REVISION
Oct/Nov 2018 examination

Apart from certain sections in the prescribed book as referred to in your study guide, study the entire contents of the study guide and the answers to the two assignments. Ensure that you can also answers all the revision questions.

REVISION QUESTIONS

1. Explain the ultimate goal of treasury management and provide four examples of the activities that are part of treasury management.

1, Answer:
The ultimate goal of treasury management is maximising the firm's liquidity and mitigating its operational, financial and reputational risk.
Treasury Management includes a firm's collections, disbursements, concentration, investment and funding activities. In larger firms, it may also include trading in bonds, currencies, financial derivatives and the associated financial risk management.
Examples of activities include:

- Management of liquidity and cash positions;
- Funding the company at the lowest possible cost and identifying appropriate sources of funds;
- Foreign exchange operations to facilitate international receipts, payments, borrowings and investment of funds;
- Asset and liability management, which involves the management of interest rate-sensitive assets and liabilities;
- Maintain effective management information and trading systems. Treasurers look for services that provide news, market data and analysis tools to help them perform their treasury management tasks. If they deal directly in the financial markets as part of their treasury management role, they also require access to electronic trading systems.

2. Define Asset and Liability Management (ALM) and explain the factors that influence the scope of ALM.

2. Answer:
Modern risk management now takes place from an integrated approach to enterprise risk management that reflects the fact that interest rate risk, credit risk, market risk, and liquidity risk are all interrelated. Therefore, managers of financial institutions nowadays consider their asset and liability portfolios as an integrated whole. They focus on how the portfolio, as a whole, contributes to the firm's broad goals of adequate profitability and acceptable risk. This coordinated and integrated approach is known as asset-liability management (ALM). Asset and Liability managers are especially concerned about stabilizing their institution's net interest margin – the spread between the interest revenues and interest expenses – and about protecting a financial company's net worth – the value of the stockholders' investment in the institution.

ALM, therefore, *coordinates* the management of *both* assets and liabilities in order to achieve institutional goals, especially those related to profitability and risk. This includes, *interest-sensitive gap management* which focuses upon protecting or maximising each financial institution's *net interest margin* or spread between interest revenues and interest costs. *Duration gap management* assesses the exposure to loss in *net worth* from relative changes

in the value of assets and liabilities when market interest rates change. This technique points to the importance of avoiding large gaps between the average duration of a financial firm's asset portfolio compared to the average duration of its portfolio of liabilities.
Factors that influence the scope of ALM:

- Volatile markets bringing about new and complex risk factors.
- Fast changing market interest rates.
- Deregulation. Financial institutions now have more discretion in reshaping their sources of funds. Previously the types of deposits, the rates offered, and the non-deposit sources were closely regulated.
- Increased competition.
- Increased bundle of services (credit, payments, savings, financial advice that should each be priced separately).

3. Give a definition of Yield to Maturity (YTM) that explains why the treasury manager needs to calculate the YTM. (4)

3. Answer:
The rate of return anticipated on a bond if held until the end of its lifetime. YTM is considered a long-term bond yield expressed as an annual rate. The YTM calculation takes into account the bond's current market price, par value, coupon interest rate and time to maturity. It is also assumed that all coupon payments are reinvested at the same rate as the bond's current yield. YTM is a complex but accurate calculation of a bond's return that helps investors compare bonds with different maturities and coupons.

4. Explain the term "derivative" and discuss the capital requirements normally attached to derivatives? (4)

4. Answer:

A derivative is an arrangement or product (such as a future, option, or warrant) whose value derives from and is dependent on the value of an underlying asset, such as a commodity, currency, or security.

The Basel I capital standards were adjusted to take account of the risk exposure banks may face from derivatives – futures, options, swaps, interest rate cap and floor contracts and other instruments designed to hedge against changing currency prices, interest rates, and commodities position. Many of these instruments expose a bank to counterparty risk – the danger that a customer will fail to pay or to perform, forcing the bank to find a replacement contract with another arty that may be less favourable. Basel required bankers, to convert each risk-exposed contract into its credit-equivalent amount as though it were a risky asset listed on the balance sheet. In determining the credit-equivalent amounts of these off-balance-sheet contracts, Basel I required a banker to divide each contract's risk exposure into 2 categories (1) potential market risk exposure (2) current market risk exposure.

5. Define and explain the concept financial derivative. (3)

A financial derivative is an agreement between a customer of a bank and the bank to exchange currencies or interest payments at an agreed-upon price at some date in the future, or the right to do so.

Definition: A derivative is a financial contract that derives its value from an underlying asset. The buyer agrees to purchase the asset on a specific date at a specific price.

Derivatives are often used for commodities, such as oil, gasoline or gold. Another asset class is currencies, often the U.S. dollar. There are derivatives based on shares or bonds. Still others use interest rates, such as the yield on the Treasury Bills

6. Define "hedging" and discuss the goals of interest rate hedging. (4)

6. Answer:

Financial institutions protect themselves against adverse interest rate changes by focusing on managing the net interest margin (NIM). The net interest margin (NIM) indicates how successful the bank has been in borrowing funds from the cheapest sources and in maintaining an adequate spread between its returns on loans and security investments and the cost of its borrowed funds. If the NIM rises, loan and security income must be rising or the average cost of funds must be falling or both. A declining NIM is undesirable because the bank's interest spread is being squeezed, usually because of rising interest costs on deposits and other borrowings and resulting increased competition.

Interest rate hedges are flexible tools that allow companies to reduce their vulnerability to changes in interest rates. First American Bank provides innovative strategies and products to help our customers manage interest rate exposure and reduce uncertainty. A hedge is not a loan. It is a separate contract that acts like an insurance policy to protect you from adverse movements in interest rates. For example: **Interest Rate Swap Forward:** a hedge executed today with an effective starting date some specific date in the future. A customer could with a balloon payment on a loan due in 6 months use a Forward Swap to lock in an interest rate for the renewal of the loan, and eliminate their risk of rates rising during the interim period. Other examples of hedges are; Interest Rate Cap; Interest Rate Floor; and Interest Rate Collar.

7. Define the money and capital markets in South Africa and explain the important role that the South African Reserve Bank plays in the money market. (7)

7. Answer

Wholesale marketable money market instruments traded in the South African financial system include:

- Primary securities issued by the private sector. These include trade bills, bankers' acceptances (BAs), promissory notes, company debentures and other types of commercial paper.
- Primary securities issued by the public and semi-public sector. These include TBs, bridging bonds and capital project bills.

- Indirect securities issued by financial intermediaries. These include liabilities of the private banks, such as NCDs; liabilities of the public and semi-public banks; Land Bank bills, and Land Bank promissory notes; and liabilities of other institutions.

Capital market instruments include government bonds, semi-public sector bonds, e.g. Transnet bonds, corporate bonds and equities traded on the JSE. Other sources of funds include borrowing from the money market, inter-bank market (where banks lend funds among themselves) and the central bank's discount window and lender-of-last resort The financial market (excluding equities), i.e. the debt markets (also called the fixed-interest markets, because the majority of instruments carry fixed rates of interest) is usually split into the money and bond markets. These markets embrace the primary (new issues) market and the secondary market.

The line demarcating the money and bond markets is usually drawn on the basis of term to maturity of the securities traded, and is arbitrarily determined to be one year. Broadly speaking then, the bond market is defined as the market for the issue and trading of long-term securities, while the money market is the market for the issue and trading of short-term securities. The money market is, however, much more than just the issuing and trading of money market instruments. It encompasses the all-important interbank market and the various significant operations of the Reserve Bank. The Reserve Bank operates in the money market in the form of open market operations. This is done to establish a certain desired "money market shortage", i.e. level of borrowed reserves, and this it provides via creating the current accounts held with the Reserve Bank. And these borrowed reserves are generally provided at the Bank's accommodation rate, nowadays called the repo rate. These actions, and the repo rate, of the Reserve Bank are designed to influence short-term interest rates, i.e. money market rates, and they do certainly have a powerful influence on them, bordering on *control*. This is significant, because money market interest rates are the foundation of rates and prices in all other markets, including the derivatives markets.

8. "Although interest rates are critical to most financial institutions, treasury managers are unable to control either the level or trend in market rates of interest." Comment on this statement by explaining what forces cause interest rates to change. (5)

8. Answer
Interest rates cannot be set by an individual bank or even by a group of banks; they are determined by thousands of investors trading in the credit markets. Moreover, each market rate of interest has multiple components--the risk-free interest rate plus various risk premium. A change in any of these rate components can cause interest rates to change. To consistently forecast market interest rates correctly would require bankers to correctly anticipate changes in the risk-free interest rate and in all rate components.

Another important factor is the timing of the changes. To be able to take full advantage of their predictions, they also need to know when the changes will take place.

9. Explain the calculation of three different ways to measure interest rates.

9. Answer:
1. ratio of fees we must pay to obtain credit divided by the amount of credit obtained (expressed in percentage points (i.e. 1/100 of a percentage point).
2. YTM p221
3. DR p222

10. Discuss the concept of liability management.

10. Answer
Liability management is the buying of funds from other financial institutions to cover good-quality credit requests and satisfy any legal reserve requirements on deposits and other borrowings that the law or regulation may require.

The goal of liability management was simply to gain control of the bank's sources of funds. The customer relationship doctrine is a managerial strategy that puts the goal of satisfying the credit requests of all quality customers at the top of management's list as far as possible. Should deposits be inadequate, other sources of funds should be used. The doctrine requires the lending decision to come first and then followed by the funding decision. Other sources of funds include borrowings in the money and capital markets and central bank borrowings and repurchase agreements

11a) Identify five (5) objectives of cash flow management and explain why cash flow analysis is so critical to banks.

Answer

- Ability to meet obligations as they fall due in different currencies
- To ensure the availability of funds in a timely manner and at an acceptable cost
- To minimise idle balances
- Maximise after tax earnings on surplus funds
- To keep foreign currency exposure and transaction costs as low as possible
- To improve credit control
- Limit counter party payment delays

- It impacts on profit margins √and funding costs
- It is integrated with ALCO
- There is a need to identify cash movements for a more sophisticated portfolio analysis

b) Cash is the most liquid asset. However, banks keep cash holdings as low as possible. Explain why.

b) It is costly because:
It does not earn interest (it is idle)
It is expensive to manage (protection√ and handling)

12. What are the sources of credit risks for banks? (4)

12. Answer

- Banks that lend only in a narrow geographic area or limit their loans to a certain industry.

The lack of diversification could dramatically affect a large portion of the bank's portfolio economic factors negatively influence that particular geographic area or industry. A bank that concentrates its loans in this way could be subject to risks that the rest of the banking industry is not subject to in its operations.

- Banks with high loan growth often assume greater risk, as credit analysis and review procedures are less rigorous.

- Banks that lend funds in foreign countries also assume country and exchange rate risk.

Country risk refers to the potential loss of interest and principal on international loans owing to borrowers in a country not making payments on time. Foreign governments and corporate borrowers may default on their loans owing to internal politics that may disrupt payments, general market disruptions, and problems that arise when governments reduce or eliminate subsidies used as ~~a source of repayment~~.

13. Describe with examples the investment instruments available to financial institutions.

13. Answer

There are a number of investment instruments available to financial institutions. Broadly, they fall into two categories: (1) money market instruments and (2) capital market instruments. To learn the nature and characteristics of these instruments refer to Chapter 10 of your prescribed textbook.

14. Explain the concept *available funds gap.* What actions could the treasury manger take to close the gap?

14. Answer

Available funds gap = "current and projected loans and investments the lending institution desires to make" *minus* the "current and expected deposit inflows and other available funds" (that is the difference between current and projected outflows and inflows of funds).

Bank could fund this position in the interbank market, offshore market and by borrowing from the central bank OR sell some of its financial instruments for example…?

15 Success Bank had interest income of R200 million and noninterest income of R40 million. This bank also had interest expenses of R140 million and noninterest expenses of R25 million. This bank has total assets of R1 billion and has equity capital totaling 10 per cent of total assets.

- What is this bank's net interest margin (use total assets as earning assets)?
- What is this bank's return on assets?
- What is this bank's return on equity?

15. Answer

- NIM = ?
- ROA = ?
- ROE = ?

16. Why do financial institutions that focus on lending do well with an upward-sloping yield curve?

16. Answer

An upward-sloping yield curve means that longer-term interest rates are higher than short-term interest rates. It tends to be favourable for the profitability of lending institutions because their loans and security holdings on the asset side of their balance sheet tend to have longer maturities than their sources of funds (liabilities). Lending institutions would experience a positive maturity gap between the average maturity of their assets and the average maturity of their liabilities. Revenues from longer-term assets will outstrip expenses from the shorter-term liabilities resulting in a positive net interest margin (interest revenues greater than interest expenses).

17. Consider the following example of a bond:

Principal:	R1 000 000
Coupon rate:	10% annually
Coupon payment date:	30 September
Issue date:	1 October 2008
Maturity date:	30 September 2016

(i) Calculate the annual income on the bond.
(ii) Calculate the running yield if the bond is bought at R1 080 000.
(iii) Explain the relationship between the buying price of a bond and the running yield.
(iv) Identify the three elements of the cash flow over the entire lifespan of the bond.
(v) Explain how the YTM differ from the running yield.

17. Answer

(i) 10% * R1 000 000 = R100 000.
(ii) Annual income/buying price = R100 000/R1 080 000 = 0.0926 = 9,26%
(iii) The running yield on a bond trading at a premium is lower than the coupon rate.
(iv) Coupon interest; Interest on interest (the compounding effect of reinvesting the periodic interest payments); Capital gain (or loss)

(v) All cash flows over the entire lifespan of the bond are taken into account when calculating the YTM. **(ALSO CALCULATE THE YTM)**

18. Explain the trade-offs banks face when they consider holding high-yield securities. (6)

18. Answer

Higher-paying securities might also be less liquid, and banks need to maintain liquidity to meet the cash needs of their depositors. Thus bank management has to weigh these risks versus the rewards. Bank management generally leans toward safety (or, some might contend, they are pushed toward safety by regulations) and hold securities with low default risk and a high level of liquidity.

19. How can the yield curve help a treasury manager choose which securities to acquire or sell? (5)

19. Answer

The yield curve is a graphical presentation of how market interest rates differ across loans and securities of varying term or time to maturity. It thus provides an implicit forecast of future interest rate changes. A positively sloped yield curve indicates the average expectation in the market that future short-term interest rates will be higher than they are today. Investors translate this expectation by shifting their investment holdings away from longer-term securities, as these will incur greater capital losses when interest rates rise.

On the other hand, a downward sloping yield curve indicates investor expectation of declining short-term interest rates. In this instance, a treasury manager or officer would consider lengthening portfolio maturity, as falling interest rates offer the prospect of substantial capital gains income from longer-term investments.

20. Identify and describe the different sources of income/profit of banks

A bank has various income/profit sources consisting of primarily of:

- Interest income
- Investment income
- Trading income (i.e. mostly treasury driven)
- Fees

A bank generates a net interest income (NII) because the interest rate associated with its assets, mostly loans, are higher than the interest rate payable on its liabilities, mostly deposits. Banks also generate income when profitable trading activities (mostly performed by the treasury department within a bank) are concluded in different markets/instruments, i.e. buy a bond at a low price and selling it at a higher price or buying a share index at a low price and selling it at a higher price.

A bank's trading portfolio consists of various instruments, such as bonds, other securities, foreign exchange, commodities and derivative which the bank buys and sells as part of its normal treasury trading activities.

There are accounting procedures that have to be followed in terms of reporting trading portfolios and strategic investments. The trading portfolio is marked-to-market (comparison of current market price with the historic price of the asset) daily according to accounting standards

Investment income may be in the form of interest (if for example Treasury notes or bonds are included in the book) or in the form of dividends (if for example shares are included in the book). Banks have to analyse the tax implications of their investments. Tax treatment by the government may be different between interest and dividends and double taxation agreements may treat the nature of income differently.

Banks earn commissions and fees for undertaking a variety of activities. This sort of income is classified as non-interest income because it does not relate to the price of money. Commission and fees are mostly based on the price of time or as compensation for risk. In the retail market, for example, it is common to levy transaction charges on current accounts to pay for the time spent in administering accounts. Bank charges are classified as non-interest income.

Alternatively, the bank may charge a commitment fee to a potential borrower whereby the bank undertakes to make funds available at short notice and the fee is some compensation for the possibility that the bank might have difficulty in gathering the necessary funds.