4 Organisational structure

4.1 Learning outcomes

After studying this text the learner should / should be able to:

1. Appreciate the risks faced by market participants in an OTC market and how these risks are overcome by an exchange.
2. Describe the methods of issue, the various participants and the roles they play in the primary bond market.
3. Comprehend the basic structure of an exchange-driven market.
4. Be familiar with the importance of the secondary bond market, the participants and the role they play in the market, the organisation and structure and functions of the secondary bond market.

4.2 Introduction

As an introduction we present an outline of organisational structure of financial markets (see Figure 1). Markets are either spot markets or derivative markets and the difference between the two essentially is when the deal is settled. The spot market settles as soon as is practically possible whereas in derivatives deals the underlying instrument is settled (sold / bought) in the future at a price established at the outset. In the spot bond markets of the world the settlement date differs widely between 3 and 7 business days.

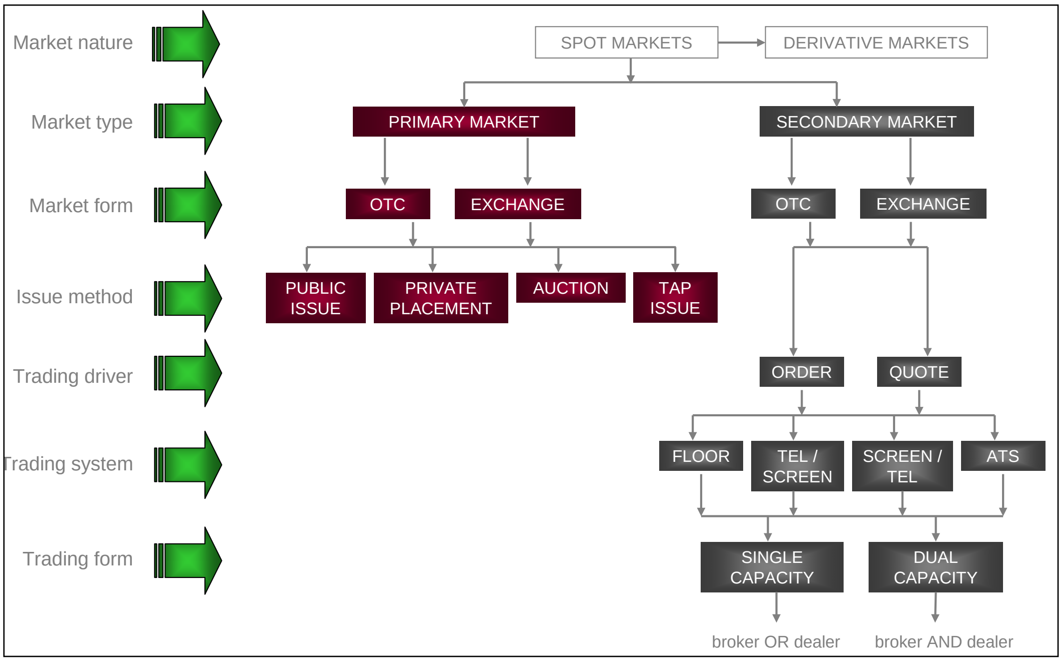

Figure1: organisational structure of spot financial markets

Like all marketable securities markets, the spot bond market has a *primary market* and a *secondary market*. The primary market is the market for the issue of new bonds while the secondary market is the market for the exchange of bonds that are already in issue. These markets are either *exchange-driven markets* (EDMs) or over-the counter (OTC) markets.

In this section we discuss the elements of the organisational structure of the bond market and make reference where applicable to the differences between OTC and exchange-driven markets. The following are the sections:

- Risks in, and shortcomings of, OTC markets.
- Advantages of exchange-driven markets.
- Primary market.
- Secondary market.

4.3 Risks in, and shortcomings of, OTC markets

In OTC markets two main risks exist that can be subsumed under the heading of *counterparty risk*:

- *Settlement risk*. This is the risk of the deal not being settled promptly by the counterparty or of the counterparty reneging on the deal as a result of a price change. This risk includes the risk of the intermediary to the deal (the broker-dealer) accepting the funds from the buyer and not paying the seller.
- *Tainted scrip risk*, i.e. the risk of non-valid securities certificates being introduced into the market by sellers.

OTC markets also suffer from shortcomings such as:

- Securities being physically delivered before payment can be effected in the form of a cheque (which may also need to be bank guaranteed), which then has to be deposited. There are numerous problems in this regard such as securities being stolen from the delivery vehicle, or late delivery (settlement risk).
- Lack of information on market liquidity.
- Lack of a price discovery mechanism.
- Little or no surveillance of the broker-dealers[26] in the market. One or more of them may be trading for own account without the knowledge of the client (buyer or seller of the securities). Or one or more of them may also be capitalised too low for the type of business they conduct (which could lead to fraud).

These risks and shortcomings are eliminated or lessened by a formalised exchange.

4.4 Advantages of exchange-driven markets

The purpose of a financial exchange is to facilitate trading in the securities for which it was created, and this it does by establishing a secure environment for the participants in the market, i.e. the issuers, investors, speculators and members / authorised users (the broker-dealers). By *secure environment* is meant that the trading and settlement of deals are achieved in an efficient and risk-free manner. In fact, an exchange can be seen as an institution that *risk manages the process of dealing, clearing and settlement on behalf on the participants*, saving them the expensive process of specific risk management.

Essentially, the advantages of exchange-driven markets are:

- Elimination or lessening of the risk of trading.
- Efficiency of trading.

The counterparty risks referred to earlier are eliminated or lessened:

- Settlement risk.
  - Deals are settled efficiently by the exchange (applies especially in a dematerialised environment) through a deal booking system.
  - The broker-dealers are members of the exchange and are therefore under surveillance; in the unlikely event of a member defaulting or defrauding a client the guarantee fund of the exchange covers investor losses.
  - Member broker-dealers will know their clients and settlement problems are unlikely.
- Tainted scrip risk is lessened (and eliminated in an immobilised or dematerialised market).

The elimination or lessening of risk by the exchange goes hand-in-hand with efficiency of trading (security when dealing with a member, efficient deal capture system, clearing and settlement by the central scrip depository, and so on).

The elimination or lessening of risk and the efficiency of trading may be subsumed under the heading of "a secure and efficient dealing environment". Such an environment attracts more participants, local and foreign, which leads to higher turnover, i.e. higher liquidity, and ultimately to efficient price discovery, and possibly to lower transactions costs.

A further word on price discovery is perhaps required. Price discovery (the determination of market prices) is not efficient in many OTC markets, and this is because liquidity is low, and low liquidity is the result of the existence of the risks and other factors referred to earlier. Efficient price discovery is largely a function of liquidity (many role-players and number of deals), and it means that information about the relevant market is priced into the market at all times.

4.5 Primary market

4.5.1 Introduction

The primary bond market may be defined as the conventions, facilities and legal prescriptions that exist for the issue of new bonds. It is also the market in which the issuer receives funds.

It is notable that bond (or multiple-asset) exchanges not only facilitate trading in bonds, but also facilitate the issue of new bonds (the primary market). In many bond markets where exchanges exist the issuers are not required by law to list their bonds; however, it is likely that issuers will, and the reason for this is that demand is positively affected by a listing. The rigorous process a new issue has to endure provides investors with a great measure of comfort. This of course does not mean that the investors do not undertake their own credit assessments; it merely means that a listing is a positive factor, and not listing is a negative factor.

4.5.2 Methods of issue

There are a number of ways in which primary issues are made:

- Public issue.
- Private placement.
- Tap issue.
- Auction.

Before discussing each of these methods of issue, there are a number of requirements that are common to all the methods (with the exception of issues via market making) that need mentioning. In an exchange-driven market they are:

- For each new issue that is listed, the issuer is obliged to appoint a *sponsoring member*, who is a member of the exchange. The sponsoring member may also be the *arranger*, which means that the member undertakes to draw up most of the documentation required.
- A *dealer* to the issue is also appointed. This is usually the sponsoring member, but does not have to be. The dealer undertakes to do all *dealing* on behalf of the issuer.
- In addition, the issuer appoints an attorney, or a firm of attorneys, as *legal advisors*.
- A *transfer secretary* is appointed to handle all transfers of bonds.
- A firm of auditors is appointed as *auditors to the issue*.
- There may also be an *underwriter to the issue*. This undertaking by the underwriter (which is done for a fee), gives comfort to potential investors, i.e. that a financial institution that is fully acquainted with the bond market and the issuer is prepared to take up all bonds not taken up by the public.
- A *placing document* or *prospectus*, setting out the details of the issue and the issuer, is drawn up prior to the issue. All the parties mentioned above are involved in this document.

In OTC bond markets, a placing document is required and some of the other requirements are also obligatory.

It is also important to note that in some exchange-driven markets the facility of listing a *bond (or note) programme*, as against listing specific instruments initially, exists. This provides the issuer with the opportunity to issue bonds when it is appropriate to do so (i.e. when it requires the funds or when the market is conducive for issues), without having to go through the laborious (and expensive) listing procedure each time.

Each of the four main methods of issue is covered briefly below.

4.5.3 Public issue

A public issue is one where the general public (the main ones being the so-called institutions [the retirement funds, insurers and the bond funds (via their fund managers)] is invited to subscribe for a specific amount of bonds. The placing document, which sets out the details of the issue, is advertised in the press.

The public completes the subscription form, the most pertinent aspect of which is the amount subscribed for. In the event of an over-subscription, a partial allocation is made to subscribers. A public issue is usually made at a specified price.

4.5.4 Private placement

A private placement is where the issuer and/or its appointed sponsoring member makes contact with the institutions, describe the details of the issue in a formal presentation, and invites them to take up a portion of the amount on issue. This process is sometimes also referred to as *bookbuilding*.

4.5.5 Tap issue

The tap issue method of issuing bonds is generally undertaken by issuers that are smaller than government that make a market in their own bonds in order to increase the marketability of their bonds (usually the parastatals). They make it known to the institutions that they are open for business and from then on quote bid and offer rates / prices simultaneously at all times for all their bond issues. In the process of making the market, they are net sellers of their own bonds. This is referred to "tapping" out their bonds.

Some of the larger companies also make use of this method of issue but outsource this function to banks that specialise in this activity.

4.5.6 Auction

The auction method of issuing bonds generally is the preferred method of issuing bonds, particularly by government. Bonds are either auctioned directly to investors or indirectly via market makers / primary dealers to investors.

In most markets government bonds are issued by the central bank on behalf of government, i.e. the central bank acts as the agent of government. In some markets the central bank invites the institutions and the banks, etc to tender directly. However, in most markets the central bank appoints certain of the banks (which are market makers) as *primary dealers* (this may be seen as a subset of market making).

When tenders (auctions) are announced the amount is specified and the primary dealers are obliged to tender for a specified minimum amount of bonds. In addition the primary dealers are required (in some of the markets) to make a market in these (or certain of these) bonds by quoting firm bid / offer rates based on the size of the deal (usually the institution asking for the quote does not have to disclose whether it is a buyer or seller).

Generally, parastatal enterprises and companies that participate in the bond market as issuers also appoint a certain number of market makers (usually a smaller number than in the case of government) to make a market in their bonds. The companies usually do not ask the market makers for bids but issue to them at fixed prices.

4.5.7 Economic function of primary market

The primary bond market plays a significant role in the financial system. It permits government, parastatals and the private sector to *acquire long-term funds for investment in projects of a long-term nature,* which are usually ventures that add to the infrastructure and production capacity of the economy.

The primary market also assists the secondary market in times of low turnover. All markets go through periods of turbulence and subdued trading, both scenarios leading to rates being inefficient (or extremely volatile). A primary issue during these times may set the norm rate for secondary market trading. This is because the large institutions will have established the primary issue rate.

4.6 Secondary market

4.6.1 Introduction

This section covers the following topics relating to the secondary market:

- Definition.
- Significance of the secondary bond market.
- Basic structure of an exchange.
- Participants in the secondary market.
- Order-driven and quote-driven secondary markets.
- Commissions.
- Clearing and settlement.
- Trading.

4.6.2 Definition

The *secondary bond market* may be defined formally as the conventions, facilities and legal prescriptions that exist for the exchange of bonds in issue. The issuer does not receive funds in this market – this happens only in the primary market. It is the market that enables holders of previously issued securities to acquire funds by disposing of their holdings and enables investors to invest funds by purchase existing or new securities.

4.6.3 Significance of the secondary bond market

The secondary securities market plays a significant role in the financial system. In the case of the secondary bond market, the following advantages may be mentioned:

- Efficient price discovery (if there are many participants and turnover is high).
- An active secondary bond market facilities primary market issues, i.e. improves the capacity of issuers to place newly created bonds. Investors having the assurance that they will be able to dispose of bonds if they so desire brings this about.
- An active secondary bond market reduces the cost of funding for the issuer because investors place a premium on marketability.
- An active secondary market provides the benchmark for the determination of rates to be offered on new issues.
- An active secondary bond market registers changing market conditions rapidly, indicating the receptiveness of the market for new primary bond issues.
- An active secondary bond market enables investors to rapidly adjust their portfolios in terms of size, risk, return, liquidity, maturity, duration, etc.
- An active market enables the central bank to buy and sell securities in order to influence liquidity in the financial markets (open-market operations). Although the central bank usually operates in the money market, at times it does so in the market for short-term bonds.

Before proceeding with the details of the participants of the bond market, it will be useful to present an attempt at illustrating the broad structure of the secondary bond market and its participants.

4.6.4 Basic structure of an exchange

In a nutshell, an exchange offers a secure and efficient dealing environment for the products for which it was created: bonds (and other debt securities) issued by government, parastatal enterprises, the corporate sector, SPVs and the foreign sector. Usually the main products of bond exchanges are the bonds of central government.

Clients of the exchange are any person or institution that needs to buy or to sell bonds. They are obliged to do so with the broker-dealers who are members of the exchange under a relevant statute. The broker-dealers are authorised by the exchange and become so if they comply with the provisions of the contained in its Rulebook, which includes a minimum level of education pertaining to the market, capital adequacy, and so on. The exchange will have measures in place to ensure surveillance of its members.

When a deal is struck between the client and the member, the deal is entered into a bond capture system (BCS). The BCS performs validation of trades and matches them (i.e. clearing) and routes them to a settlement system which is usually a Central Securities Depository (CSD). The system also reports on the status of trades to the members.

The bonds traded on the exchange are contained in a "list" of securities that the exchange maintains, hence the term "listed securities", and the issuers are obliged to comply with the listing requirements of the exchange. These requirements include the issue of a placing document (prospectus), strict financial disclosure requirements, etc.

In addition to its all-important trading function, the exchange usually provides a range of data services:[27]

- From the trade capture system: daily publishing of trading statistics and mark-to-market details.
- From its price discovery system: live trading bids, offers, yields and volumes, giving a real-time picture of the bond market.
- General: total return indices, historical data and customised reports.

4.6.5 Participants in the secondary market

4.6.5.1 Introduction

The participants in the secondary bond market are:

- Members of the exchange.
- Market makers: banks.
- Market makers: issuers.
- Investors.
- Speculators.

4.6.5.2 Members of the exchange

In exchange-driven markets the members of the exchange are the broker-dealers that are authorised "users" of the exchange in terms of the statute that governs the exchange and the Rules of the exchange established in terms of the statute.

It is important to distinguish between the interdealer brokers (that exist in many countries) and the "ordinary" members. The "ordinary" members deal with all market participants, whereas the interdealer brokers perform a self-imposed specialised function: they trade exclusively between other members of the exchange, particularly the market makers (and their subset the primary dealers)[28].

These brokers advertise prices and volumes of actual deals on an electronic price dissemination medium. Internationally there are two types of interdealer broker: "matched principal" and "name-give-up". The *name-give-up* brokers marry the requirements of two principals in a deal who are disclosed to one another before the deal is confirmed, to ensure that the two parties are able to deal with one another. Settlement takes place between the two principals and not between each principal and the interdealer broker. The brokers charge a small fixed (and disclosed) brokerage.

The *matched principal* interdealer brokers are distinguished by higher levels of capital, giving comfort to the principals in terms of settlement with them. The majority of interdealer brokers are of the matched principal variety.

4.6.5.3 Market makers: banks

In the previous section we distinguished between "ordinary" members and interdealer brokers, and we dealt with the latter. The "ordinary" members may be split between banking members and non-bank members (also known as "securities trading houses" – STHs). The STHs are the smaller-capitalised member firms that provide a securities broking service to the smaller investors.

The banking members of most exchanges may be split between the market making banks and those that are not. The banks that do not participate in market making activities are the smaller ones and they operate very much like the STHs.

The term *market maker* refers to any body / organisation that quotes buying (bid) and selling (offer) rates (*prices* in some countries) on bonds simultaneously and at all times when requested to do so by buyers and sellers. It will be evident that market risk is a central element of market making, ensuring that well-capitalised entities take on this role: the larger banks.

However, the term does not only apply to the banks; it applies also to certain issuers who are members of the exchange for this reason (see next section).

A subset of the bank market makers is the *primary dealers*. They are a group of the larger capitalised domestic and international banks that are appointed by the central bank, on behalf of government, to assist in the marketing of central government bonds. As part of their sole access to the newly issued bonds of government, they are obliged to quote firm buying and selling rates on certain bonds (the more marketable ones) at all times and they must be prepared to deal in a stipulated minimum amount.

It is notable that certain bond issuers (corporate and parastatal enterprises) also appoint bank market makers to market their paper (primary market) and to make a market in the secondary market for this paper.

4.6.5.4 Market makers: issuers

Another important participant in the secondary market is the issuer in some cases. Certain issuers have set up dealing desks to make markets in their own issues of bonds. Their motivation for doing so is to enhance the marketability / liquidity of their bonds. Enhanced marketability means that new issues are issued at lower rates than otherwise would have been the case.

4.6.5.5 Investors

The other participants in the secondary market are of course the investors, domestic and foreign. The domestic investors are comprised of the household and corporate investors (the cash surplus ones) and the “institutions”. The main actors in the latter group are the following:

- Retirement funds
- Insurance companies
- Unit trusts, particularly the bond funds
  Banks.

The motivation of the investors in the secondary market is to change the size and/or nature of their portfolios in response to changing market conditions.

4.6.5.6 Speculators

The term *speculator* refers to any entity that attempts to make opportunistic profits from changes in bond prices in the short term. It is particularly the banks, certain STHs, certain entities of the household and corporate sectors, and certain foreign entities that make a business of trying to profit from short-term movements in the bond market.

4.6.6 Order-driven and quote-driven secondary markets

The phrases *order-driven* and *quote-driven* secondary markets are pertinent to all markets: they are one or the other or a hybrid. Many a bond market can be described as a dual market in that is it both order-driven and quote-driven.

The interdealer brokers trade solely on an order-driven basis, i.e. they react only to orders that they receive from the other members of the exchange. The other non-market maker members of the exchange generally also trade on an order-driven basis to the extent that they deal with clients. This means that in their dealings with investors they react to orders and try and fill these orders.

A seen earlier, the market makers, on the other hand, trade solely on a quote-driven basis.

4.6.7 Commissions

In the case of market makers, commissions are not payable, because they take positions in bonds at risk to their capital base. At the central bank auctions, and in their function as the market makers, they bid at prices that they believe are a reasonable reflection of market conditions at that time. However, this is not always the case and rates can "turn against them" at times. This means that at time they hold certain bonds at a loss. For this reason, commissions are not applicable to them.

In the case of other members of the exchange, and in broking deals, commissions are disclosed to clients. These brokers are also obliged to inform clients when a deal involves bonds that are held by them in portfolio and that a "turn" (i.e. difference in price / yield) is being taken rather than a commission.

4.6.8 Clearing and settlement

Bond deals through exchanges are usually conducted on a netted and T+3 (or longer) rolling settlement system. The institutions involved in clearing and settlement are:

- A clearing house.
- A central securities depository.
- A settlement agent system.

4.6.9 Trading

There are four types of trading "systems":

- Floor trading (open outcry).
- Telephone-screen trading.
- Screen-telephone trading.
- Automated trading [on an automated trading system (ATS)].

Floor trading. The floor trading method (also called open-outcry trading) involves the matching of orders from clients in a physical place. Members shout out orders and look for opposite orders which are matched if the prices are the same. Bond markets have been known to make use of this system, but it is rare.

There are variations of open outcry; one example is the call-over system adopted by the Malawi Stock Exchange which works well in a small market.

Telephone-screen trading. Generally, some *market makers* place indication rates on information vendor (IV) screens (e.g.. Reuters Monitor Service), and deals are negotiated and consummated on the telephone. Some market makers do not advertise prices on screen and only quote prices to clients on the telephone. As noted, this is a quote-driven market, i.e. the market makers quote buying and selling rates.

Screen-telephone trading. The *interdealer brokers* make use of this method; they quote firm rates on IV screens, and the telephone is used by members of the exchange to "take" (buy) or "give" (sell), i.e. to confirm the transaction with the interdealer broker. They also advertise prices via their squawk boxes. As indicated, the interdealer brokers only deal with other members and not with the investors.

Automated trading system (ATS). The ATS system of trading applies to order markets, where orders are matched on a price-time priority basis. As noted, bond markets are generally quote-driven markets.

4.7 Summary

Like all financial markets, bond markets are either OTC or exchange-driven markets (EDMs). Many of the disadvantages of OTC markets are addressed by EDMs. There are a number of methods of issue in the primary bond market with the auction method being the preferred one in the government bond market and others' too.

The secondary market plays a significant role in the economy, not the least of which are price discovery, portfolio opportunities for holders of bonds and assisting the primary market in terms or rates to be offered on new issues. Most bond markets are quote-driven markets.

4.8 Bibliography

Blake, D, 2000. Financial market analysis. New York: John Wiley & Sons Limited.

Fabozzi, FJ, 2000. **Fixed income analysis for the Chartered Financial Analyst program.** New Hope, Pennsylvania: Frank J Fabozzi Associates.

Faure, AP, 2007. **The bond market**. Cape Town: Quoin Institute (Pty) Limited.

Lawless, T, 1995. Self-regulation and formalisation of the South African bond market: a brief record of its history. **Treasury Management International**. March.

Mayo, HB, 2003. **Investments: an introduction**. Mason, Ohio: Thomson South Western.

McInnes, TH, 2000. **Capital markets: a global perspective**. Oxford: Blackwell Publishers.

Mishkin, FS and Eakins, SG, 2000. **Financial markets and institutions**. Reading, Massachusetts: Addison Wesley Longman.

Pilbeam, K, 1998**. Finance and financial markets**. London: Macmillan Press.

Raffaelli, M, 2005. **BESA floating rate note (FRN) pricing specification**. Johannesburg: Bond Exchange of South Africa

Reilly, FK and Brown, KC, 2003. **Investment analysis and portfolio management.** Mason, Ohio: Thomson South Western.

Reilly, FK and Norton, EA, 2003. **Investments.** Mason, Ohio: Thomson South Western.

Rose, PS, 2000. **Money and capital markets** (international edition). Boston: McGraw-Hill Higher Education.

Santomero, AM and Babbel, DF, 2001. **Financial markets, instruments and institutions** (second edition). Boston: McGraw-Hill/Irwin.

Saunders, A and Cornett, MM, 2001. **Financial markets and institutions** (international edition). Boston: McGraw-Hill Higher Education.

Steiner, R, 1998. **Mastering financial calculations**. London: Pitman Publishing.