Market for Corporate Securities and Building the CALM Portfolio Model

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Abstract

This article attempts to explore the role of the market for corporate securities and build an appropriate portfolio. The main goal of this article is to explore the modern market for corporate securities in Russia. The methods of cognition, retrospective and documentary analysis, as well as synthesis, generalization and systematization were used in this work. The essence and structure of the market for corporate securities were examined in the article, its role was identified, and market instruments and their features were explored. Models of building a securities’ portfolio were analyzed. Being the main sector of capital flows, the market for corporate securities establishes a mechanism for distributing and redistributing capital to the most relevant sectors of the economy, working with corporate securities. The investment portfolio is formed using various models. These models are diverse, but the authors decided to select the CALM model of dynamic portfolio management as the most accurate one.

Keywords: market for securities, investment portfolio, risk, models of portfolio building

1. Introduction

The market for corporate securities plays a key role for the market economy. It establishes economic links between various market actors, distributes investments between branches of production, and serves as the main indicator of the economic situation in the country.

Being an integral part of the state and a key mechanism for capital redistribution between various actors and sectors, stock markets have a great impact on the economy. Interacting with the system of financial institutions, they create a field that generates large-scale sources of economic growth, which focuses and distributes investment resources. The main mission of the market for corporate securities is to secure the flow, distribution and redistribution of capital, but it also has the function of accumulating free funds and redirecting them in the form of investments to increase industrial output.

Today it can be confidently stated that every modern person faces the concepts of the stock market. Any literate person needs basic knowledge of this system structure, especially since the stock market is a complex society and not just an occupation for specialists, but also a tool that people use to manage their money. Therefore, in order to understand the operation of the stock market, one needs to know what is being traded, who and where trades, and who is monitoring compliance with the rules of trade.

2. Characteristics of the Market for Corporate Securities

2.1 Essence, Functions and Structure of the Market for Corporate Securities

A corporate security is a special kind of legal document in which enterprises, banks and funds are issuers [1]. This is a security that records the rights of its holder or the obligations of its issuer. Corporate securities can be a source of income. The market for corporate securities is a set of economic relations associated with the issue and circulation of securities among market participants [2]. Such a market is a sector of the financial market where securities are issued and purchased. The market for corporate securities contains both credit relations and relations manifested through the appearance of special documents, namely securities, the relations of co-ownership, which have their own value and ability to be sold or bought.

Like most markets, the market for corporate securities has its own set of functions, which are divided into two types: general market and specific ones. General market functions include [3]:

- commercial – the purpose of this function is to earn the maximum profit, dividend, interest (net income);
- value – a function that allows to set a pricing policy on the instruments of the market for corporate securities and secure the rates of return;
- information – a function that informs all participants of the market for corporate securities about the market situation; and regulatory (keeps order on the market by the state, establishes rules of trade for market participants).
Being a part of the financial market, the market for corporate securities differs by a range of its tools and rules, and has two specific functions [4]: redistribution, which secures the capital transfer from passive fund holders to active fund holders. This function is realized through issuing and circulating corporate securities and redistributes funds between the state and other legal entities, between the population and an enterprise, between countries and territories, etc. redistribution of monetary risks, which function protects holders possessing any market instrument or any assets (commodity, currency, financial) from price changes on the market for corporate securities.

The market for securities can be regarded as a complex system, which operates with a wide range of characteristics. The market for corporate securities is an integral part of the securities’ market and has a similar structure, which in turn can be represented by various sections.

Depending on the circulation stage, the market for corporate securities is divided into primary and secondary. The primary market is where corporate securities first emerge for further circulation [5]. As such, issuable corporate security is sold for the first time on the primary market. By issuing securities and selling them on the primary market, an entity replenishes its budget with financial resources, while the securities are transferred to the original holders who can dispose of a security at will after its purchase, depending on its type: it can resell it to other entities that will be free to sell it to new investors. The secondary market is where the previously issued corporate securities are traded. This is a set of operations where the rights to use these securities are endlessly transferred from one entity to another [6, 7].

Depending on the level of regulation, the markets for corporate securities are classified as organized and unorganized ones. The set of exclusively legal circulation of corporate securities is called an organized market. The unorganized market for corporate securities is aimed at contractual conclusion of deals on one’s own risk, thus, this type of market has almost exhausted its existence recently [3].

Depending on the way the trade is arranged, there are stock and over-the-counter (OTC) or street markets for corporate securities. The stock market is the most developed one, as it is defined by large turnover that allows creating an efficient infrastructure that can reduce specific overhead costs, assume some risks, maintain liquidity status, and ensure reliability. The stock market will always be organized, because it is built on trading securities on the stock exchange. Such trade is conducted between stock exchange intermediaries and regulated by strictly established rules of the exchange. The OTC market operates securities’ trading without any rules. This type of deal is not recorded anywhere, and therefore there is a constant resale at the stages of securities’ promotion, which allows investors to freely buy and sell these investments.

The whole range of securities, except for stocks, is traded over the counters, thus, the stock markets will always be organized, while OTC markets can be regulated on the basis of both organized and unorganized (street, spontaneous) markets [8, 9].

Depending on the type of trade, the market for corporate securities can be in two forms: public and computerized. The public market for corporate securities is a traditional market where buyers and sellers meet in a strictly designated place for public or, vice versa, private trades [10, 11].

Corporate securities are sold via trading systems, where deals are closed electronically. This type of market is described by:

- no face-to-face meetings of sellers and buyers; all operations are carried out in special computerized places located in organizations that produce goods for sale;
- no public process of pricing and depreciation of securities [12]; and
- perpetuity of trading corporate securities;

Depending on the conclusion terms, the market for corporate securities is divided into cash and derivatives.

The cash market is a market where deals for a period of up to 1-3 days are instantly concluded. The derivatives market for corporate securities is a market where the period of concluding a deal lasts for several weeks or months. The cash market is the most widespread; futures contracts for corporate securities are produced on the market for production tools in most cases.

2.2 Tools and Players on the Market for Corporate Securities

Like any other market, the market for corporate securities has its own tools, but their exploration requires the understanding of the corporate securities. The term "corporate securities" has been used quite often in the economy recently, but it has no legal definition. According to the Civil Code of the Russian Federation [13], a conclusion can be made that corporate securities are securities that secure personal nonproperty rights of their holder, associated with the relationship of a loan in a specific legal entity. The difference between corporate and other securities is related to a legislative procedure for the securities’ issuance, which is why such securities are generally considered to be issuable. As such, an issuable corporate security is a special kind of a security issued by a commercial organization and providing its holder with a full range of rights and obligations under the law of the Russian Federation.

There are two types of corporate securities: a stock and a bond. Stocks are a type of equity security that gives its holder a right to receive part of the net income from the operation of a joint-stock company as dividends, as well as part of the company’s property in the event of its liquidation [14]. Such securities are issued by the joint-stock company itself, which forms its own capital by doing so. The main feature of stocks is granting property and nonproperty rights that are closely interconnected, as well as a set of rights such as a corporate right and a right of membership in a joint-stock company. A corporate category of securities evolved due to the existence of corporate rights similar to property rights.

Acting as corporate securities, stocks help shareholders influence the entrepreneurial activities of a joint-stock company. Concentration of stocks in the hands of one holder leads to an increase in the legal status of such a holder, which indicates an expanded range of rights granted by stocks. Therefore, a stock also provides rights other than property rights: a right to participate in managing the joint-stock company, a right to receive information about the operation of the joint-stock company and other rights that cannot be attributed to property rights.

A bond is the second type of corporate securities. By law, this type of a corporate security is issuable. A corporate bond is a special type of securities that differs from other types of bonds and assumes an individual order of issuance, secures the rights of its holder for purchasing from the issuer of the bond itself, its nominal value. This security may also secure its holder other property rights, if it does not contradict the legislation of the Russian Federation [15]. A distinctive feature of corporate bonds is that they do not have rights adjacent to corporate rights, like stocks, although convertible corporate bonds are an exception.

The market for corporate securities cannot operate without qualified specialists who ensure the normal functioning, maintenance and solution of problems arising in the market. The Federal Law "On the securities’ market" states that professional players on the securities’ market are legal entities, which include credit organizations, as well as citizens (individuals) registered as entrepreneurs. All players on the stock market are divided into two groups. The first group includes qualified players on the market for corporate securities, which provide consulting services in the future, while remaining active participants in the market. These participants form the backbone of the stock market. The second group includes people who temporarily decided to place their commodities on the securities’ market [15].

There is a huge number of classifications of players on the market for corporate securities, because operation of this kind of market is
impossible without qualified and experienced personnel. Besides, stock markets require the professional use of computer equipment and software that allow to set a price and help post information about the certain type of product. Along with the above categories of players, the securities’ market is also serviced by bank employees who regularly undergo assessment to raise the level of their qualifications. In terms of Russian legislation, the list of professional players is the following [16]:
- brokers and dealers;
- securities’ managers;
- trade organizers;
- clearing centers;
- registrars; and
- depositaries.

A broker is an entity that occupies the main place in the process of deals on the stock exchange. Brokerage can perform operations on behalf of the client in two ways: under the agency agreement and under the commission agreement. Under the agency agreement, the broker acts as a trusted person. It has the right to independently conclude a deal on behalf of the client and at their expense. The main goal of the broker is to search for securities on the market the price of which would suit the client, or to sell corporate securities held by the client at a set price [17].

Players on the securities’ market can be classified into 5 main groups:
- Investors (people who invested part of their finances during the acquisition of securities);
- Issuers (a legal entity that provides its financial instruments on the market);
- Intermediaries (those who help carry out the sale deal);
- Infrastructure (entities taking on certain types of risks of market players); and
- Regulatory authorities [18].

Along with the above categories of players, state and bank employees, as well as employees of investment funds serve on the securities’ market.

All countries require licenses. Employees undergo assessment, which helps them be constantly aware of all new events and support their qualification. Although different countries may have their own rules, they always meet uniform standards. The activities of market players are governed by the players themselves, united in groups, or a specialized state body.

2.3 Role of the Market for Corporate Securities

On the one hand, the process of production, distribution and consumption of products and services in the economy is accompanied by the appearance of free cash in some enterprises and some part of the population. On the other hand, legal entities and the population face its shortage, and therefore they need additional capital. Such situations result in the emergence of a financial market, where money does not depend on the flow of products and services.

The market for corporate securities is a part of the financial market, as it allows to accumulate, concentrate and centralize capitals – in other words, to redistribute them in accordance with market requirements, through the use of corporate securities. At the same time, the market for corporate securities belongs to the field of cash multiplication.

The main tasks on the market for corporate securities include the formation of a mechanism for the free sale and resale of securities, as well as the development of sources of capital for the investment policy implementation. These tasks are realized through the creation of an efficient infrastructure for the market for corporate securities, where a corporate security can replace any form of value existence in the field of circulation, i.e. it can replace products, money and capital [19, 20].

The market for corporate securities is developed well and has a huge range of tools, thus, this type of market has no clearly identified lead role. These roles are often called the meanings of the market for corporate securities, since both concepts are interrelated and have a common meaning. These meanings include [21]:
- Attracting freely circulating funds to improve the company’s rating;
- Moving capital from one market sector to another to promote the favorable development of the economy and the market; and
- Regular analysis of the market for corporate securities, performed due to the above indices;
- Regulation and impact on inflation rates.

3. Models of Building a CALM Portfolio of Securities

The rating of building the investment portfolio is analyzed using a research type called modeling. This research contributes to the acquisition of short-term data related to the investment characteristics of the future portfolio, depending on the emerging market conditions.

The investment portfolio is built using certain models. There are many models of building an investment portfolio, such as the Markowitz, Tobin and Sharp models, as well as the multi-step CALM model of dynamic portfolio management. These models are diverse, but the authors opted for the CALM model of dynamic portfolio management, as it is considered more accurate. The CALM model was developed in the 1970s to account for the effects of uncertainties on both assets (both in the portfolio and on the market) and liabilities (as payments depending on the scenario, or the cost of loans). Since any financial transaction is associated with risk, it must be stated that the profitability of this transaction cannot be found with total probability. Since this model is an indicator of building a portfolio of securities, the portfolio profitability depends on factors such as purchase prices, interim payments (for example, coupon payments on bonds, dividends on stocks) and sale prices. In this case, the purchase price is a factor influenced by some indicator, interim payments and sale prices are probabilistic. Meanwhile, each investor has their own views on the forecasts for the types of these transactions [22, 23, 24].

The regular movement of the market towards a uniform distribution of the profitability risk assessment is not a 100% indicator of the risk reality, since the discrepancies in the analysis may be related to poorly structured information of investors, which means that the flow of new information is immediately reflected in the asset value. Due to this, a model was developed that could explain the discrepancy between the expected profitability and the calculated risk. This model was called a capital asset pricing model (CAPM), and it was created by W. Sharp and J. Lintern in the 60s. Despite such a name, the model does not define the specific value of an asset, but only determines the discount rate necessary to find the value of a financial instrument.

The model limits further analysis: the market must be efficient, assets must be liquid and divisible, taxes, transaction costs and bankruptcy must be excluded. All investors also must carry out their actions in a lawful order, their expectations must be equivalent, and their goal must be to maximize the profit from the transaction.

In spite of the fact that dispersion can serve as a measure of risk, its use is not always convenient in practice, since the dimensionality of the dispersion is equal to the square of the unit of measurement of the random variable. Therefore, the standard deviation (mean square) is used as a measure of risk, calculated as the square root of the variance:

$$\delta(E) = \sqrt{\text{VAR}(E)}$$  \hspace{1cm} (1)

The less the standard deviation is, the narrower the range of probability distribution is and the lower the risk associated with this transaction is.
The CAPM model is represented (see Fig.1) by the capital market line (CML), where M is the market portfolio, \( r_f \) is the risk-free asset; \( \delta \) is the risk of the market portfolio; and \( E(\tau_m) \) is the expected profitability of the market portfolio. According to the chart, it is clear that all portfolios concentrate on line \( r_f - L \) which is an integral part of portfolio M. This means that the capital market line is tangential to the efficient border. The remaining portfolios that do not enter any field are located below the line \( r_f - L \).

The CML direction is left to right, which means that when an investor is presented information about high profitability, there is also a high probability of high risk, thus, the investor should be ready for failure. The CML slope is regarded as a reward (in units of expected profitability per unit of risk) that the investor takes over.

As such, when the investor acquires risk-free assets, their profitability is at the level \( r_f \); otherwise they agree to a reward for risk, and the time of exposure to this risk is expressed in an extra rate. As such, a reward of the entity that invests in the market portfolio consists of rate \( r_f \), which is a reward for time, and a reward for risk \( E(\tau_m) - r_f \). In other words, the players on the financial market determine the price of time and the price of risk among themselves.

This line as an equation looks like following:

\[
y = a + bx
\]

where: \( a \) is the ordinate value at the point of its intersection with CML, it corresponds to the risk-free rate \( r_f \), \( b \) is the CML slope angle.

The slope angle is defined as a ratio of the change in the value of the function to the change in the argument. In our case (see Fig.1), the slope angle is:

\[
B = \frac{E(\tau_m) - r_f}{\sigma_m - 0} = \frac{E(\tau_m) - r_f}{\sigma_m}
\]

(3)

Since the expected profitability \( y \) is the function of risk \( x \), the CML equation in the adopted terms of profitability and risk will be as following:

\[
E(\tau_i) = r_f + \frac{E(\tau_m) - r_f}{\sigma_m} \delta
\]

(4)

where \( \delta \) is the risk of the i-the portfolio, for which the level of expected profitability is determined. \( E(\tau_m) \) is the expected profitability of the i-th portfolio.

This equation can be written as follows:

\[
E = (r_f) + \frac{\delta}{\sigma_m} E(r_m) - r_f
\]

(5)

As such, the expected portfolio profitability is equal to the risk-free rate plus the product of the ratio of portfolio risk to the risk of the market portfolio and the difference between the expected profitability of the market portfolio and the risk-free rate.

Example:

\[
r_f = 10\%, E(r_m) = 25\%, \sigma_1 = 30\%, \sigma_m = 15\%.
\]

(6)

Determine the expected profitability of the portfolio. It is equal to:

\[
E(\tau_i) = 10\% + \frac{20\%}{15\%} (25\% - 10\%) = 40\%
\]

(7)

CML indicates the correlation of the risk of expected profitability only for widely diversified portfolios, i.e., portfolios that include a market portfolio, but does not answer the question of what expected profitability less diversified portfolios or individual assets should have.

4. Conclusion

Being the main sector of capital flows, the market for corporate securities creates a mechanism for distribution and redistribution of capital to the most relevant sectors of the economy, processing corporate securities. Securing the economic growth, the research of the Russian stock market is required to obtain information about the economic situation, the greatness and the future of our country, as well as its place in the world market.

If the securities’ market is reviewed in comparison with other types of markets, it is also built on supply and demand. However, the specific products sold on the corporate securities’ market make this market type different from the monetary, commodity, and other types of markets. Such products are various types of corporate securities. The price of securities depends on the amount of real capital. The portfolio of the market depends on the expected result of profitability and its probability of failure.

References