

Electronic and digital technologies in the accounting system of property rights to securities

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Abstract — The subject of this study is economic relations arising in the process of the interaction between issuers, investors and the accounting system of property rights to securities involving registrars and depositories, taking into account the necessity of electronic and digital technologies using. The possibility of providing remote access service to registered persons is a fundamental factor determining competitiveness of institutions of the accounting system of property rights to securities.

Now, there is a steady tendency of the institutions reduction of the accounting system of property rights to securities due to the reduction of joint-stock companies, high level of competition on this market segment, high cost connected with the implementation of electronic and digital technologies in the data protection system relating to the property rights securities and tools of the financial market.

Protection against negative effects of registrar activities risks such as operational, legal and regulatory ones is particularly important for institutions of the accounting system of property rights to securities. The development of a personal account for an issuer, a stockholder and registered persons, and also the implementation of the distributed ledger technology (blockchain) will contribute to enhancing the effectiveness of registrars on the Russian market of corporate monitoring.

Keywords — *accounting system of property rights to securities, registrars, electronic and digital technologies.*

I. INTRODUCTION

The accounting system of property rights to securities is a special institution which the main function is confirmation of property rights to securities and enforcement of rights arising from securities. The set of formal and informal rules concerning realization of the investors' rights to securities and rights arising from securities providing the exchange of financial resources and securities in the economy is formed and developed in this institution.

The principal actors of the exchange (excluding trading intermediaries) are issuers implementing a need for financial resources through the issuance and placement of securities; investors possessing financial resources and exchanging them for securities; professional actors of the stock market providing security transfer and realization of rights arising from securities.

The accounting system of property rights to securities includes two types of organizations which provide its functions: depositories and registrars on the securities market.

In accordance with the law, the provision of information from the shareholder registry is one of the components of licensed professional activity for maintaining the registry of securities holders on the securities market [1, p. 8]. However, in practice, a registrar which is responsible for the compliance of its activities with the current legislation and licensing requirements established by the regulator on the securities market, is obligated to be very careful during fulfilling this responsibility. The provisions of the Federal Law "On the Securities Market" also imposes an obligation on the registrar to ensure the confidentiality of information of a person for whom the account is opened and of this account data, including operations.

The purpose of this article is to analyze registrars' activities in the accounting system of property rights to securities on the Russian market of corporate monitoring, to identify tendencies of functioning in the condition of economy digitalization and increased use of the electronic workflow possibilities.

This requires the solution of a number of tasks:

- to study the theoretical and methodological basis of registrars' activities on the Russian market of corporate monitoring;
- to research the essence of the accounting system of property rights to securities in accordance with the regulatory, informational and institutional approaches;
- to analyze registrars' activities as a component of the accounting system of property rights to securities;
- to provide the quantity and quality of registrars;
- to consider the digital technologies and mechanisms of the electronic workflow used by registrars as a factor of enhancing the effectiveness of their activities.

The object of this research is professional actors of the financial market engaged in the activities for maintaining the registry of registered securities holders on the Russian securities market of corporate control.

The subject of this research is the interaction between an issuer, an investor and a registrar as the main component of the accounting system of property rights to securities.

II. METHODOLOGY OF RESEARCH

The theoretical and methodological basis of the study is works of Russian and foreign scholars devoted to the theoretical and practical aspects of the accounting system of property rights to securities functioning, taking into account applied in practice forms of issuance and circulation of certificated and uncertificated equity securities on the Russian financial market. The implementation of the research objectives is based on such scientific research methods as statistical and comparative analysis, systematization and synthesis of scientific knowledge and method of expert estimations. The information basis of the research includes the Russian Federation legislation, legal and statistical materials of the Bank of Russia, credit-rating company data.

The aim, objectives and functions of the securities market predetermine its actors. Scholars do not have a unified view, but they usually distinguish such actors of the securities market as issuers, investors and professional members. In addition, R. Iseev considers a state as an actor of the securities market. A.N. Asaul determines the following groups of actors of this market: issuers, investors, professional members and investment institutions [2, p.117-119]. But this list of actors reflects the condition of the Russian securities market development at different stages: investment institutions had occurred till 1996, and since 1996 they were replaced by professional actors of the securities market.

In A.V. Novikov's opinion, actors of the securities market are divided into 4 groups: firstly, key actors (state, municipality, large domestic and international companies); secondly, institutional investors (banks, insurance enterprises, pension funds); thirdly, individual investors (individuals, including owners of small business venture); fourthly, professionals (brokers, dealers and etc.) [8, p.57].

The following classification of actors which includes issuers, investors, direct financial intermediaries (brokers, dealers, and managers), infrastructural financial intermediaries (collectors, depositaries, clearing organizations, trade promoters, including exchange), public authorities and self-regulating organizations seems closest to reality of the current financial market actors [9, p.86]. However, there are the discussion topics on what the infrastructure of the securities market is and what actors are connected to it. For example, K.V. Krinichansky indicates the functional infrastructure (stock exchanges, over-the-counter systems, alternative trading systems), technical infrastructure (broker and dealer companies, depositaries and registrars, clearing and accounting organizations), investment infrastructure (investment funds, pension funds and insurance companies) and informational infrastructure (informational and analytical agencies, analytical publications and financial press, issuers and other actors of the securities market who are responsible for disclosure). He also argues that the infrastructure institutions form the structure of the securities market and establish an order [4, p.26-27]. Ya.M. Mirkin highlights the technical infrastructure (clearing and accounting, depositary and registrar connections) and the regulative one (public authorities and self-regulating organizations) as the components of the securities market system [6, p.441]. The stated viewpoints are worth

considering and confirm the multidimensional nature of the securities market. This ambiguity demonstrates that each author studies the securities market and interactions from their own perspective.

The theory of the financial markets is the synthesis of several relatively independent theories and trends. Their importance for the development of theory of the securities market services is that they allow to identify and clarify issuers and investors' needs, and, therefore, to characterize a service on the securities market as one of the financial services. The term 'financial services' generally refers to activity related to attracting money of individuals and entities and benefiting from it [7, p.79]. Moreover, they are separated into financial services connected with investing (transformation of money to monetary capital) and services of the financial market services. The infrastructure services of the securities market include ensuring the rights to securities (depositaries and registrar services); services related to promoting agreements for securities and financial tools (stock exchange and trading promoters services); services related to transaction calculating (clearing companies and central counterparty services) and advisory services [5, p.79]. The object of the securities market services is the security.

There is a necessity of the verification of property rights to securities in the provision and consumption of investment services on the securities market. Two approaches are identified in international practice. According to the first approach, there are services of the reaffirmation of property rights to securities and services provided realization of rights enshrined in securities owing to the securities dualism. On the one hand, the security is an asset, and, therefore, it is necessary and possible to identify its owner at any given time. On the other hand, the security is the defined set of issuer's responsibilities which it has to provide a security owner in exchange for received money [10].

The accounting system of property rights to securities was organized in different ways, depending on division of labor on the securities market, features of the country legislation and traditions, accepted rules of release, economic and legal vocabulary, number of securities, and development of technical means.

The accounting system of the securities market should be organized, taking into account certain principles. These principles of the accounting system of the securities market are:

- the property right to securities is certified by just one professional actor of this system at a given time;
- investors' rights enshrined in securities are confirmed by just one accredited professional actor of the system before an issuer;
- only one document (certificate, statement) confirms the property right to securities at a given time [3, p.178].

These principles can be specified and complemented in national legislation.

III. RESULTS OF RESEARCH

In Russian practice, there are two mechanisms of mainstreaming of rights to securities. In the first case, a registrar fulfils the function of rights realization arising from issuer's obligations to securities owners. An issuer transfers the entire issuance to a registrar for registration during securities emission based on the agreement. An issuer enters into a contract with only one professional actor of the accounting system which is responsible for the integrity of issuance assigned by an issuer. Securities can be transmitted to other actors of the accounting system for the further registration during selling them to investors. A registrar provides services to an issuer and investors, raising revenue from securities and fully realizing property and non-property rights in accordance with an issuer's obligations. Registrars fulfil the functions of reaffirmation of investors' rights to securities as property. On the one hand, the existence of only registrars in this system simplifies ensuring the rights to nominal securities, and, on the other hand, it makes their circulation and realization of investors' rights difficult. This is because a professional actor which is responsible for accounting services serves investors, occupying the monopoly position on the services market of the accounting system of property rights to securities.

In the second case, there is division of labor between professional actors of the accounting system. Services for securities accounting can be provided by two groups of professional actors. Depositaries without specialization, depositaries-trustee, and custodian are included in the first group. Accounting depositaries serve investors on the basis of a contract with them instead of an issuer. They can fulfill different functions such as banking or professional activities on the securities market in many countries (dealer and broker activities, management of securities). The second group includes accounting depositaries as depositaries of trading systems which provide services on the organized market of securities, ensuring timely and risk-free transferring the property right to securities. They are the institution serving the organized securities markets, and recipients of services are, as a rule, brokers and dealers working at the organized trading systems (stock exchanges). All these accounting depositaries should be combined into the unified informational and technological space for rapid movements of securities and a possibility for a client of one of the depositaries to bid in another trading system which is served by other depositaries.

We consider a registrar as a component of the accounting system of property rights to securities, its role, rights, obligations and responsibility. A registrar is a registry holder. Maintenance of the registry is storage, fixing, collection, processing of data and information providing from the registry. The complete list of securities owners is called as the registry, and it includes general information on their personal accounts.

Many registrars which have shares of over 500 issuers are mainly represented in the central region. There is one registrar in Cherepovets, St. Petersburg, Yekaterinburg, Yakutsk, Surgut, Kazan, and the remainder in Moscow [13].

As at 8 May 2019, 34 registrars of securities are licensed and carry out their activities on the market of services on accounting of property rights to securities (Fig.1).

It can be assumed that a reduction in the number of actors of the accounting services market, taking into account the trend towards decreasing of registries served by registrars and strengthening of regulatory requirements (which are oriented to improving the quality and transparency of registrar operations), the need for investing in technologies to reduce the cost and increase the quality of provided services.

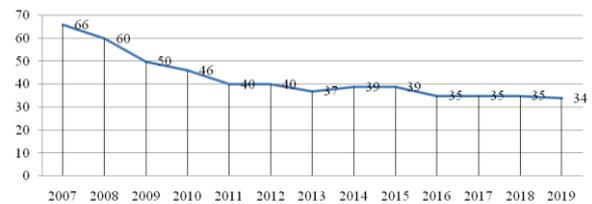


Fig 1. Trends in the number of companies provided services on maintenance of the JSC registry

The leading registrars in Russia are illustrated in Fig.2

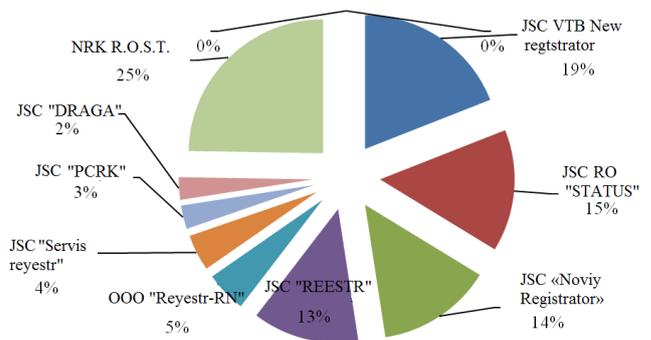


Fig 2. The proportion of top-10 registrars by the number of served registers for 2017.

To date, the market is strongly concentrated because the proportion of the largest companies (top-5) occupies over 60% of the market, including NRK R.O.S.T. (10415 registers), JSC VTB Registrar (7944 registers), JSC RO "STATUS" (6069 registers), JSC "Noviy Registrator" (5721 registers) and JSC "REESTR" (5372 registers).

The analysis of registrars' activities allowed to identify the trends of their development:

- there is the reduction of registers served by registrars while reducing the number of JSC by excluding data from the Unified State Register of Legal Entities on inoperative companies;
- the greatest burden of serving of registers and registered persons is in the Central Federal District, however, its share is increasing, owing to JSC reduction;
- increase of regional serving by registrars through the growth of transfer-agent network, and in 94% of the cases with involvement registrars as transfer agents;
- increase in concentration of accounting performance of industry and revenue of top-8 registrars while reducing the number of registrars;

- most registrars get a share in the profit from the main activities;
- prevalence of money on operating accounts and deposits in credit organizations in the structure of registrars assets;
- development of the risk management system by changing the approaches to identifying and assessment of risks of registrar activities.

IV. DISCUSSION OF RESULTS

Small joint-stock companies previously could maintain accounting records of their stockholders. The Government decided to prohibit maintaining of the registry independently after the Russian central bank became the regulator on the securities market. Maintaining of the registry of JSC stockholders relates to exclusive competence for registrars since 1 October 2014. According to the Russian central bank data, registrars maintained only half of registers of JSC in 2016. This is due to reluctance of JSC to transfer the functions of registry maintaining to registrars because they are not active, being overhauled, in liquidation or do not have necessary documents. However, most companies met the requirements of the central bank and transferred their registers to registrars of securities. There is a fine of 70000 rubles or disqualification for an official and up to 1 million rubles for the company [11].

As mentioned before, the number of securities registrars in Russia has been declining every year because of reduction of joint-stock companies. Such a reduction of registrars is caused

by termination of the activities as a result of reorganization, cancellation of a license freely or for violations. Registrars which are on the market continue to develop, increasing their branches network, modernizing electronic workflow, and involving consumers. That is why there is a problem of the rapid electronic workflow between registered persons, joint-stock companies and registrars. The modern electronic registrar workflow is remote access, digital signature, centralized storage and protection of information. Many registrars created a personal issuer account to reduce the time and minimize costs [11].

Possible services provided by a personal issuer account are shown in Table 1.

A personal issuer account allows to address a number of challenges such as substantial savings of time, increasing speed of information exchange, cancellation of the cost of postage.

Now, infrastructure of the financial market, including registrar business, is at the new stage of its development. The improvement of legislation had led to the need of new technological, software and hardware possibilities of a registrar. In fact, the entire workflow with market actors (the central depository, depositories, issuers, professional actors of the financial market, except for individuals) and also with reporting to a regulator should be implemented with the use of the electronic workflow. Many public authorities are turning to electronic interaction. That is why the condition of survivability of a registrar on the market is compliance with these requirements.

TABLE I. THE POSSIBILITIES OF A PERSONAL ISSUER ACCOUNT

The possibilities of a personal issuer account	Provided services
Possibilities for interaction with a registrar on issues related to receiving the information from the registry	formation and provision of the request for information receiving from the registry in real time; monitoring of requests; information on delivery dates of requests in accordance with the serving program; information on documents preparation upon requests; e-mail notifications about documents preparation; archive of the requested information.
Possibilities for interaction with a registrar in preparation and holding of general meeting of stockholders	transmission of messages, bulletins, materials and other information to a nominee holder as the central depository; a request for services of functioning of an accounting commission with a possibility of choice of a type, form and place of meeting; choice of date and time of meeting from the calendar; a request for additional services, including material distribution of meeting through the mail service, acting as a technical moderator; cost calculation of registrar services of meeting; formation and printing of a contract for an accounting commission services and their accounts; formation and printing of a message about meeting and bulletins for voting.
The entire financial information in the same place	receiving of accounts, completed works certificate, invoice right after billing which are signed by enhanced encrypted and certified digital signature; the condition of settlement with a registrar.
Monitoring of the information relevance on a company in the registry	preview of a profile provided to a registrar, of information on a single executive, authorized persons and contact details; filling and printing of forms for a registrar in paper form to correct information on an issuer, change of the list of authorized persons, updating of information in accordance with the legislation requirements; preview of information on non-null account of a nominee holder and/or account of the central depository.
Optimization of a package of services, depending on their needs	preview of a package of services within the current serving program; application for changing of the serving program; application for service of the electronic interaction "IssuerInformService" to monitor and obtain the legally significant information from the registry online.
The possibility for information obtaining	current information on innovation of the legislation; news of a registrar; receiving of an invitation to take part in free seminars provided by a registrar on issues related to corporate law.

A number of problems related to data protection and hacker attacks on the stock market have been encountered in the

expansion of using the electronic workflow. Some banks had long confronted the unauthorized funds transfer from the

consumers' accounts. Actors of the stock market also face such problems. That is why the risks of the unauthorized blocks of shares transfer are increasing, resulting in loss of consumers' property. It is necessary for a registrar to create the serious system of data protection and countermeasures against such cyber-attacks to increase the reliability of consumers' property.

There are new tendencies in the system of the mainstreaming of property rights to securities. Public joint-stock company "VTB" embarks on the establishment of a project related to functioning unification of the entire stock market with stockholders' registers. It is planned that this project based on the distributed ledger technology (blockchain) will provide an opportunity for registrars to hold stockholders' registers together. It is the technology allowed all the registrars to hold private bases of other registrars, and in case of loss or corruption of data, the Bank of Russia or an owner of data will be able to get an access key to restore data or check a certain stockholder. These bases will comply with the main criterion of blockchain: information in this base cannot be changed, substituted and distorted [11].

There is another development such as electronic voting which moves from the service of the future to reality. Registrars and depositaries have been able to provide this service at the legislative level, and stockholders who are registered in the registry and nominee stockholders were given the possibility to vote virtually in the personal account. The possibilities of the personal issuer account will contribute to realization of the Bank of Russia recommendations on the use of telecommunications to provide remote access of stockholders to general meeting, for example, to broadcast such general meeting of stockholders on a website or to use video conferencing [11].

V. CONCLUSIONS

The multifaceted nature of the accounting system of property rights to securities was identified as a result of considering of theoretical approaches to the term and structure of this system. According to the regulatory approach, it is the set of rules concerning fixing of investors and mainstreaming of rights related to securities. According to the informational approach, the accounting system of property rights to securities acts as the mechanism of production, storage and exchange of information products allowed to identify stockholders at any time, to determine the number of securities, to provide realization of revenue from securities or their expropriation. The accounting system of property rights to securities can be considered as an institution which created conditions for capital transformation through financial tools (securities) and optimizes transaction costs of issuers and investors from the point of view of the institutional approach.

Its actors (elements) are professional actors of the securities market such registrars and depositaries acting on the basis of license of the regulatory.

Most joint stock companies choose a registry holder once and prefer not to change it. Moreover, they use the services within the main activities of a registrar (stockholders registry management) and are interested in using of online-services of the own registry.

The possibilities of using the mechanisms of the electronic workflow and digital technologies as a factor of enhancing the effectiveness of registrar' activities are considered. The necessity and feasibility of the development of a personal issuer account for an issuer and a personal stockholder account for a stockholder are indicated. The need of blockchain implementation as a possibility to store the private bases by a certain registrar to protect the rights and legitimate interests of investors is explained.

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