Darwin's products have an explicit earned rate or an implicit earned rate that is a more important part of the product (a reason these products are sold and purchased) compared with the products of this typical P/C company
- Focusing on interest earned vs. explicit/implicit interest credited may be more useful information to management than separating earned interest as earnings on float

8. Continued

The separate account for Variable Annuities

- The separate account for Variable Annuities essentially leads to a product with no float and only an underwriting gain/loss
- It may be misleading to present the underwriting gain/loss from this product along with underwriting gain/loss of other products, since the gain/loss for VA is not a cost of float

Very little of what Darwin writes is annual renewable

- Darwin is not able to utilize premium changes at the frequency and magnitude as this typical P/C company in order to seek underwriting gains (or lessen underwriting losses)
- Premiums, as a whole, can only be changed on new business for Life and Annuity products. Pieces of premiums, for instance credited rates and COI's, can be changed more often, but only on some of the business
- Since underwriting gains and losses will not actually be known for some time, segregating these and gains on float may be more difficult to explain, and it may be more desirable to present earnings in a more traditional manner

Underwriting Gain

- An underwriting gain is sought and necessary. Losses can become large if the company loses focus on these items.
- Ultimately, life insurance companies require a higher return beyond what is made on float. Multiple risks (e.g. mortality, interest, expense) are taken by the company, and they will seek to make an overall gain for each risk they take on.

Overall

- Risks exist in life insurance, where they do not in P/C. Being mindful of all these individual items will be more important when making decisions regarding products, distribution, the organization, etc.

9. Learning Objectives:

4. The candidate will understand organizational behavioral concepts and apply strategic management frameworks to corporate financial and ERM business problems.

Learning Outcomes:

- (4a) Apply organization behavior concepts.
- Describe the communication process and explain the strategic importance of communication to organizations.
 - Describe the fundamentals of decision making and explain decision-making styles and influences.
 - Describe common types and causes of organizational conflict and apply the elements of a basic negotiation process.
 - Assess how the behavior of individuals and groups in organizations drives organizational decisions and performance.

Sources:

SDM-244-13 Strategic Management - Ch 1

SDM-240-13 Organizational Behavior - Ch 9

SDM-243-13 Organizational Behavior - Ch 12

Commentary on Question:

This question aims to first test comprehension of knowledge of stakeholders, negotiation and communication then to apply the principles in construction of communication language. First, good communication starts with identifying stakeholders. Then, a statement is introduced as a stem to indicate the CEO's intended communication approach (negotiation strategy / tactics / communication style). After critically examining the communication for style and tactics, the candidate must re-write the statement using a different negotiation tactic.

Solution:

- (a) Describe what the primary objective and the desired outcome are for each stakeholder group (I to IV) above in the union negotiation.

Commentary on Question:

Part (a) was generally well done with many candidates earning full points.

Host communities - The primary objective of the host communities is to continue its relationship with BJT and be an economic force (pay taxes, hire citizens, charity, provide services to its inhabitants, etc). A positive outcome means keeping the plants and increasing the number employed in the community, thus increasing wellbeing of the community from spending/taxes from BJT and its employees.

9. Continued

Primary Customers - Primary objective is to continue to have an affordable high quality product. A positive outcome balances these two objectives. Affordability is determined by input costs and salaries are almost half of sales cost. Quality will be determined by a variety of factors, but how well employees do their job is probably a factor. Happy employees perform better.

Non-unionized employees/contractors - Primary objective will be happiness and financial wellbeing. A positive outcome needs to balance these two objectives. The non-union workers will be affected by the moral of the union workers, therefore the non-union workers will want the union workers to be happy. However, the non-union workers happiness will hinge on pay equity. If they feel they are being underpaid, they will be unhappy -- so pay must be perceived as fair or the pay of non-union workers must be adjusted to be perceived as equal.

Bondholders - Primary objective is to get repaid, so the desired outcome is one that costs the company the least (cash).

- (b) Explain which one of the six communication styles is most evident in the opening statement. Justify your answer.

Commentary on Question:

*The majority of candidates did not earn any credit on this section. To earn credit the candidate must identify the correct **communication style** which was not done in most cases. Most answers did not reference syllabus material.*

The CEO is displaying a verbal aggressiveness style. Verbal aggressiveness style is described with "authoritarianism, derogatoriness, angeriness, and unsupportiveness."

"I'm sure after review you will be as committed to our proposal as we are." is an unsupportive statement. The entire statement is providing support for his position, which gives a sense of authoritarianism and/or non-support for other opinions.

- (c)
- (i) Identify the negotiation strategy the CEO intends to use when dealing with the union.
 - (ii) Describe three negotiation tactics that are implied by the language in the opening statement above.

9. Continued

Commentary on Question:

*Candidates generally performed poorly on this part. The negotiation strategy used was evident as **distributive** by his statement. No credit was common, and another popular response was identifying the strategy as integrative, which could receive partial credit if a thoughtful justification was given.*

The sentence/language from the statement associated with the tactic is not required for points but is highlighted here for part (d).

Distributive negotiation tactics that are used in his statement include:

- Convincing the other that you feel very committed to reaching your target outcome.
 - "I'm sure after review you will be as committed to our proposal as we are." (sentence 1)
- Convince the other that your own target outcome is fair.
 - "We believe we have been fair in the way we have balanced employees' interests as well as shareholders'." (sentence 2)
- Convince the other that important third parties favor your own target outcome
 - "We already have the boards' buy-in." (sentence 3)

(d)

- (i) Choose one sentence from the opening statement that reflects each of the negotiation tactics identified in part (c)(ii) that would need to be revised if the CEO wants to use a different negotiation strategy. Justify your choice.
- (ii) Construct alternative wording for each sentence identified in part (i) that implies a different negotiation strategy. Justify your answer.

Commentary on Question:

Candidates that performed fairly well on part (c) generally performed well on part (d) as well. Partial credit was given if candidates identified the negotiation as something other than distributive and then made the sentences more harsh in tone (i.e. more distributive).

Sentence 1: "I'm sure after review you will be as committed to our proposal as we are."

Change to Integrative: "we are keen to hear any concerns you have on our first draft proposal" – this shows that the other parties' concerns are important to you

9. Continued

Sentence 2: "We believe we have been fair in the way we have balanced employees' interests as well as shareholders'."

Change to Integrative: "We believe we can find a win-win situation that balances employees' interests as well as shareholders'. – show the others that a win-win solution is possible

Sentence 3: "We already have the boards' buy-in."

Change to Integrative: "We already spoken to the board and they agreed to be flexible in the contract solution." – Demonstrate you are flexible to various solutions

10. Learning Objectives:

2. The candidate will be able to identify the presence of liquidity & counterparty credit risk, and critique approaches to measure and manage these risks

Learning Outcomes:

- (2a) Identify counterparty credit and liquidity risks concepts that arise from specific business activities.
- (2b) Assess the critical nature of the counterparty credit and liquidity risk exposure.

Sources:

SDM107.13, SDM 307-14 plus case study Big Ben Bank

Commentary on Question:

This question is testing a basic understanding of liquidity profile and risk measure. Also, this question provides a practical application of a real world example involving management decisions on asset selection and financing options. Most candidates got partial marks on most parts.

Solution:

- (a) Describe four principal sources of liquidity risk for banks.

Commentary on Question:

This question focus on the liquidity profile of a bank operation, therefore, the 4 principal sources of liquidity risk described should be applicable to bank. The description of the sources of liquidity risk should rely to a banking situation rather than generalizing the description. In general candidates got part marks, typically for making comments on duration management and fire sales of assets.

The four principal sources of liquidity risk for banks are:

- (1) Sudden Withdrawal Strain (Run-On-Bank): When significant number of depositors want to withdraw their deposits at the same time triggered by some events – disintermediation risk;
- (2) Overleveraged: When the bank is overleveraged and needs to borrow or liquidate their existing assets in order to fund their operating cash flows and their debt obligations;
- (3) Illiquidity: When the bank assets are illiquid and have insufficient liquid assets to fund its operation or debt obligations;
- (4) Unexpected Investment Loss: When the bank suffers an unexpected significant derivative investment loss that requires significant amount of cash to close out the transaction and drains all its cash on hand and there is insufficient credit facility to generate short term borrowings.

10. Continued

- (b) Describe what a liquidity index is.

Commentary on Question:

Most candidates performed well in this question and provided the relevant formula.

In formulas, define P_i as fire sale price and P_i^* as fair market normal sale price

Define an index l such that:

$$l = \sum_{i=1}^N [(\omega_i)(P_i / p_i)]$$

Where ω_i is the percent of each asset in the FI's portfolio

$$\sum_{i=1}^N \omega_i = 1$$

- (c)
- (i) Critique Big Ben Bank's liquidity profile as of 2015 based on its three liquidity measures.
 - (ii) Recommend how Big Ben Bank could improve its liquidity profile. Justify your recommendation.

Commentary on Question:

This part generated the best answers, a few candidates struggled to focus on the liquidity as the key problem for the bank.

- (i) Measure 1: Liquidity Index – Big Ben has stable and high quality liquid assets based on liquidity index - 90% for 2015 and the year before and improving from pre 2014.
Measure 2: Excess Funding Amount – Big Ben has excess funding of \$850m, resulted from having more deposit than loan as of the end of 2015.
Measure 3: Liquidity Gap – Big Ben is having some negative liquidity due to not having enough liquid assets; therefore, it is showing a negative liquidity gap.
- (ii) Big Ben should invest the excess funding (financing gap) in high quality liquid assets (i.e. treasury instruments) to close the liquidity gap without hurting liquidity index.

10. Continued

- (d) Assess the impact of the purchase of the above bond on Big Ben Bank's liquidity index. Justify your assessment.

Commentary on Question:

This part followed on from b – candidates that couldn't remember the formula struggled with this part

$$\begin{aligned}\text{New Ratio} &= 99\% \times 2015 \text{ Ratio} + 1\% \times \text{Puttable Bond ratio} \\ &= 99\% \times 90\% + 1\% \times (70\%/99\%) = 89.81\%\end{aligned}$$

Clearly this is some deterioration in liquidity and therefore increase in risk; Big Ben should probably not invest in the instrument

- (e) Rank the three options above based on the impact on the following:
- Leverage
 - Funding gap
 - Liquidity
 - Risk Management

Justify your ranking.

Commentary on Question

Overall this part of the question had a reasonable spread of result. A few candidates went down a blind alley with respect to liquidity by focusing on the liquidity of the instruments rather than liquidity considerations for the bank. (ie. the question asks for the consideration or the implication of these instruments to the liquidity profile of the bank, rather than the liquidity aspects or the differences of these instruments) Only half of the candidates actually provided an explicit ranking rather than a narrative around the differences between instruments.

On leverage, the callable bond is the most onerous and the preferred bond is the least onerous (in extremis the dividends won't be paid). The CoCo could decrease leverage when the bank is under capitalized

On Funding Gap, the callable is again the worst because of the maturity mismatch 5 years vs 10 years. The perpetual by definition has no maturity thus helping to limit the mismatch.

From a liquidity perspective, the perpetual has no roll or refinancing risk, the CoCo is ok since its longer term has roll risk in 10 years while the 5 year callable note has higher liquidity risk due to the 5 year term.

10. Continued

From a Risk Management perspective, we hoped that candidates would comment on both solvency and likelihood of bankruptcy in extremis since the preferred shares and CoCo could improve solvency and avoid bankruptcy, it helps improve Big Ben's tolerance to credit risk. The 5 year callable note could result in bankruptcy as there is roll risk at maturity and less loss absorbency in the instrument during its life. Bank has to manage its credit portfolio more carefully, in order to avoid insolvency.

Thus overall ranking for most preferred to least preferred choice is going to be: (1) the preferred shares, (2) CoCo 10 years bond and (3) 5-year based on the above analysis.

A couple of grading points were awarded to candidates that provided a ranking with reasonable granular explanations for each of the criteria.