Modern Financial Investment Management

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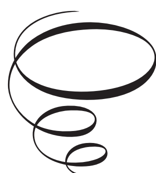
By

Ephraim Matanda

Cambridge Scholars Publishing



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FOREWORD

The author of the book, *Modern Financial Investment Management*, is a senior lecturer in Banking and Finance at the Great Zimbabwe University, Masvingo, Zimbabwe. It was the author's observation that most developing economies the world over have failed to align their development processes towards the sustainable development path because of lack of financial resources and/or financial investment strategies. Therefore the writing of this book was motivated by the author's need to equip economic players and the governments of emerging economies with the knowledge and expertise needed for making finance a tool for their growth and development. Countries without sufficient financial resources were just as weak as human bodies without enough blood, hence their continuous failure to grow and eradicate hunger, starvation, poverty and diseases amongst their people. The majority of governments of developing countries have failed to invest their countries' financial resources since the attainment of political independence, hence their failure to innovate, grow and develop. The book is structured in such a way that it starts off with conventional notions of finance where operations of money and capital markets are put forward before the examination of financial models such as capital asset pricing, arbitrage pricing, and three factor and simple index models. Countries are introduced to conventional financial securities, mainly certificates of deposit, bills, bonds and shares or stocks which can be traded on financial markets and their indispensable use in the growth and development of nations. The book proceeds to evaluate the need for perfect and efficient market systems in an economy before considering the benefits that developing countries would draw from the introduction of derivative markets. Some of the specific benefits that countries would draw from the introduction of derivative markets were the improved financialization of the economy, efficiency, transparency, discipline, innovation and technical progress. Most developing countries have very shallow conventional financial markets yet on the other hand had abundant resource endowments which favoured the introduction of derivative markets immediately. The book concludes by exploring the framework on the acquisitions and mergers of financial firms and how these can be exploited in order to rescue small firms from liquidation and financial distress and/or lure much needed foreign capital for economic growth and development.

CHAPTER ONE

THE INVESTMENT ENVIRONMENT AND THE FINANCIAL SYSTEM OF AN ECONOMY

1.0 Objectives

By the end of this chapter one should be able to:

Define the terms investment environment and financial system;

Identify and explain the components of a financial system of an economy;

State and illustrate the main functions played by financial markets in an economy;

Differentiate between real and financial assets using specific examples;

Distinguish between money and capital markets using various instruments traded on each type of market;

Discuss the functions played by the financial system of an economy;

Define the equity market and demonstrate how it is operated in an economy**.**

1.1 Introduction

The relationship between the investment environment and the financial system is indispensable when it comes to the growth and development of nations, let alone capital accumulation for investment purposes. The financial system of an economy is central when it comes to getting the development process of a country on track. Financial markets and institutions offer a variety of securities for investment purposes by all economic players hence the need to explore the investment environment in much detail. It is critical to highlight the roles played by money, equity and

capital markets in general in an effort to advance the major functions they perform in terms of the growth of nations towards sustainable development.

1.2 The Financial System

A financial system or sector can be defined as a network of financial markets, institutions, instruments, services and non-financial economic units (NFE) which include people, institutions, corporations, quasi-governmental organizations and the public sector of an economy. The non-financial economic units can either be surplus or deficit units or savers and borrowers respectively. Bhole (1999) defines a financial system as a system comprising specialized and non-specialized financial institutions, of organized and unorganized financial markets, and of financial instruments and services which facilitate the transfer of funds from surplus units to deficit units. The parts of the financial system are not always mutually exclusive. For instance, financial institutions operate on financial markets and are therefore an integral part of such markets.

According to Bhole (1999) the word "system" in "financial system" implies a set of complex and closely connected or interlinked institutions, agents, practices, markets, transactions, claims and liabilities in the economy. A financial system is therefore concerned about money, credit and finance which three terms are intimately related yet somewhat different from each other. Money refers to the current medium of exchange or the means of making payments in an economy. It can also be referred to as the notes and coins in circulation in a given economy. Credit or loan on the other hand is the sum of money to be returned normally with interest. The term also refers to the debt of an economic unit. Finance is the monetary resources and comprises the debt and ownership funds owned by the state institution, company or individual person. In other words, finance is made up of the notes and coins in circulation plus paper instruments also called financial assets or securities.

Finance institutions are business organizations that act as mobilisers and depositors of savings as well as providers of credit finance to the community. These are different from non-financial business organizations in the state of their business. It is argued that while financial institutions deal in financial assets such as deposits, loans and securities, the industrial and commercial organizations on the other hand are involved in real assets such as machinery, the stock of assets and real estate. The structure of a financial system of an economy reflects its major components as financial markets, financial institutions, financial instruments or assets and financial services

as alluded to earlier on. Financial institutions are divided into banking institutions and non-banking institutions. Banking institutions are providers of payment mechanisms and include central banks and co-operative and corporate banks. The non-banking financial institutions deal in non-banking financial transactions and services and include organizations such as life insurance companies, pension funds, unit trusts, micro-finance institutions (MFIs) and building societies. Financial institutions can also be classified into intermediaries and non-intermediaries. Intermediaries are go-betweens that stand between savers and investors (surplus and defects units respectively) when it comes to the transfer of monetary resources.

Financial intermediaries on the other hand are classified as deposit-taking, non-deposit-taking, non-banking and portfolio institutions and other financial institutions. Deposit-taking intermediaries are banking intermediaries which mobilize financial resources from firms and individuals in an economy, such as commercial banks (taking deposits and loans), merchant banks (mobilisers of corporate, trade and investment finance), discount houses, development banks and central banks. Non-banking intermediaries are providers of financial services other than banking services and include POSB, building societies and microfinance institutions (MFIs).On the other hand, non-deposit-taking intermediaries are organizations that are outside the financial services sector framework and include contractual intermediaries such as insurance and life assurance companies, pension and provident funds organizations such as the National Social Security Authority (NSSA). Portfolio institutions are intermediaries that provide investment opportunities to firms, institutions and individuals for the construction of investment or asset portfolios and include unit trust organizations (for small investment savings), investment trust portfolios and asset management companies (for equity and wealth portfolios). The other financial institutions that act as intermediaries in an economy are finance houses or companies such as leasing corporations.

Financial markets can be defined as centres or arrangements that provide facilities for buying and selling financial claims and services in an economy. The corporations, financial institutions, individuals and governments trade in financial products on these markets either directly or through brokers and dealers on organized exchanges. The financial markets are also classified as primary or secondary in nature. Primary markets are direct or initial public offer (IPO) markets for financial claims for new securities, and are also called new issue markets. Secondary financial markets refer to financial markets that deal with securities that have already been issued, are existing or outstanding in the financial system of an economy. It is also further

argued that primary markets are mobilisers of savings and suppliers of new, fresh or additional capital to business units in an economy. On the other hand, secondary markets are known for contributing indirectly to the supply of additional funds in an economy by rendering all securities issued on the primary markets, liquid and easily marketable. Stock and bond markets also have both primary and secondary market segmentations. Financial markets are often classified as capital and money markets, which perform the same function of transferring financial resources to the producer.

1.3 Real and Financial Assets

A security is a financial asset as opposed to a real asset, which is tradable on the market. A security can also be defined as a certificate representing a claim to cash flows generated by a real asset owned by a firm or government. Real assets are business assets that determine the productive capacity of a corporation or an economy as a whole. Such assets can also be defined as the physical assets possessed by a firm that are used for generating income and include plant and machinery as well as land and buildings. Financial assets on the other hand are certificates or securities that are issued by firms, institutions and governments in order to raise monetary resources for specific projects from the general investing public. Financial securities facilitate the transfer of financial resources from the investors to the corporations and include instruments such as bonds and shares.

Financial assets are used by investors to make decisions between the immediate consumption of their incomes or investing in order to have enhanced consumption in the future. Reilly and Brown (1999) define an investment as the current commitment of an investor’s dollars in order to derive some future payments. Bonds for instance are issued by firms as instruments for borrowing funds from the investing public in an economy. On the other hand, shares are issued as a way of raising funds by way of creating an enlarged ownership capacity of the already existing corporation. Therefore bondholders are creditors to the firm while shareholders are owners of the firm. Firms grow wealth for their shareholders by using funds raised from the issuing of financial securities to buy real assets. Hence returns investors drawing from investments in securities depend on incomes generated by real assets financed through trading in financial assets. It can therefore be argued that the values given to financial securities or assets are derived from the values of the underlying or reference real assets.

1.4 Financial Markets and their Participants

The main economic players on financial markets are firms, households and government and financial intermediaries such as investment corporations, banks and the Central Bank.

1.4.1 Firms

Firms issue financial securities to the investing public such as bonds and shares so as to use them to raise funds from the general public. The funds so generated are then used to buy real assets to be used in raising income for the firm.

1.4.2 Households

The investing public includes households that are interested in a wide variety of real and financial assets. The investment preferences of households are influenced by various factors such as disposable incomes, tastes and risk appetite levels. For instance, high income households would normally invest in shares and real estate in order to generate wealth for future generations.

1.4.3 The Government

Governments the world over require financial resources to finance public expenditures in their economies. This obligation can be met through borrowing from public taxation. Financial securities issued by governments, for example treasury bills and bonds by definition, are low-risk assets and can be issued at very low cost for the purposes of using them for borrowing from the investing public.

1.4.4 Investment Corporations

These can be in the form of unit trusts or mutual fund corporations which pool together and manage the funds of many small investors to make money through the advantage of large-scale trading. Investment bankers for instance provide specialist services to businesses in an economy such as raising capital through the selling of shares and debentures, the underwriting of shares and the pricing of new share issues.

1.4.5 Commercial Banks

Banks raise monetary resources by taking deposits from the general public and issuing retail and wholesale loans to deserving economic players. Therefore, banks make profits through the spread between the rates they pay to depositors and receive from borrowers for credit facilities extended to them. The banks act as financial intermediaries between lenders (surplus units) and borrowers (deficit units) in the process of the transfer of funds in an economy.

1.4.6 Central Bank

The Central Bank in an economy is the regulator and supervisor of all commercial banks and similar financial institutions in an economy. The role of the bank was extremely critical when it came to the protection of depositors' funds and the growth and development of nations. The bank is the government banker and advisor and hence its efficiency and effectiveness in service provision were just as good as the success of the development process of the whole economy.

1.5 Money and Capital Markets

Bodie (1999) argues that financial markets can be divided into money and capital markets. These financial markets are made up of securities such as those issued by government, local, municipal and corporate bodies. The main characteristics of money markets and capital markets are based on time, return and risk variables and are detailed below.

1.5.1 Money Markets

These are markets for securities of a short-term maturity or nature, which is a life span of a year or less. The financial securities traded on money markets are risk-free, with low transaction costs and highly marketable and liquid assets. The common money market securities are certificates of deposit, treasury bills, commercial paper, repurchase agreements and bankers' acceptances.

1.5.1.1 Certificates of Deposit (CDs)

These are time deposits made with banks which may not be withdrawn on demand by the holders. Firms or households may have excess cash in their operations which they may not need or may not be certain as to when it may

be required. Under such a scenario the firm or household may proceed and deposit the cash with a bank. The most common type of certificate of deposit is the negotiable certificate of deposit (NCD). The owner of the NCD can proceed and sell it on the market at any time before maturity. However, its market value will depend on the prevailing discount rate and the number of days remaining to maturity.

1.5.1.2 Treasury Bills (TBs)

These are money market securities issued by monetary authorities (Central Bank) to the investing public on behalf of the government in an economy. Treasury bills are the most marketable and liquid instruments mainly because they are issued and backed by the government in an economy. These assets are used to control money supply, mainly inflationary and deflationary pressures, in order to attain equilibrium in the financial sector of an economy.

1.5.1.3 Commercial Papers

These are short-term financial securities issued by large and reputable corporations to the investing public in place of borrowing directly from commercial banks. Most corporations have their issues to the investing public supported by lines of credit from banks. Such bank facilities accord the borrowers access to cash to pay off the notes at their maturity periods.

1.5.1.4 Bankers' Acceptances (BAs)

These arise from orders made by client firms to their banks to pay certain amounts of money at some future dates, and are arrangements similar to post-dated cheques. The banks would accept the clients' orders by endorsing them and assuming responsibility to pay the bearers on the due dates. These acceptances are negotiable instruments because the holders can trade them on the secondary market at some discount from their face values. Bankers' acceptances are commonly used in export and import transactions where the creditworthiness of trading partners is usually difficult to ascertain.

1.5.1.5 Repurchase Agreements (Repos)

These are some form of short-term or overnight borrowing used by dealers in treasury bills. The dealers proceed to sell the treasury bills on an overnight basis and agree to purchase them back the following morning at prices slightly higher than those they were sold for then. The differences in

the two sets of prices are the interest rates earned for the night. Dealers in such arrangements obtain one-day loans from the investors using treasury bills as collateral securities for the credit facilities, that is investors locate dealers with treasury bills and negotiate to purchase them. Finally investors agree to sell these papers or financial assets back to the dealers the following day at prices slightly higher than those they would have bought them for.

1.5.2 Capital Markets

These are financial markets for long-term financial instruments and real assets that is assets with a lifespan of more than one year from the date of issue. Capital markets, like money markets, have both primary and secondary market segmentations. These financial markets are made up of fixed and variable income securities issued by both corporate organizations and the government (Bodie et al, 1999). Therefore, bonds and shares sold on capital markets represent fixed and variable income securities respectively. Capital markets are therefore financial market frameworks for the trading of securities such as bonds, shares and real assets.

1.5.2.1 Treasury Bonds (TBs)

These financial assets are issued by the government in an economy for raising funds from the investing public in the long term usually for 10 to 30 year maturities. Treasury bonds may be callable in nature, implying that they provide room for the treasury (the issuer)to repurchase them at par value before maturity. Municipal and local bonds are issued by quasi-governmental bodies and traded in the same way that treasury bonds are traded on capital markets.

1.5.2.2 Corporate Bonds

These financial assets are issued by corporations in order to borrow funds from the investing public for certain private investments. The bond pays a fixed amount of income to the holder or investor annually based on its face value. Redeemable bonds have a maturity date on which their face values will be paid to bondholders or investors by the issuers. Treasury bonds may be secured or unsecured through assets owned by their issuers. These bonds can also be callable like treasury bonds or convertible in nature. Bonds are said to be convertible if they give their holders the right but not the obligation to convert them into a specified number of ordinary shares of the company at an agreed price and after an agreed period of time.

1.5.2.3 Equity Securities

The markets for equities are made up of common and preferred stocks or shares. The returns to investments in these stocks are in the form of dividends and capital gains. Reilly and Brown (2000) argue that a shareholder is an investor with an ownership stake in a corporation. Ordinary shareholders are entitled to residual income from the profit after obligations to debt and preference equity providers have been settled. Preference shares may also be redeemable in nature, implying that corporations may be obliged to pay back the capital invested to the investors at the end of an agreed period of investment time.

The difference between money and capital markets is arbitrary. A logical difference would be one focusing on each of them as segmentations of financial markets. Money markets mainly focus on non-financial economic (NFE) units (surplus and deficits units) rapid adjustment of actual liquidity positions to the levels desired at a given time.

Capital markets on the other hand focus more on savings and investments that are vital to economic growth, stability and the provision of a bridge by which the savings of surplus units may be transformed into investment of deficit units such as asset acquisition. Hence capital markets focus mainly on economic stability and development by expanding the total amounts of savings and investment in all sectors of the economy.

1.6 Functions of the Financial Sector

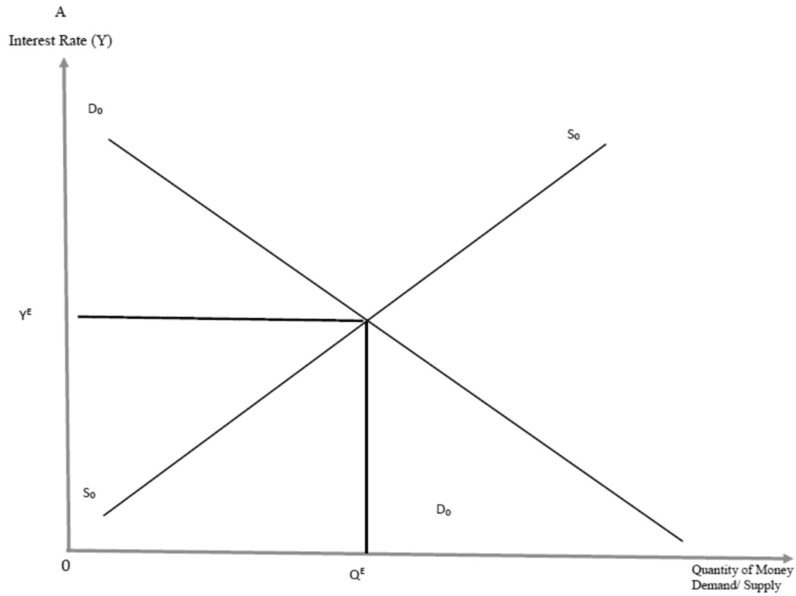
Financial institutions or intermediaries offer various steps of transformation services. They issue claims to their customers that have different characteristics from those of their own assets. For instance, banks accept deposits from the public as a liability and convert them into their own assets (loans) that is in this respect they perform a liability-asset transformation function. These institutions also choose and manage portfolios whose risk and return may alter by acquiring better information and reduce and overcome the transaction cost, they do so in forms of lending and borrowing. On the one side financial institutions also distribute risk through diversification and thereby reduce it for savers in the case of mutual funds (risk transformation functions).They also offer savers alternative forms of deposits according to their liquidity preferences and providers borrow with loans of requisite maturities(maturity transformation functions).Lastly, financial institutions also provide large volumes of finance and the basis of small deposits or unit k (these are called the size transformation function).

1.7 Equilibrium in Financial Markets

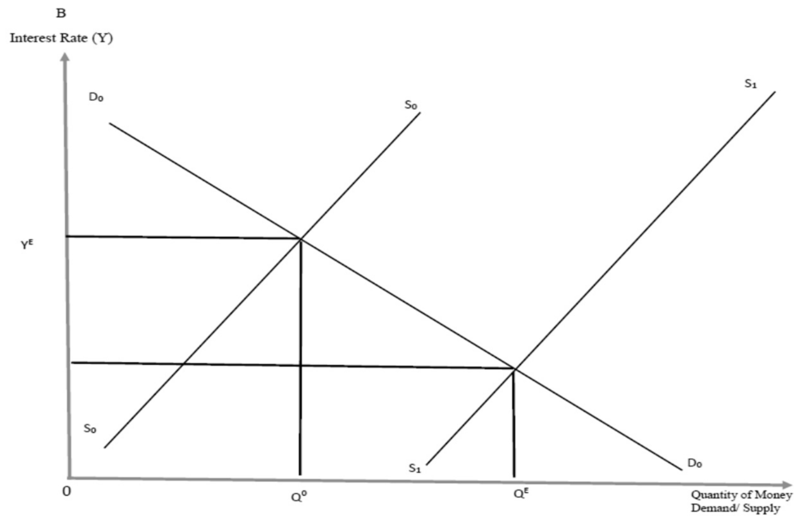
In a similar way to the general and relative price levels in commodities markets, we have the general price and structure of interest rates in an economy which govern the operations of financial markets. Equilibrium in financial markets is usually determined under the strict assumptions that there are perfect competition markets and forces of demand and supply that are applied in the economy. Therefore financial markets are said to be perfect when a large number of savers and investors operate on the markets and both savers and investors are rational in their behavior. It can also be argued that all operators on the markets have full information, freely available to them and they incur no transaction costs in their operations. On the other hand it is also assumed that all financial assets traded are infinitely invisible, participants on the markets have homogeneous expectations and no taxes are borne by investors in the economy.

Under all the above ideal conditions, financial markets attain equilibrium conditions when supply and demand are equal to each other. According to the Classical Theory the supply of savings and the demand for investment determine the equilibrium level of the rate of interest to be obtained in the economy. The Loanable Funds Theory on the other hand, argues that the supply and demand for loanable funds determine the rate of interest to be obtained in an economy. Alternatively, the Keynesian Theory says that the equilibrium rate of interest is determined by forces of supply and demand for money in an economy. Therefore, on the whole it can be stated that equilibrium in the financial markets is established when the expected demand for funds (credit) for short-term and long-term investment matches the planned supply of funds generated out of savings and credit creation. Shifts in either supply or demand curve or both result in changes in market equilibrium positions as demonstrated below:

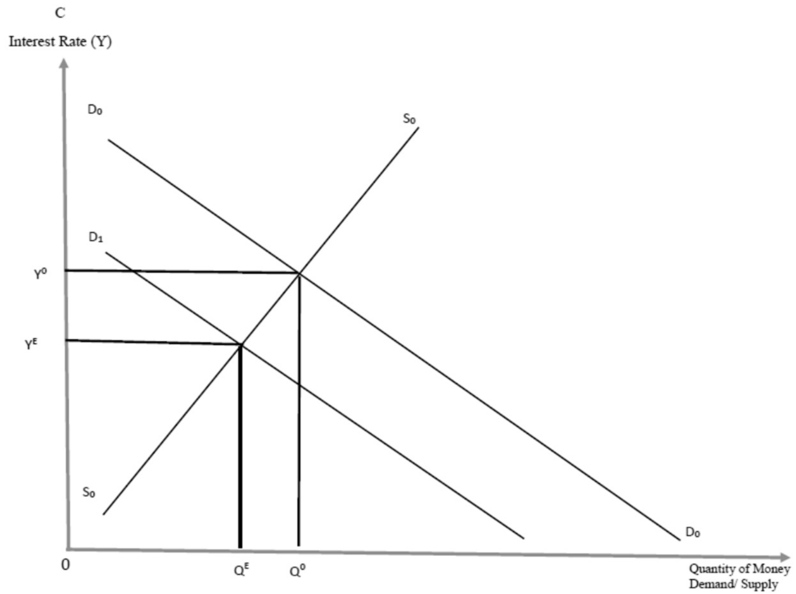
Figure 1.1 Demand and Supply Curves on Money Demand and Supply



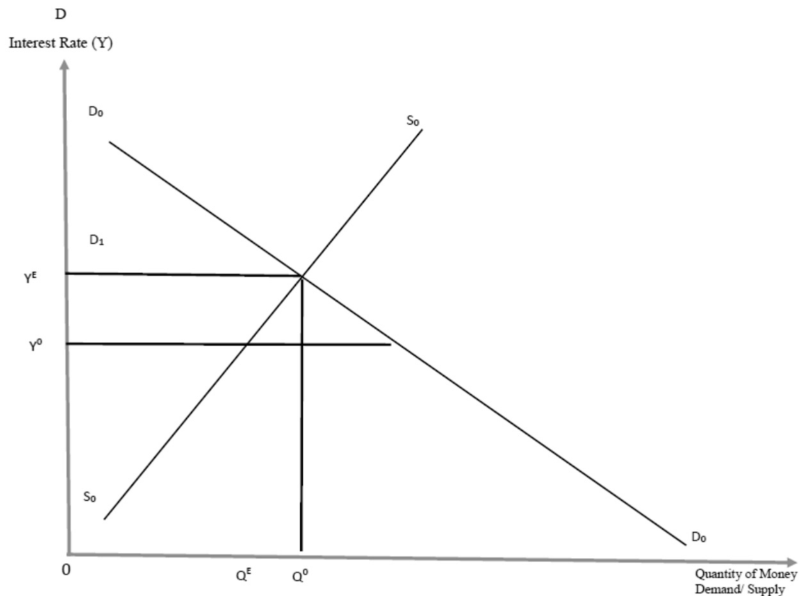
The interaction between supply and demand for funds in diagram A attains equilibrium at point (P^E; Q^E).



However under B, an increase in the supply of funds in the financial sector while demand is held constant, changes the equilibrium point from $(P^0;Q^0)$ to a lower point $(P^E;\, Q^E)$.



Assuming in the third instance above that supply is held constant and demand decreases, the equilibrium point will shift inwards from $(P^0; Q^0)$ to $(P^E; Q^E)$.



Finally, when the government sets an interest rate such as Y above, lying below the equilibrium rate, this rate of interest results in excess demand which leads to market failure in the economy.

1.8 Summary

There was a discussion that the investment environment and the financial system were the critical benchmarks for the growth and development of nations, let alone capital and shareholders' wealth accumulation in an economy. The financial system of an economy was found to be made up of financial markets, financial institutions, services and instruments together with non-financial economic (NFE) units. These components of the financial system were indispensable when it came to the transfer of resources from surplus to deficit units in an economy. The discussion was extended to look at the assumptions and theories of equilibrium in financial markets. The roles played by money, credit and finance in money, equity and capital markets in general were discussed in detail as far as the growth of nations towards sustainable development was concerned.

1.9 Exercises

1.9.1 What is meant by the term, financial system of an economy?

1.9.2 Identify and explain the major components of the financial sector of an economy.

1.9.3 Discuss the characteristics of money and capital markets of an economy and the types of securities that are traded on each of these markets.

1.9.4 Examine the assumptions that are laid down for market equilibrium to be obtained in financial markets of an economy.

1.9.5 Evaluate the theories that are used to explain supply and demand for financial resources in an economy.

1.9.6 Explain the main differences between the concepts of credit, money and finance.

1.9.7 Evaluate the relationship that exists between money and capital financial markets of an economy.

1.9.8 Discuss the concepts of increase and decrease in money supply or demand with respect to interest rates and equilibrium attainment in the financial sector of an economy. Use diagrammatic illustrations to explain your concept

CHAPTER TWO

TRADING OF MONEY MARKET SECURITIES

2.0 Objectives

By the end of this chapter one should be able to:

Distinguish between discount and interest bearing money market securities;

Explore the issuing mathematics of money market securities in an economy;

Examine the dealing mathematics of money market securities on financial markets;

Demonstrate the process of pricing money market securities;

Define the concept of time value of money and use it to demonstrate the terms simple and compound interest;

Distinguish the concept of nominal rates of investment interest from equivalent rates.

2.1 Introduction

The trading of money market securities takes place on primary and secondary markets that exist in the financial system of an economy. Money market securities can be classified as discount or interest bearing securities depending on their nature. Before a lot is said about the trading of money market securities, it is critical to know how such securities are issued on financial markets. The issuing mathematics of money market securities is to be examined first before the dealing and pricing mathematics of such securities are dealt with. The chapter will proceed to discuss the concept of time value of money based on simple and compound interest before ending with concepts of nominal and equivalent rates of interest used on money markets.