# FINANCIAL MARKETS I: INTRODUCTION TO MARKET MICROSTRUCTURE

## Real assets versus financial assets

The material wealth of a society is determined ultimately by the productive capacity of its economy—the goods and services that can be provided to its members. This productive capacity is a function of the real assets of the economy: the land, buildings, knowledge, and machines that are used to produce goods and the workers whose skills are necessary to use those resources. Together, physical and “human” assets generate the entire spectrum of output produced and consumed by the society.

In contrast to such real assets are financial assets such as stocks or bonds. These assets, per se, do not represent a society’s wealth. Shares of stock are no more than sheets of paper or more likely, computer entries, and do not directly contribute to the productive capacity of the economy. Instead, financial assets contribute to the productive capacity of the economy indirectly, because they allow for separation of the ownership and management of the firm and facilitate the transfer of funds to enterprises with attractive investment opportunities. Financial assets certainly contribute to the wealth of the individuals or firms holding them. This is because financial assets are claims to the income generated by real assets or claims on income from the government.

## Market microstructure

The field that studies market design of financial markets is called “Market Microstructure”. Garman (1976) was the first to introduce this terminology when writing his paper on market making and inventory holding costs entitled “Market Microstructure”. Market microstructure deals with the economic forces behind trades, quotes and prices on markets in general and financial markets in particular.

## How securities are traded

When firms need to raise capital, they may choose to sell (or float) new securities. These new issues of stocks, bonds, or other securities typically are marketed to the public by investment bankers in what is called the **primary market.** Purchase and sale of already issued securities among private investors takes place in the **secondary market.** There are two types of primary market issues of common stock. **Initial public offerings,** or IPOs, are stocks issued by a formerly privately owned company selling stock to the public for the first time. Seasoned new issues are offered by companies that already have floated equity. A sale by EABL of new shares of stock, for example, would constitute a seasoned new issue. We also distinguish between two types of primary market issues: a public offering, which is an issue of stock or bonds sold to the general investing public that can then be traded on the secondary market; and a private placement, which is an issue that is sold to a few wealthy or institutional investors at most, and, in the case of bonds, is generally held to maturity.

## Investment Bankers and Underwriting

Public offerings of both stocks and bonds typically are marketed by investment bankers, who in this role are called **underwriters.** More than one investment banker usually markets the securities. A lead firm forms an **underwriting syndicate** of other investment bankers to share the responsibility for the stock issue.

The bankers advise the firm regarding the terms on which it should attempt to sell the securities. A preliminary registration statement must be filed with the CMA describing the issue and the prospects of the company. This preliminary prospectus is known as a red herring because of a statement printed in red that the company is not attempting to sell the security before the registration is approved. When the statement is finalized and approved by the CMA, it is called the **prospectus.** At this time the price at which the securities will be offered to the public is announced.

In a typical underwriting arrangement the investment bankers purchase the securities from the issuing company and then resell them to the public. The issuing firm sells the securities to the underwriting syndicate for the public offering price less a spread that serves as compensation to the underwriters. This procedure is called a firm commitment. The underwriters receive the issue and assume the full risk that the shares cannot in fact be sold to the public at the stipulated offering price.

An alternative to firm commitment is the best-efforts agreement. In this case the investment banker agrees to help the firm sell the issue to the public but does not actually purchase the securities. The banker simply acts as an intermediary between the public and the firm and thus does not bear the risk of being unable to resell purchased securities at the offering price. The best-efforts procedure is more common for initial public offerings of common stock, for which the appropriate share price is less certain.

**Shelf Registration**

Shelf registration allows firms to register securities and gradually sell them to the public for two years after the initial registration. Because the securities are already registered, they can be sold on short notice with little additional paperwork. In addition, they can be sold in small amounts without incurring substantial flotation costs. The securities are "on the shelf," ready to be issued, which has given rise to the term shelf registration. In Kenya, we have no example of firms that have done shelf registration.

**Private Placements**

Primary offerings can also be sold in a private placement rather than a public offering. In this case, the firm (using an investment banker) sells shares directly to a small group of institutional or wealthy investors. Private placements can be far cheaper than public offerings.

**Initial Public Offerings**

Investment bankers manage the issuance of new securities to the public. Once the CMA has commented on the registration statement and a preliminary prospectus has been distributed to interested investors, the investment bankers organize road shows in which they travel around the country to publicize the imminent offering (Often through the media). These road shows serve two purposes.

First, they attract potential investors and provide them information about the offering. Second, they collect for the issuing firm and its underwriters information about the price at which they will be able to market the securities. Large investors communicate their interest in purchasing shares of the IPO to the underwriters; these indications of interest are called a book and the process of polling potential investors is called bookbuilding. The book provides valuable information to the issuing firm because large institutional investors often will have useful insights about the market demand for the security as well as the prospects of the firm and its competitors. It is common for investment bankers to revise both their initial estimates of the offering price of a security and the number of shares offered based on feedback from the investing community.

**Where securities are traded**

1. **The secondary market**

   The trading in outstanding stocks takes place in the secondary market, for example if you want to buy shares of EABL, or Safaricom, or Stanchart, you would go to the NSE Secondary market. Note that secondary and primary markets exist side by side. During an IPO, the NSE will serve as a primary market.

2. **Over the counter market**

   In an over-the-counter (OTC) market any security may be traded there, but the OTC market is not a formal exchange. There are no membership requirements for trading, nor are there listing requirements for securities (Except at NASDAQ (?), the computer-linked network for trading of OTC securities in the USA). In the OTC market thousands of brokers register with the regulators as dealers in OTC securities. Security dealers quote prices at which they are willing to buy or sell securities. A broker can execute a trade by contacting the dealer listing an attractive quote. A good example of OTC is the forex market. In 1971 the National Association of Securities Dealers Automated Quotation system, or NASDAQ, began to offer immediate information on a computer- linked system of bid and asked prices for stocks offered by various dealers. The bid price is that at which a dealer is willing to purchase a security; the asked price is that at which the dealer will sell a security. The systems allows a dealer who receives a buy or sell order from an investor to examine all current quotes, contact the dealer with the best quote, and execute a trade. Securities of more than 6,000 firms are quoted on the system, which is now called the NASDAQ Stock Market. (**NB: PLEASE DOWNLOAD FULL NOTES FOR OTC FROM F&D: REFER TO COURSE OUTLINE).**

3. **The Third and Fourth Markets**

The **third market** refers to trading of exchange-listed securities on the OTC market. The **fourth market** refers to direct trading between investors in exchange-listed securities without benefit of a broker. The direct trading among investors that characterizes the fourth market has exploded in recent years due to the advent of the **electronic communication network,** or **ECN.**

## TRADING ON EXCHANGES

### The participants

The investor places an order with a **broker**. The brokerage firm owning a seat on the exchange contacts its commission broker, who is on the floor of the exchange, to execute the order. A **dealer**, in addition to being a broker, trades on his/ her own account.

The **specialist** is central to the trading process. Specialists maintain a market in one or more listed securities. All trading in a given stock takes place at one location on the floor of the exchange called the specialist's post. At the specialist's post is a computer monitor, called the Display Book, which presents all the current offers from interested traders to buy or sell shares at various prices as well as the number of shares these quotes are good for. Investors can either be retail (buy or sell small quantities of securities, mostly households), or institutional (who deal large blocks of trade, e.g. NSSF, Investment companies). A few wealthy individuals also do deal large quantities of securities.

**Trading platforms (Refer to Competition on financial markets pp. 5-13)**

## TYPES OF ORDERS

1. **Market order**

   Market orders are simply buy or sell orders that are to be executed immediately at current market prices. For example, an investor might call his broker and ask for the market price of KENOL. The retail broker will wire this request to the commission broker on the floor of the exchange, who will approach the specialist's post and ask the specialist for best current quotes. Finding that the current quotes are Ksh. 100 per share bid and Ksh. 100.15 asked, the investor might direct the broker to buy 100 shares "at market," meaning that he is willing to pay Ksh. 100.15 per share for an immediate transaction.

2. **Limit order**

   Investors may also place limit orders, whereby they specify prices at which they are willing to buy or sell a security. If the stock falls below the limit on a limit buy order then the trade is to be executed. If KENOL is selling at Ksh. 100 bid, Ksh. 100.15 asked, for example, a limit-buy order may instruct the broker to buy the stock if and when the share price falls below Ksh. 95. Correspondingly, a limit-sell order instructs the broker to sell as soon as the stock price goes above the specified limit.

   The table below illustrates the limit orders.

| Action | Condition | | |
|---|---|---|---|
| | | **Price below limit** | **Price above limit** |
| | **BUY** | Limit buy order | Stop buy order |
| | **SELL** | Stop loss order | Limit sell order |

### Block Sales

This is where Institutional investors frequently trade blocks of several thousand shares of stock.

### TRADING COSTS

Part of the cost of trading a security is obvious and explicit. Your broker must be paid a commission. Individuals may choose from two kinds of brokers: full-service or discount. Full-service brokers, who provide a variety of services, often are referred to as account executives or financial consultants. Besides carrying out the basic services of executing orders, holding securities for safekeeping, extending margin loans, and facilitating short sales, normally they provide information and advice relating to investment alternatives. Full-service brokers usually are supported by a research staff that issues analyses and forecasts of general economic, industry, and company conditions and often makes specific buy or sell recommendations.

**BUYING ON MARGIN**

When purchasing securities, investors have easy access to a source of debt financing called brokers' call loans- the act of taking advantage of brokers' call loans is called buying on margin.

Purchasing stocks on margin means the investor borrows part of the purchase price of the stock from a broker. The broker, in turn, borrows money from banks at the call money rate to finance these purchases, and charges its clients that rate plus a service charge for the loan. All securities purchased on margin must be left with the brokerage firm in street name, because the securities are used as collateral for the loan.

**SHORT SALES**

A short sale allows investors to profit from a decline in a security's price. An investor borrows a share of stock from a broker and sells it. Later, the short seller must purchase a share of the same stock in the market in order to replace the share that was borrowed. This is called **covering the short position**. The short seller anticipates the stock price will fall, so that the share can be purchased at a lower price than it initially sold for; the short seller will then reap a profit. Short sellers must not only replace the shares but also pay the lender of the security any dividends paid during the short sale.

**INSIDER TRADING**

One of the important restrictions on trading involves insider trading. It is illegal for anyone to transact in securities to profit from inside information, that is, private information held by officers, directors, or major stockholders that has not yet been divulged to the public. The difficulty is that the definition of insiders can be ambiguous. Although it is obvious that the chief financial officer of a firm is an insider, it is less clear whether the firm's biggest supplier can be considered an insider. However, the supplier may deduce the firm's near-term prospects from significant changes in orders. This gives the supplier a unique form of private information, yet the supplier does not necessarily qualify as an insider.

These ambiguities plague security analysts, whose job is to uncover as much information as possible concerning the firm's expected prospects. The distinction between legal private information and illegal inside information can be fuzzy.

**CURRENT TRENDS IN STOCK EXCHANGES**

1. **Demutualization of stock exchanges.**
   In demutualization, the ownership of the stock exchanges is being opened up. Note that stock markets have traditionally operated as a member's only club. The trend is towards opening up ownership to other investor and the public and listing the shares of the stock exchange.
2. **ICT and stock markets (CDS, Electronic trading)**
   ICT has profound effects on the trading of stocks. You can now buy or sell shares online. CDS accounts have come to replace the physical share certificates and helped lower cost, and speed up trading of shares.
3. **Globalization.**
   As an investor, you have the option of investing in other markets (investing offshore) e.g. the NYSE. This has been made possible by ICT
4. **Securitization.**
   Here pools of loans typically are aggregated into pass-through securities, such as mortgage pool pass-through. Then, investors can invest in securities backed by those pools. The transformation of these pools into standardized securities enables issuers to deal in a volume large enough that they can bypass intermediaries. We have already discussed this phenomenon in the context of the securitization of the mortgage market.

   **NB: (Download the OTC notes from F&D as per the course outline)**
   **(Be sure to distinguish commodity vs. financial markets; exchange markets vs. OTC markets)**