Examiners' commentaries 2016

FN2029 Financial intermediation

Important note

This commentary reflects the examination and assessment arrangements for this course in the academic year 2015–16. The format and structure of the examination may change in future years, and any such changes will be publicised on the virtual learning environment (VLE).

Information about the subject guide and the Essential reading references

Unless otherwise stated, all cross-references will be to the latest version of the subject guide (2011). You should always attempt to use the most recent edition of any Essential reading textbook, even if the commentary and/or online reading list and/or subject guide refers to an earlier edition. If different editions of Essential reading are listed, please check the VLE for reading supplements – if none are available, please use the contents list and index of the new edition to find the relevant section.

General remarks

Learning outcomes

At the end of this course, and having completed the Essential reading and activities, you should be able to:

- discuss and evaluate key theories relating to the role of banks as financial intermediaries
- discuss and evaluate the risks which banks face and explain how these risks are managed, with particular focus on techniques of asset and liability management, and credit risk measurement and management
- discuss the importance of capital in bank management and the role of securitisation, and explain the importance of capital adequacy within banking regulation
- describe and analyse the various means of analysing bank performance
- explain the principles and techniques involved in the use of derivative instruments for hedging credit, interest rate and exchange rate risk.

Format of the examination

The examination is three hours long. You must answer **four** questions from a choice of **eight**.

Questions on this paper will often contain multiple elements. In such cases, the primary element often requires an explanation or description of theoretical concepts, with the secondary element requiring application of such information to a specific issue of theoretical importance or practical relevance. Complete answers to this style of question should seek to ensure that the answers to the two elements are well integrated.

Planning your time in the examination

It is essential that you prepare sufficiently thoroughly to be able to make a serious attempt at four questions on the paper. Try to allow an approximately equal amount of time for each answer and make sure that you attempt **all** parts or aspects of a question. It is a very common failing for candidates to be unable to provide four adequate answers in the time permitted, due either to inappropriate study and revision strategies or to ineffective time management during the examination itself. If you gain only a low mark for the fourth answer, this does severe harm to your overall mark.

Select your material carefully

When reading an examination question, it is important that you first identify keywords. To begin, identify the words in the question that indicate the depth required in each part of the answer; for example, 'analyse', 'assess' and 'explain' will require greater depth than 'define', 'describe' or 'outline'. Then identify the scope of the question (namely, what content must be included in the answer). It is equally important to identify what should be excluded from the answer (that is, marks will not be gained for presenting information that is irrelevant to the question posed).

You should be prepared to demonstrate an understanding of theory and be able to cite appropriate models, arguments and examples. Some questions allow an element of independent thought and reasoning. However, where personal opinions or experiences are offered, their relevance should be fully explained and justified and they should not comprise the major part of the answer provided.

Some of the examination questions will require breadth across the syllabus. It will be common for questions to require a synthesis of topics from different chapters of the subject guide. Therefore, it is important to appreciate that different topics within the guide are not self-contained, and you are guided in this respect by the cross-referencing between different chapters of the subject guide. For examination purposes, you need to have an understanding of the subject as a whole, and remember that the examination seeks to cover the entire breadth of the syllabus.

Read widely

The best examination answers are those that reflect knowledge and understanding obtained from following the suggested readings given in the subject guide. When following the suggested readings, you need to keep in mind the following question: 'how can I reflect the insights from this reading within an examination answer?' Take notes on your reading and link these notes to the material in the subject guide. Alternatively, treat the subject guide material as a starting point, and seek to supplement this with relevant extracts or examples obtained from the suggested readings. The structure of each chapter in the subject guide can guide you in such activity. Wider reading gives you a stronger and deeper appreciation of theory and empirical evidence, and will enable you to take a more critical and analytical approach to examination questions. This is the very best thing you can do when preparing for the examination.

This course covers some dynamic subject material. If you keep abreast of current issues in financial markets (for example, by reading from quality sources such as the *Bank of England Quarterly Bulletin*, the *Financial Times* and *The Economist*), you will be able to include topical perspectives in your answers. The examiners will reward answers that blend awareness of current events (for example, the European sovereign debt crisis, the credit crunch or sub-prime mortgage crisis, or the downgrading of the USA or France sovereign credit ratings) with the theory and empirical evidence from the subject guide and suggested readings.

Structure your argument

Your answers should be constructed in a logical and coherent manner, and must always address the question posed. Conceptual terms and definitions should always be clearly explained. Examiners expect to read a clear introduction to each answer, which sets out the objective of the answer and the key points under analysis, and a concluding paragraph which acts as a summary of the main points of the argument. The main body of the answer should develop and substantiate the issues under analysis. Make sure that you write clearly and legibly. You should also clearly label diagrams and tables, and cite relevant sources if quoting empirical data or evidence.

Key steps to improvement

The most important issue is to read widely beyond the subject guide, as this additional material will allow you to provide a more thoughtful and comprehensive answer in line with the examiners' expectations. The examination is not a test of how well you have read the subject guide. Achieving good marks requires **explicit arguments in the context of the question**, and the quality of each answer depends on a **critical, analytical approach to theories** alongside **empirical evidence**.

Examination revision strategy

Many candidates are disappointed to find that their examination performance is poorer than they expected. This may be due to a number of reasons. The *Examiners' commentaries* suggest ways of addressing common problems and improving your performance. One particular failing is '**question spotting**', that is, confining your examination preparation to a few questions and/or topics which have come up in past papers for the course. This can have serious consequences.

We recognise that candidates may not cover all topics in the syllabus in the same depth, but you need to be aware that examiners are free to set questions on **any aspect** of the syllabus. This means that you need to study enough of the syllabus to enable you to answer the required number of examination questions.

The syllabus can be found in the Course information sheet in the section of the VLE dedicated to each course. You should read the syllabus carefully and ensure that you cover sufficient material in preparation for the examination. Examiners will vary the topics and questions from year to year and may well set questions that have not appeared in past papers. Examination papers may legitimately include questions on any topic in the syllabus. So, although past papers can be helpful during your revision, you cannot assume that topics or specific questions that have come up in past examinations will occur again.

If you rely on a question-spotting strategy, it is likely you will find yourself in difficulties when you sit the examination. We strongly advise you not to adopt this strategy.

Examiners' commentaries 2016

FN2029 Financial intermediation – Zone A

Important note

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Comments on specific questions

Candidates should answer FOUR of the following EIGHT questions. All questions carry equal marks.

Question 1

Explain how transaction costs and liquidity insurance theories propose the dominance of financial intermediation over direct financing.

Reading for this question

Please refer to Chapter 1 of the 2011 subject guide (pp.9–16). Within these pages, there are Activity boxes which direct you to study appropriate sections from

Matthews, K. and J. Thompson *The economics of banking*. (Chichester: Wiley, 2008) 2nd edition [ISBN 9780470519646].

Saunders, A. and M.M. Cornett *Financial institutions management: a risk management approach.* (New York: McGraw Hill, 2008) 6th edition [ISBN 9780071267045 (international edition)].

Bhattacharya, S. and A.V. Thakor 'Contemporary banking theory', *Journal of Financial Intermediation* 3(1) 1993, pp.2–50; Sections 1, 2, 4, 5 and 7.

Students would benefit greatly from reading Chapter 2 (pp.20–23) of

Freixas, X. and J-C. Rochet *Microeconomics of banking*. (Cambridge, MA; London: MIT Press, 1997) [ISBN 9780262061933].

Chapter 1 of the subject guide covers four reasons for the dominance of intermediation over direct financing (see bottom of p.11). Two of these reasons are covered in this question (i.e. transaction costs and delegated monitoring).

Approaching this question

This question requires an explanation of the preference for intermediation over direct financing, and specifically expects the focus to be on transaction costs and liquidity insurance.

You should use the material from pp.10–11 of the subject guide to set the context for your answer. Despite different requirements of lenders and borrowers, one could still envisage that the shorter chain of transactions involved in direct financing would be less costly than intermediated financing. In a situation of perfect knowledge, no transaction costs and no indivisibilities, financial intermediaries would be unnecessary, but these conditions are not present in the real world.

With regard to transaction costs, the relevant elements consist of search, verification, monitoring and enforcement costs. The algebraic analysis of transaction costs (see p.12 of the subject guide) is an essential component in a strong answer. Additionally, you have an opportunity here to demonstrate to the examiners that you have engaged in the essential textbook readings. Specifically, the Activity box on p.12 of the subject guide directs you to a graphical illustration from Matthews and Thompson (2008). Using this in your answer would be a considerable benefit. The discussion should proceed to explain the operational aspects which would mean that the presence of banks leads to reduced transaction costs (for example, branch networks, internet banking, mobile banking, standardised contracts). A fuller discussion of economies of scale and scope would also be relevant (possibly including elements from Chapter 2 of the subject guide on size and maturity transformation). Better answers would include a consideration of how banks' advantages in these respects are arguably eroding over time (for example, using some elements on dis-intermediation from Chapters 4 and 6 of the subject guide). Most importantly, there are directed activities in the Activity box on p.13 of the subject guide. You should pursue such reading and study in a manner that enables you to bring in additional discussion in an answer to a question like this.

The other aspect of this question relates to liquidity insurance. For this aspect, it is very important to draw from Diamond, D.W. and P. Dybvig 'Bank runs, deposit insurance and liquidity', *Journal of Political Economy* 91(3) 1983, pp.401−19. The essence of the argument is that banks enable consumers to alter their consumption patterns according to the influence of shocks, and the value of this service permits a fee to be earned by the bank. Further details on this appear on p.13 of the subject guide. It is important that you provide a detailed description of the Diamond and Dybvig (1983) model and liquidity insurance argument for the existence of banks. This should include a discussion of possible versions of the model: the autarky case, no bank but trading in financial assets between individuals and the case with banks. This will provide a sound basis for explaining why financial intermediation may dominate direct financing.

Generally, there is much scope in this question for you to demonstrate analysis drawn from the textbook and journal readings suggested as Essential and Further reading for Chapter 1.

Question 2

In an important theoretical model, Diamond and Dybvig (1983) show that a bank run can force a bank to default that would not otherwise have defaulted. Use their model to explain the liquidity insurance theory for the existence of banks and their susceptibility to runs.

Reading for this question

Please refer to Chapters 1 and 2 of the subject guide (pp.13 and 18–23). Within these pages, there are Activity boxes which direct you to study appropriate sections from Bhattacharya and Thakor (1993), Matthews and Thompson (2008) and Saunders and Cornett (2008). It is also essential to be familiar with the Diamond and Dybvig (1983) model.

Approaching the question

This question requires linking two elements from Chapters 1 and 2 of the subject guide. The bulk of the answer should discuss insights from theory, which obviously will be primarily based on the Diamond and Dybvig (1983) model. Some contextual material should also be included in the answer. For example, it would be appropriate to discuss Northern Rock as a case study (which is covered in p.19 of the Essential reading). Good answers would illustrate that aspects of the theory were evident in the behaviour of depositors in this case.

The answer requires careful reading of Chapters 1 and 2 of the subject guide (supplemented by Diamond and Dybvig, 1983) in order to demonstrate a clear understanding of the term 'liquidity insurance'. This should not be confused with deposit insurance, which is a completely different concept. Liquidity insurance relates to the fact that consumers are unsure of their future liquidity requirements in the face of unanticipated events. In the absence of perfect information, consumers will maintain their own pool of liquidity. Provided that shocks are not perfectly correlated across individuals, portfolio theory suggests that the total liquid reserves needed by a bank will be less than the aggregation of the reserves required by individual consumers acting independently. Diamond and Dybvig (1983) use this argument to account for the existence of banks. The view is that banks enable consumers to alter their consumption patterns according to the influence of shocks, and the value of this service permits a fee to be earned by the bank. In terms of their game theory model, there are two equilibria. The first is the existence of a bank providing liquidity insurance and optimal risk sharing among economic agents, while the second is the situation of a bank run.

The second part of the answer should include a clear definition of a 'bank run'. Financing long-term assets through short-term deposits is a source of potential fragility of banks because they are exposed to the possibility that a large number of depositors will decide to withdraw funds for reasons other than liquidity needs. This results in a vulnerability to bank runs. Better answers would link the theory of bank runs to the nature of the deposit contract and regulation. A key reason for regulation is that uninsured depositors are likely to cause a bank run when faced with information of an adverse shock to bank balance sheets. This is the point at which the notion of deposit insurance could be introduced. This argument has support both in history and in theory.

The material in the subject guide provides an intuitive argument and some of the more formal theory; a good answer should include **both** aspects. A very good answer would provide a full analysis of the implications of the theory, and would include discussion of the relevance of the design of deposit contracts.

Generally, there is much scope in this question for you to demonstrate rigorous analysis drawn from readings suggested above.

Question 3

Discuss the main sources of risk in commercial banking, and critically discuss the Value-at-Risk (VaR) approach to risk measurement.

Reading for this question

The relevant reading material can be found in Chapter 3 of the subject guide. The key additional reading is from Bessis (2010), Matthews and Thompson (2008) and Saunders and Cornett (2011). The Activity box on p.45 is also crucial for this question. It is not possible to devise a fully convincing answer to this question based on the subject guide alone. Your answer must demonstrate evidence of following the suggested readings in order to achieve a high mark.

Approaching the question

This question requires an explanation of the main risks that banks face, and a critical evaluation of the VaR approach to risk measurement.

Drawing mainly from material in Chapter 3 of the subject guide, the answer should focus on the 'main' sources of risk in commercial banking. An argument should be made for the selection of risks that are considered to be most important. The subject guide stresses several reasons why credit risk might be viewed as the most important (e.g. even a perfectly matched balance sheet will remain subject to credit risk). Other crucial risks addressed in the subject guide include liquidity risk, interest rate risk and market risk. Good answers would identify where credit and liquidity risk arose in the build-up to the 2007–09 financial crisis. In general, the theme of the first part of this question has resonance with the 2007–09 credit crunch and financial crisis, and the best answers would include some reference to risk-taking by Western banks in the years prior to 2007 (e.g. sub-prime lending) as well as comments on some banks' reliance on liquidity from wholesale sources (e.g. Northern Rock; see Matthews and Thompson, 2008). An additional argument could be made based on the types of risks addressed by regulators. For example, Chapter 2 of the subject guide explains the role of credit risk, interest rate risk, market risk and operational risk in the Basle II accord.

Your answer should proceed to discuss the VaR approach in depth. Recall that the question requires a critical evaluation rather than a description of the technique. You should explicitly link the discussion to market risk (see pp.39–41 of the 2011 subject guide). A graphical explanation of the concept of VaR is essential (i.e. focusing on the left tail of the returns distribution). Your answer should discuss the two user-defined parameters, and emphasise how perceptions of risk are affected by these parameters (some simple examples would be beneficial). Your critique of the method should include attention to accuracy, in the context that the quantile of interest is composed of the most extreme events. The final element of the answer should address the three major approaches followed by institutions in developing internal models of market risk:

- risk metrics (or the variance/covariance approach)
- historic or back simulation
- Monte Carlo simulation.

Reading beyond the subject guide is essential in order for you to present a detailed discussion of these points. Your answer must conclude with a summary of the key elements of your discussion, as they relate to the question posed.

Question 4

Discuss the methods used by banks to model and manage credit risk.

Reading for this question

Please refer to Chapter 4 of the 2011 subject guide. The chapter contains Activity boxes and various citations which direct you to study appropriate sections from Bessis (2010) and Saunders and Cornett (2011). A more complete answer would also integrate some elements from Chapters 2, 3 and 6 of the subject guide.

Approaching the question

This question relates to all the learning objectives of Chapter 4 of the 2011 subject guide. A good answer would begin by identifying the nature and importance of credit risk for a bank. Some evidence from the 2007–09 credit crisis could provide useful motivation and context. A good answer should also briefly discuss the separate constituents of credit risk summarised by the expected loss equation (pp.53–56). The expected loss given default (L) is the product of the loss given default and the default probability (D) (see Equation 4.1 in the subject guide). The loss given default is comprised of an uncertain exposure (X) and an uncertain recovery rate (R). Your answer should present an explanation of the three elements: default risk, exposure risk and recovery risk.

A significant portion of the answer should be devoted to credit risk models. This section should commence by discussing the objectives and intended output of the modelling process (i.e. probability of default), and the relevance of the level of information available (e.g. contrasting retail customers with large corporate borrowers). Discussion of qualitative models should emphasise the subjectivity of the approach and should contrast market-specific factors with borrower-specific factors. A much more objective approach is found with credit scoring and option-based models. Your discussion of credit scoring should identify its characteristics, and should address linear probability models, logit models and linear discriminant analysis. Turning to option-based models, you are required to demonstrate an understanding of how option pricing theory can be applied to credit risk (see p.59 of the subject guide). There are two main insights: (i) holding equity is analogous to buying a call option on the value of the firm's assets and (ii) the payoff for debt holders resembles that of writing a put option on the value of the firm's (borrower's) assets. Continuing to repay debt is not rational if liabilities exceed assets, thus the borrower may relinquish assets instead. Lenders should adjust the risk premium as a borrower's leverage and asset risk change. Market value of assets and asset risk are a key focus in estimating default probabilities under this approach. The value and volatility of assets are not directly observable. To address this, the KMV method relies mostly on equity market information, and its key output is the probability (over a one-year horizon) that the market value of assets will fall below promised repayments on short-term liabilities.

Risk quality covers both the probability of default and the recoveries in the event of default. The final part of your answer should discuss the methods available to banks for managing these elements of credit risk. Candidates are expected to refer to contractual mechanisms, credit allocation decisions, credit enhancement and loan sales (pp.57–58) and relate these techniques to the specific constituent of credit risk that is being managed.

Good answers would also explain that securitisation and credit derivatives (from Chapter 6) may also be used to manage credit risk.

There is considerable merit in demonstrating evidence of reading beyond the subject guide.

Question 5

Explain the general risk measurement and risk management functions of banks. Discuss how these functions are applied by banks when they use Asset and Liability Management and gap analysis to manage liquidity risk and interest rate risk.

Reading for this question

This question covers some reading from Chapter 3 (pp.43–44) and relevant reading based on Chapter 5 of the subject guide (pp.63–69). It is essential for students to have followed the Activity boxes within Chapter 5, which direct them to specific sections from Bessis (2010), Matthews and Thompson (2008) and Saunders and Cornett (2008). And it is also essential that candidates provide a convincing link between the two elements of the answer.

Approaching the question

The first part of the answer should discuss the risk management and risk measurement processes in banks (pp.43–44). Quantitative risk measures can fall into three categories: sensitivity of target variables, volatility of target variables and downside risk. Risk management can be described in four stages: identification of areas where risks can arise, measurement of the degree of risk, balancing risk-return trade-offs and establishing appropriate monitoring and control procedures.

The second part of the question requires a discussion of the principles of balance sheet management, along with an explanation of the application of gap analysis. It is essential that candidates explain how the specific application of Asset and Liability Management (ALM) and gap analysis follows the general approaches to risk measurement and management identified in the first part of the question. The answer should begin by focusing on some core principles of ALM. The answer should state explicitly at an early stage that the focus is on liquidity risk and interest rate risk (identification of risks). A good answer would highlight some case(s) of failure in liquidity risk management during the 2007–09 financial crisis (extreme cases of downside risk). ALM should be presented as a subset of the bank's overall risk management process.

The Net Interest Margin (NIM) must be identified as the target of ALM policies. The ALM objective is the minimisation of the NIM for a target level, or the maximisation of NIM for a given level of risk (sensitivity and volatility of target variable). The bank will set its targets based on a particular attitude towards risk, and this will strongly influence the extent of mismatching on the balance sheet and the complexity of hedging arrangements (balancing risk-return trade-off). Better answers would highlight the building blocks of ALM (see the Activity box on p.65 of the subject guide).

The answer should then proceed to discuss the application of gap analysis. Both liquidity and interest rate gaps must be discussed. When formulating illustrative examples, candidates must explicitly identify the source and implications of the risk in each example (identify source of risk, measure degree of risk, sensitivity of target variable). Within the discussion of liquidity gap analysis, answers should refer to potential sources of liquidity and maturity mismatching. Following the Activity on p.67 of the subject guide would help the preparation for this aspect. In relation to interest rate gap analysis, it is important to comment on rate-sensitivity, fixed-rate versus variable-rate assets and liabilities and the time period. Pursuing the Activity on p.69 of the subject guide would enable candidates to produce a much deeper and more convincing answer.

The answer should conclude with a summary of the key points raised above, while noting the focus of the question posed.

Question 6

Critically analyse the advantages and disadvantages of banks' use of securitisation and credit derivatives for credit risk transfer.

Reading for this question

Please refer to Chapter 6 of the subject guide (pp.71–83). Within these pages, there are Activity boxes which direct you to study appropriate sections from Bessis (2010), Matthews and Thompson (2008), Neal, R.S. 'Credit derivatives: new financial instruments for controlling credit risk', *Federal Reserve Bank of Kansas City Economic Review* 81(2) 1996, pp.15–28 and Saunders and Cornett (2011).

Approaching this question

The question relates to Chapter 6 of the subject guide and its learning outcomes.

A good answer would begin by setting the context for securitisation and credit derivatives under the umbrella of risk transfer (see Table 6.1 and p.72 of the subject guide). A distinction can be made that securitisation is mostly used for funding purposes whereas credit derivative transactions have hedging (or trading) motivations. These financial innovations have changed the landscape of risk by enabling market participants to trade risk (credit risk in particular) across financial and non-financial sectors. A substantial portion of your answer should be focused towards the motivation, merits and drawbacks of banks' use of these instruments.

Your answer should proceed to consider banks' objectives when engaging in securitisation (see p.73 of the subject guide) and using credit derivatives (see pp.79–80 of the subject guide). For example, securitisation is recognised as an efficient means of redistributing credit risks to other banks or nonbank investors. It is a vehicle for transforming illiquid financial assets into tradeable capital market instruments, and thus can be expected to provide enhanced risk diversification and financial stability. Securitisation enables banks to increase the flexibility of their operations while adhering to regulatory capital requirements. The possibility to adjust a bank's risk profile, the potential savings in required capital, and the reduced funding costs should be explained. A good answer would use examples based on different forms of securitisation to support the argument.

Your answer should not be restricted to pass-through securitisation. Attention should also be placed on the factors which influence the risks and benefits of securitisation. Capital management, risk management and reduced funding costs are crucial benefits. On the other hand, there are significant costs in setting up a pass-through structure. Identification of appropriate packages of assets has an important impact on the cost-benefit calculation. In extending the discussion to Collateralised Loan Obligations (CLOs) and Collateralised Debt Obligations (CDOs), your answer should comment on the increased difficulties and costs associated with securitising lower quality assets (e.g. credit insurance, over-collateralisation). Good answers would draw on insights from the suggested readings in the subject guide. The best answers would comment upon the current issues and future prospects for securitisation and credit derivatives given the negative publicity surrounding structured finance during the 2007–09 financial crisis. Volumes of issuance/trading in these markets have been slashed. Regulators are pressing for centralised clearing and exchange based trading of credit derivatives.

Credit risk transfer instruments (especially credit derivatives) offer important diversification benefits for banks with large credit exposures, and can also act as a stabilisation mechanism for the financial system, while enhancing efficiency in pricing and intermediation. However, others would argue that these innovations have also created risks for financial stability. A key concern is that the pace of innovation may have exceeded the development of infrastructure and risk management systems. Any shock to the financial system may be magnified by the resulting interrelationships, as witnessed in the credit crunch. The best answers would provide a coherent argument of these consequences, and should demonstrate clear awareness of the relevance of these issues in the context of the financial crisis.

Question 7

Do you think that it is important to adjust for risk in bank regulation and bank performance measurement? Explain and justify your answer.

Reading for this question

The relevant reading draws from several elements of the 2011 subject guide, including pp.23–28, 35–43 and 88–90. Within these pages, the Activity boxes guide you to pursue reading from Matthews and Thompson (2008), Saunders and Cornett (2011) and Bessis (2010). The question requires a synthesis of material appearing in Chapters 2, 3 and 7 of the subject guide: Chapter 3 covers risk-taking by banks, Chapter 2 covers the bank regulation aspects and Chapter 7 covers bank performance measurement.

Approaching this question

This question follows two main themes: (i) how does the risk-taking inherent in banking relate to the need for bank regulation and (ii) how does risk-taking influence bank performance and its measurement?

The introduction to Chapter 3 of the subject guide (pp.35–36) provides a good basis for this answer. You should very briefly discuss the main types of risk arising in banking (see pp.36–43 of the subject guide). This should certainly not comprise the major focus of the answer. An argument could be made for an emphasis on particular risks that are considered most important to the question. For example, this section of your answer could focus on explaining the types of risk that receive greater attention in regulation (e.g. the role of credit risk, interest rate risk, market risk and operational risk in the Basle II accord). Alternatively, you could stress several reasons why credit risk might be viewed as the most important category of risk.

Drawing from Chapter 2 of the subject guide (pp.23–28), your answer should develop clear linkages between bank risks and bank regulation. Given the syllabus of this course, it is reasonable that you will focus mainly on capital adequacy regulation. An important manner in which excessive risk-taking can be regulated is by linking banks' shareholder capital to the risk held by the bank in its assets. Emphasis should be placed on the risk-assets ratio (and the related Basle Accords) and the gearing ratio (deposits relative to capital). Better answers would highlight developments within Basle III regulations (e.g. an increased focus on liquidity risk). This would obviously reflect additional reading on a topical subject and would certainly be rewarded by the examiners.

If a bank performs well over a particular time period, it is important to identify and consider the level of risks taken in order to achieve such performance. In general, this theme has resonance with the 2007–09 credit crunch and financial crisis, and the best answers would include some reference to risk-taking by Western banks in the years prior to 2007 (e.g. sub-prime lending) as well as comments on some banks' reliance on liquidity from wholesale sources. To remain focused on the question, accounting-based measures of performance can be omitted from the answer, or alternatively they should only be discussed very briefly for purposes of context. Your answer should focus on the rationale for making a risk-adjustment when assessing bank performance. The construction of risk-adjusted measures, e.g. Risk-Adjusted Return on Capital (RAROC), Return on Risk-Adjusted Capital (RORAC) and Economic Value Added (EVA), should be explained in detail. The readings in the Activity box on p.90 of the subject guide are highly relevant to this part of the answer. The best answers would address any limitations with these measures or any issues with implementation or interpretation in practice.

Better answers could also choose to link regulation and performance (e.g. p.24 of the subject guide). Given the multiple strands required in this answer, it is important that your conclusion should draw together the key themes.

Question 8

Using examples, explain the following three hedging techniques: delta hedging, forward hedging, and money market hedging.

Reading for this question

This question relates to Chapter 8 of the 2011 subject guide (pp.93–94 and 96–105). Additional reading would be from Saunders and Cornett (2008).

Approaching this question

The introduction to a good answer would define the motivation for the use of forward and option contracts. It would be appropriate to proceed to explain, using examples, the characteristics of these derivative contracts and to briefly illustrate their payoff structures. Comparisons should be made between long and short positions, and between call and put options. The additional flexibility which is inherent in options versus forward contracts needs to be clearly explained. Much relevant material for this can be found on pp.93–94 of the subject guide.

The core of the essential material for the answer is to be found on pp.102–05 of the subject guide, where delta hedging, forward hedging and money market hedging are discussed.

For delta hedging, a better quality answer will explain its link with option pricing (pp.98– 101) and particularly the sensitivity of the option contract's value to changes in the value of the underlying asset.

In proceeding to the forward and money market hedging examples, your answer must clearly state that the focus is on considering exchange rate risk. To be fully convincing, the examples for these two related hedging techniques must demonstrate the possibility of equivalent outcomes. This occurs in the situation of covered interest parity (see pp.97–98 and 105 of the subject guide). This parity condition ensures that the money market hedge and forward hedge yield the same outcome, and therefore the money market hedge can be viewed as a synthetic forward contract.

The question clearly states the need to use examples, so including examples is essential for you to achieve a good mark. Also, the quality and accuracy of the examples will be a key influence on the mark to be awarded.

As for all the other questions, the examiners will reward candidates who demonstrate analysis drawn from the textbook and journal readings suggested as Essential and Further reading (from Chapter 8 in this case).

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Examiners' commentaries 2016

FN2029 Financial intermediation – Zone B

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Comments on specific questions

Candidates should answer FOUR of the following EIGHT questions. All questions carry equal marks.

Question 1

Discuss how the existence of financial intermediaries is able to help resolve the problems of imperfect information and asymmetric information.

Reading for this question

Please refer to Chapter 1 of the 2011 subject guide, in particular pp.9–11 and 13–16. Within this chapter, there are Activity boxes which direct you to study appropriate sections from Matthews and Thompson (2008), Saunders and Cornett (2008), Bhattacharya and Thakor (1993) and Diamond, D.W. 'Financial intermediation as delegated monitoring: A simple
example', *Federal Reserve Bank of Richmond Economic Quarterly* 82(3) 1996, pp.51–66. Good answers must cite Diamond, D.W. 'Financial intermediation and delegated monitoring', *Review of Economic Studies* 51(3) 1984, pp.728−62, Diamond (1996) and Leland, H.E. and D.H. Pyle 'Informational asymmetries, financial structure and financial intermediation', *Journal of Finance* 32(2) 1977, pp.371–87.

Approaching the question

This question relates to both learning objectives of Chapter 1 of the 2011 subject guide (p.10). A good answer would begin with a concise discussion of the characteristics of financial intermediaries and the functions that they perform. The answer should proceed to explain in detail how imperfect information and asymmetric information can impinge on the efficient flow of funds from surplus units to deficit units.

Despite the different requirements of lenders and borrowers, one could still envisage that the shorter chain of transactions involved in direct financing would be less costly than intermediated financing. In a situation of perfect knowledge, no transaction costs and no indivisibilities, financial intermediaries would be unnecessary, but these conditions are not present in the real world.

There are four further reasons for the dominance of intermediation over direct financing (2011 subject guide, p.11):

- transaction costs (Benston, G. and C.W. Smith 'A transaction cost approach to the theory of financial intermediation', *Journal of Finance* 31(2) 1976, pp.215–31)
- liquidity insurance (Diamond and Dybvig, 1983)
- information-sharing coalitions (Leland and Pyle, 1977)
- delegated monitoring (Diamond, 1984, 1996).

This question relates to reasons (c) and (d).

The bulk of the answer should be structured around the following three elements whereby banks help to overcome problems of moral hazard and adverse selection:

- providing commitment to long-term relationships with customers
- economies of scale, and the view of banks as information-sharing coalitions
- delegated monitoring of borrowers.

Under point (i), the answer should emphasise the merits and benefits arising from a close relationship between the intermediary and its customers. Under point (ii), the answer should discuss Leland and Pyle's (1977) ideas that information is a private good within a bank, thus providing an incentive for the gathering of information. More depth is expected for point (iii) since this attracts greater coverage in the subject guide and the suggested readings. Defined broadly, 'monitoring' of a borrower by a bank refers to information collection before and after a loan is granted, including screening of loan applications, examining the borrower's ongoing creditworthiness and ensuring that the borrower adheres to the terms of the contract. An important constraint on direct investment by households in the financial claims of corporations is the cost of information collection. Failure to monitor in a timely and complete manner exposes a supplier of funds to agency costs. Financial intermediaries provide a solution to these problems by pooling funds from suppliers (e.g. household savers) and investing in the financial claims of corporations. The intermediary has an incentive to collect information and monitor, which alleviates potential 'free rider' problems with direct financing. The average cost of collecting information is also reduced. It is thus argued that suppliers of funds appoint banks as delegated monitors (to act on their behalf).

Coverage of technical aspects (especially on the delegated monitoring of borrowers) would be expected from a good answer. For example, the costs and benefits of monitoring are analysed in the 2011 subject guide (see p.16).

Question 2

Discuss the importance of the deposit contract for causing banks to be susceptible to runs, and critically evaluate potential solutions to the problematic features of deposit contracts.

Reading for this question

Please refer to Chapter 2 of the 2011 subject guide, and in particular pp.18–23. Within these pages, there are Activity boxes which direct you to study appropriate sections from Matthews and Thompson (2008), Saunders and Cornett (2011) and Bhattacharya and Thakor (1993). It is expected that good answers cite Diamond and Dybvig's (1983) model and discuss its implications.

Approaching the question

This question relates to the learning objectives and material of Chapter 2 of the 2011 subject guide. The question contains three elements that an excellent answer must address in detail: the theory of bank runs, the problematic features of deposit contracts in causing fragility of banks and the potential for bank runs and the possible solutions to these problematic features of demand deposits. Note that full details of the Diamond and Dybvig (1983) model are not required, although you should refer to the main features of the model and how they relate to this question.

As a starting point, a good answer should include some contextual material. There is ample scope to draw on the events of 2007–09 and, more recently, in banking and financial markets in order to highlight the real possibilities of bank runs. For example, the subject guide discusses the Northern Rock bank run as a motivational case (p.19) – a good answer would illustrate that aspects of the theory of bank runs were apparent in the behaviour of depositors in this case (you can also refer to Matthews and Thompson, 2008). The most logical progression from this would be to include a clear definition of a 'bank run' at this point. Financing long-term assets through short-term deposits is a source of potential fragility of banks because they are exposed to the possibility that a large number of depositors will decide to withdraw funds for reasons other than liquidity needs. Uninsured depositors are likely to cause a bank run when faced with information about an adverse shock to bank balance sheets. This is one possible equilibrium outcome of the Diamond and Dybvig (1983) liquidity insurance theory for the existence of banks and reference to this model is recommended at this point.

The next element of your answer should discuss deposit contracts. Although they form the cornerstone of Diamond and Dybvig's (1983) liquidity insurance theory, they also contain problematic features including: being debt claims, the sequential service constraint and likelihood of default on the last claim. Some authors argue that this type of contract is run-prone and would not exist in this form under a 'free banking' system. A full explanation of these problematic features and the run-prone nature of the contract is required in a good answer.

The discussion then naturally leads on to the possible solutions to these problems. The first potential solution is the securitisation of assets (see Chapter 6). A securitised loan can be viewed as a loan sold to investors with recourse to the bank (a collateralised deposit). This could allow banks to issue deposit-type claims of different seniority. This solution can be argued to provide the benefits of liquidity and risk sharing, but removes the drawback of the sequential service constraint. The second possible solution relates to policy initiatives that may help reduce the possibility of a bank run: suspension of convertibility and deposit insurance. Third, proponents of 'free banking' argue that 100-per-cent-deposit insurance creates the side effect of moral hazard. Possible solutions to this problem are: co-insurance, requiring banks to pay higher deposit insurance premiums, capital adequacy regulation and the use of subordinated debt in banking regulation. A very good answer would cover many of these solutions and show evidence of reading of the recommended texts.

Question 3

Discuss the main sources of risk in commercial banking, and critically discuss the Value-at-Risk (VaR) approach to risk measurement.

Reading for this question

The relevant reading material can be found in Chapter 3 of the subject guide. The key additional reading is from Bessis (2010), Matthews and Thompson (2008) and Saunders and Cornett (2011). The Activity box on p.45 is also crucial for this question. It is not possible to devise a fully convincing answer to this question based on the subject guide alone. Your answer must demonstrate evidence of following the suggested readings in order to achieve a high mark.

Approaching the question

This question requires an explanation of the main risks that banks face, and a critical evaluation of the VaR approach to risk measurement.

Drawing mainly from material in Chapter 3 of the subject guide, the answer should focus on the 'main' sources of risk in commercial banking. An argument should be made for the selection of risks that are considered to be most important. The subject guide stresses several reasons why credit risk might be viewed as the most important (e.g. even a perfectly matched balance sheet will remain subject to credit risk). Other crucial risks addressed in the subject guide include liquidity risk, interest rate risk and market risk. Good answers would identify where credit and liquidity risk arose in the build-up to the 2007–09 financial crisis. In general, the theme of the first part of this question has resonance with the 2007–09 credit crunch and financial crisis, and the best answers would include some reference to risk-taking by Western banks in the years prior to 2007 (e.g. sub-prime lending) as well as comments on some banks' reliance on liquidity from wholesale sources (e.g. Northern Rock; see Matthews and Thompson, 2008). An additional argument could be made based on the types of risks addressed by regulators. For example, Chapter 2 of the subject guide explains the role of credit risk, interest rate risk, market risk and operational risk in the Basle II accord.

Your answer should proceed to discuss the VaR approach in depth. Recall that the question requires a critical evaluation rather than a description of the technique. You should explicitly link the discussion to market risk (see pp.39–41 of the 2011 subject guide). A graphical explanation of the concept of VaR is essential (i.e. focusing on the left tail of the returns distribution). Your answer should discuss the two user-defined parameters, and emphasise how perceptions of risk are affected by these parameters (some simple examples would be beneficial). Your critique of the method should include attention to accuracy, in the context that the quantile of interest is composed of the most extreme events. The final element of the answer should address the three major approaches followed by institutions in developing internal models of market risk:

- risk metrics (or the variance/covariance approach)
- historic or back simulation
- Monte Carlo simulation.

Reading beyond the subject guide is essential in order for you to present a detailed discussion of these points. Your answer must conclude with a summary of the key elements of your discussion, as they relate to the question posed.

Question 4

Discuss the methods used by banks to model and manage credit risk.

Reading for this question

Please refer to Chapter 4 of the 2011 subject guide. The chapter contains Activity boxes and various citations which direct you to study appropriate sections from Bessis (2010) and Saunders and Cornett (2011). A more complete answer would also integrate some elements from Chapters 2, 3 and 6 of the subject guide.

Approaching the question

This question relates to all the learning objectives of Chapter 4 of the 2011 subject guide. A good answer would begin by identifying the nature and importance of credit risk for a bank. Some evidence from the 2007–09 credit crisis could provide useful motivation and context. A good answer should also briefly discuss the separate constituents of credit risk summarised by the expected loss equation (pp.53–56). The expected loss given default (L) is the product of the loss given default and the default probability (D) (see Equation 4.1 in the subject guide). The loss given default is comprised of an uncertain exposure (X) and an uncertain recovery rate (R). Your answer should present an explanation of the three elements: default risk, exposure risk and recovery risk.

A significant portion of the answer should be devoted to credit risk models. This section should commence by discussing the objectives and intended output of the modelling process (i.e. probability of default) and the relevance of the level of information available (e.g. contrasting retail customers with large corporate borrowers). Discussion of qualitative models should emphasise the subjectivity of the approach and should contrast market-specific factors with borrower-specific factors. A much more objective approach is found with credit scoring and option-based models. Your discussion of credit scoring should identify its characteristics, and should address linear probability models, logit models and linear discriminant analysis. Turning to option-based models, you are required to demonstrate an understanding of how option pricing theory can be applied to credit risk (see p.59 of the subject guide). There are two main insights: (i) holding equity is analogous to buying a call option on the value of the firm's assets and (ii) the payoff for debt holders resembles that of writing a put option on the value of the firm's (borrower's) assets. Continuing to repay debt is not rational if liabilities exceed assets, thus the borrower may relinquish assets instead. Lenders should adjust the risk premium as a borrower's leverage and asset risk change. Market value of assets and asset risk are a key focus in estimating default probabilities under this approach. The value and volatility of assets are not directly observable. To address this, the KMV method relies mostly on equity market information, and its key output is the probability (over a one-year horizon) that the market value of assets will fall below promised repayments on short-term liabilities.

Risk quality covers both the probability of default and the recoveries in the event of default. The final part of your answer should discuss the methods available to banks for managing these elements of credit risk. Candidates are expected to refer to contractual mechanisms, credit allocation decisions, credit enhancement, and loan sales (pp.57–58) and relate these techniques to the specific constituent of credit risk that is being managed. Good answers would also explain that securitisation and credit derivatives (from Chapter 6) may also be used to manage credit risk.

There is considerable merit in demonstrating evidence of reading beyond the subject guide.

Question 5

Explain the general risk measurement and risk management functions of banks. Discuss how these functions are applied by banks when they use Asset and Liability Management and gap analysis to manage liquidity risk and interest rate risk.

Reading for this question

This question covers some reading from Chapter 3 (pp.43–44) and relevant reading based on Chapter 5 of the subject guide (pp.63–69). It is essential for students to have followed the Activity boxes within Chapter 5, which direct them to specific sections from Bessis (2010), Matthews and Thompson (2008) and Saunders and Cornett (2008). And it is also essential that candidates provide a convincing link between the two elements of the answer.

Approaching the question

The first part of the answer should discuss the risk management and risk measurement processes in bank (pp.43–44). Quantitative risk measures can fall into three categories: sensitivity of target variables, volatility of target variables and downside risk. Risk management can be described in four stages: identification of areas where risks can arise, measurement of the degree of risk, balancing risk-return trade-offs and establishing appropriate monitoring and control procedures.

The second part of the question requires a discussion of the principles of balance sheet management, along with an explanation of the application of gap analysis. It is essential that candidates explain how the specific application of Asset and Liability Management (ALM) and gap analysis follows the general approaches to risk measurement and management identified in the first part of the question. The answer should begin by focusing on some core principles of ALM. The answer should state explicitly at an early stage that the focus is on liquidity risk and interest rate risk (identification of risks). A good answer would highlight some case(s) of failure in liquidity risk management during the 2007–09 financial crisis (extreme cases of downside risk). ALM should be presented as a subset of the bank's overall risk management process.

The Net Interest Margin (NIM) must be identified as the target of ALM policies. The ALM objective is the minimisation of the NIM for a target level, or the maximisation of NIM for a given level of risk (sensitivity and volatility of target variable). The bank will set its targets based on a particular attitude towards risk, and this will strongly influence the extent of mismatching on the balance sheet and the complexity of hedging arrangements (balancing risk-return trade-off). Better answers would highlight the building blocks of ALM (see the Activity on p.65 of the subject guide).

The answer should then proceed to discuss the application of gap analysis. Both liquidity and interest rate gaps must be discussed. When formulating illustrative examples, candidates must explicitly identify the source and implications of the risk in each example (identify source of risk, measure degree of risk, sensitivity of target variable). Within the discussion of liquidity gap analysis, answers should refer to potential sources of liquidity and maturity mismatching. Following the Activity on p.67 of the subject guide would help the preparation for this aspect. In relation to interest rate gap analysis, it is important to comment on rate-sensitivity, fixed-rate versus variable-rate assets and liabilities and the time period. Pursuing the Activity on p.69 of the subject guide would enable candidates to produce a much deeper and more convincing answer.

The answer should conclude with a summary of the key points raised above, while noting the focus of the question posed.

Question 6

Explain and discuss the purpose and implementation of (i) gap analysis for liquidity risk and interest rate risk, and (ii) credit risk management.

Reading for this question

Please refer to Chapters 4 and 5 of the 2011 subject guide (pp.53–58 and 66–69). Within these pages, the Activity boxes lead you to pursue readings from Bessis (2010), Saunders and Cornett (2008) and Matthews and Thompson (2008).

Approaching this question

This question requires a synthesis of material from Chapters 4 and 5 of the subject guide, under common themes of risk management and balance sheet management.

A useful approach to the introduction would be to define liquidity risk, interest rate risk and credit risk (see Chapter 3 of the subject guide). Your answer should proceed to address the rationale for Asset and Liability Management (ALM) in banks. In doing this, the answer should highlight the relevance of Net Interest Margin (NIM) and net interest income as target variables, with both their level and variability being important elements (see Chapter 5 of the subject guide, pp.64–65).

In addressing part (i), your answer must present detailed consideration of the rationale for liquidity gap analysis and interest rate gap analysis. In discussing liquidity gap analysis, sources of liquidity and maturity mismatching should be addressed. In discussing interest rate gap analysis, it is important to discuss the identification of rate-sensitive assets and liabilities. Illustrative examples should be provided, and there are many examples available to you in the suggested readings from the textbooks. The section in Chapter 5 of the subject guide titled 'Issues associated with ALM' is of limited relevance to the question posed here, and this material should not constitute a major portion of the answer. In addressing part (ii), a good answer would begin with a discussion of expected loss. This should commence by stating Equation 4.1 from p.56 of the subject guide. The components of this equation should be explained in detail, i.e. the default risk, exposure risk and recovery risk. In general, candidates on this course have often found it difficult to produce a precise discussion on the latter two elements. The examiners would be pleased if your answer demonstrated evidence of having followed the suggested reading in the first Activity box on p.56 of the subject guide.

Your answer should proceed to discuss contractual mechanisms used by banks to control the credit risks of lending. These include loan diversification, pricing loans according to the riskiness of borrowers, rationing loans for riskier borrowers, requiring varying levels of collateral, and placing restrictive covenants.

The subject guide also explains credit allocation, credit enhancement and loan sales (pp.57–58), and the examiners would certainly reward your answer if it demonstrated evidence of further reading (e.g. from Bessis, 2010 or Saunders and Cornett, 2008) on these issues.

Question 7

Do you think that it is important to adjust for risk in bank regulation and bank performance measurement? Explain and justify your answer.

Reading for this question

The relevant reading draws from several elements of the 2011 subject guide, including pp.23–28, 35–43 and 88–90. Within these pages, the Activity' boxes guide you to pursue reading from Matthews and Thompson (2008), Saunders and Cornett (2011) and Bessis (2010). The question requires a synthesis of material appearing in Chapters 2, 3 and 7 of the subject guide. Chapter 3 covers risk-taking by banks, Chapter 2 covers the bank regulation aspects and Chapter 7 covers bank performance measurement.

Approaching the question

This question follows two main themes: (i) how does the risk-taking inherent in banking relate to the need for bank regulation and (ii) how does risk-taking influence bank performance and its measurement?

The introduction to Chapter 3 of the subject guide (pp.35–36) provides a good basis for an introduction for this answer. Your answer should proceed by very briefly discussing the main types of risk arising in banking (see pp.36–43 of the subject guide). This should certainly not comprise the major focus of the answer. An argument could be made for an emphasis on particular risks that are considered most important to the question. For example, this section of your answer could focus on explaining the types of risk that receive greater attention in regulation (e.g. the role of credit risk, interest rate risk, market risk and operational risk in the Basle II accord). Alternatively, you could stress several reasons why credit risk might be viewed as the most important category of risk.

Drawing from Chapter 2 of the subject guide (pp.23–28), your answer should develop clear linkages between bank risks and bank regulation. Given the syllabus of this course, it is reasonable that you will focus mainly on capital adequacy regulation. An important manner in which excessive risk-taking can be regulated is by linking banks' shareholder capital to the risk held by the bank in its assets. Emphasis should be placed on the risk-assets ratio (and the related Basle Accords) and the gearing ratio (deposits relative to capital). Better answers would highlight developments within Basle III regulations (e.g. an increased focus on liquidity risk). This would obviously reflect additional reading on a topical subject and would certainly be rewarded by the examiners.

If a bank performs well over a particular time period, it is important to identify and consider the level of risks taken in order to achieve such performance. In general, this theme has resonance with the 2007–09 credit crunch and financial crisis, and the best answers would include some reference to risk-taking by Western banks in the years prior to 2007 (e.g. sub-prime lending) as well as comments on some banks' reliance on liquidity from wholesale sources. To remain focused on the question, accounting-based measures of performance can be omitted from the answer, or alternatively they should only be discussed very briefly for purposes of context. Your answer should focus on the rationale for making a risk-adjustment when assessing bank performance. The construction of risk-adjusted measures (e.g. RAROC, RORAC and EVA) should be explained in detail. The readings in the Activity box on p.90 of the subject guide are highly relevant to this part of the answer. The best answers would address any limitations with these measures or any issues with implementation or interpretation in practice.

Better answers could also choose to link regulation and performance (e.g. p.24 of the subject guide). Given the multiple strands required in this answer, it is important that your conclusion should draw together the key themes.

Question 8

Using credit derivatives as examples, explain the different structures of forwards, options and swaps.

Reading for this question

This question requires a synthesis of material appearing in Chapters 6 and 8 of the 2011 subject guide. Key sections appear on pp.78–83 and 92–96. Within these pages, you are guided to pursue readings from Saunders and Cornett (2011) and Bessis (2010).

Approaching this question

A good starting point for your answer would be to present a general introduction to credit derivatives as a specific class of financial instruments which enables the isolation and then management of the credit risk from underlying assets. A brief explanation of the motives for using credit derivatives would also be desirable within the opening paragraphs. Relevant material and suggested reading for these aspects can be drawn from pp.78–80 of the subject guide, including the Activity boxes.

The remainder of your answer can be successfully structured in three elements, focusing on forwards, options and swaps. It is essential to meet the requirements of the question by using credit derivatives as the examples in each case. There is very little reward offered by the examiners if you use examples which do not comply with the specific statement in the question (and this is true more generally). In many respects, the best approach to addressing the main requirements of the question can be found from pursuing the first Activity box on p.83 of the subject guide. This advocates that you 'find supporting examples of credit derivatives and take notes on them by reading Saunders and Cornett (2011)', followed by specific guidance on page numbers.

The basic characteristics of a forward contract are discussed on pp.92–93 and 96–97 of the subject guide. The main focus of your sub-section on credit forward contracts should draw from pp.81–83 of the subject guide. The basic characteristics of options contracts are discussed on pp.93–94 and 101 of the subject guide. The main focus of your sub-section on credit related option contracts should draw from pp.81–82 of the subject guide and the Activity box on p.83. The basic characteristics of swap contracts are discussed on pp.95–96 and 102 of the subject guide. The main focus of your sub-section on credit related swaps should draw from pp.80–81 of the subject guide and the Activity box on p.83.

In all three sub-sections, the technical accuracy of the examples that you use is very important. For example, candidates often confuse the features of call and put options. Also, it is common for candidates to present payoff diagrams with incorrect or non-existent labelling. Another common error is to discuss the credit risk inherent in the forward or swap contract itself, which can reveal a failure to understand the requirements of a question such as this one. Overall, the examiners will expect a synthesis of material from Chapters 6 and 8 of the subject guide within your answer to this question..