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PROCESSES OF EXCHANGE MARKET DIGITALIZATION AND
DEVELOPMENT PARAMETERS OF ITS PROFESSIONAL
ACTIVITY

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Abstract

The processes of introduction and use of digital technologies, organically built into the mechanism of the securities market as a whole, determine the development directions of such trends as innovations, diversification of stock market tools, securitization, integration with international stock markets, etc. Based on this, the paper revealed the features of the modern development of professional activities on the stock market carried out in the conditions of increasing attractiveness of securities financing transactions for Russian and foreign investors concluded on the basis of digital payment services, including through individual investment accounts, the number of which has increased significantly in recent years. It was established that the result of the introduction of digital technologies in banking and non-banking organizations, such as improving the transparency of the financial market, monitoring the financial stability of professional participants, creating new business models, replenishing the exchange market with private investors, affects the positive changes in the structure and dynamics of the number of customers, assets of accounting infrastructure organizations. It was concluded that on the way towards the development objectives of the Russian stock market, in the face of a decrease in the number of professional participants in the securities market, on the one hand, and increasing interest in securities transactions for private investors on the other, it is necessary to further equip intermediation activities with digital technologies that lead to the erosion of the boundaries between stock markets, ensuring the safe and high-quality financial services by domestic and foreign clients.

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Keywords: Digital technology, stock market, professional participant, private investor, analysis, accounting infrastructure



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1. Introduction

Digitalization of the economy affects all economic processes, becomes an integral part of the ongoing changes in the financial sector in general, and in the stock market, in particular. A positive aspect of the introduction and use of digital technologies is ensuring the transparency of exchange and OTC transactions with securities, protecting the rights and interests of Russian and foreign investors, creating conditions for expanding opportunities for effective portfolio investment management, etc.

“Due to the development of digital channels, various services, mobile platforms that allow working with individual investment accounts, the stock market is replenished with a record number of new private investors willing to invest free cash in securities” (Demilkhanova, 2020, p. 96).

The focus on further introduction and use of digital technologies in the financial sector continues in the light of the tasks set out in strategic documents for the development of the financial market in Russia. These processes shall be further accelerated, first of all, to increase the attractiveness of the Russian stock market, despite the influence of external negative conditions.

2. Problem Statement

Today, professional activity in the securities market is carried out in the conditions of increased requirements for the level of technicality of provided services, which has a significant impact on the composition of professional participants and the results of their activities in the financial market as a whole. The introduction and use of digital technologies provide, on the one hand, a deepening of consolidation processes between professional participants in the financial market, and on the other hand – a massive influx of private investors into the securities market, which access to financial intermediaries through digital technologies is increasing.

In this context it is important that innovations characterized by technological developments serving the processes of concluding transactions with securities and derivative stock tools, such as improving the customer service of the stock exchange through the implementation of projects based on modern IT platforms, and improvement of technologies for clearing and custody activities on the stock market using technological solutions of the Bank of Russia, etc. would have a positive impact on the performance of intermediary activities in the stock market, which should be implemented in the interests of both domestic and foreign investors.

3. Research Questions

The use of digital technologies is becoming a reality in the field of financial transactions, their demand in the securities market is determined by the possibility (Table 01):

- “to minimize the costs of customer service and access to banking and financial services for the general public” (Demilkhanova, 2020, p. 98);
- to ensure optimal profitability and risk of securities portfolios (Gertsekovich, 2018; Tropin, 2020) based on “the formation of information flows and decision-making in conditions of uncertainty and risk” (Chernov, 2020, p. 287);

- to ensure the security of the financial market;
- to reduce the costs of financial organizations related to the implementation of operations, information on which is provided through communication channels using cryptographic protection tools (Lukasevich, 2018);
- to quickly and centrally use information from a variety of systems, including transactions with securities, derivative financial instruments through high-performance transactional cores – single data platforms, etc.

Table 1. Brief description and results of using digital technologies in the financial market, including by professional participants in the securities market

	Characteristic	Result
Blockchain	Database that can be distributed across the network	Protection of information against fraud; improving financial market transparency
RegTech	Technology that ensures the implementation of the requirements of the mega regulator of the financial market	Transparency of the activity of banking and non-banking institutions through: customer identification; automation of reporting procedures
SupTech	SupTech is a control tool of the Bank of Russia over innovative technologies (Big Data, artificial intelligence, cloud technologies, etc.)	Used by the central bank to assess and forecast financial stability of financial market participants
Cloud technologies	On-demand resource access model	Used by large organizations for resource planning, collaboration, analytics; providing customers with e-commerce products, etc. Creation of necessary conditions for joint initiatives between financial organizations, FinTech companies and organizations of other sectors of the economy; design of new business models
Remote identification and authentication system (Unified Identification and Authentication System (UIAS))	Enables individuals and legal entities to operate in the financial market through remote access	
Artificial intelligence	Special programs (robo-advisors, Right, etc.)	Formation of profitability and risk-optimal securities portfolios

Note: Compiled by the author on the basis of the Review of regulation of financial markets [Electronic resource]. URL: http://www.cbr.ru/Content/Document/File/36014/ai_n.pdf; Application of cloud technologies in the financial market [Electronic resource]. URL: <http://www.cbr.ru.pdf>; Report for public consultations “Issues and directions for the development of regulatory and supervisory technologies (RegTech and SupTech) in the financial market in Russia” [Electronic resource]. URL: https://cbr.ru/analytics/fintekh/doklad_16102018

A large number of works of Russian and foreign scientists are devoted to the study of the possibilities of conducting transactions with securities using blockchain technology (Gorbunova, 2020;

Kornilova, 2019; Soloviev, 2014), which make it possible to expand the service of existing and potential client base based on the improvement of internal and intra-industry processes using smart contracts (Huasheng & Zach, 2016). Other authors study the degree of influence of digital technologies on financial market development parameters, integration processes (Nardo et al., 2021), investor investment preferences, transaction costs (Avdeev et al., 2018; Mills et al., 2017; Ye & Chen, 2016). Meanwhile, the results of the theoretical and practical understanding of the possibilities and problems of new digital payment services in the field of securities between professional participants in the securities market are not sufficiently addressed.

4. Purpose of the Study

Remote services have been firmly integrated into the practice of professional mediation. All these processes affect the performance of professional participants in the securities market: structure of assets and liabilities, client base; final results of their activities, on the basis of which their rating is built.

Given the increased requirements of the Bank of Russia for the level of technicality of services provided by professional participants in the securities market, it is considered necessary:

1) to identify the peculiarities of professional activity development on the stock market through their distribution to banking and non-banking institutions, analysis of their assets and liabilities, client base, types of securities, degree of concentration of clients in the context of professional activities;

2) to determine the main directions for further increase of the requirements of the Bank of Russia for the implementation of certain types of professional activities on the basis of modern IT platforms.

5. Research Methods

The number of professional participants in the securities market for the period from the 1st quarter of 2017 to the 2nd quarter of 2020 is declining. The decrease is noted both in the number of banking and in non-banking financial institutions. At the same time, by the end of the analyzed period the number of professional participants – banking and in non-banking financial institutions – was distributed approximately equally (212 and 249, respectively), when at the beginning of the analyzed period the number of market participants – non-banking financial institutions – significantly prevailed.

The consideration of the number of professional participants in the context of professional activities also shows negative dynamics in all types, with the exception of the number of companies with a license to maintain a register of securities owners, which for the period from Q4 2019 to Q2 2020 has not changed and amounted to 32.

Both at the beginning and at the end of the analyzed period the largest number of companies – professional participants – are the companies with a brokerage license (425 in Q1 2017 and 275 in Q2 2020). They show a decrease of 136 units.

Concerning clients on brokerage services, the main share is occupied by individuals, their number for the period from Q2 2019 to Q2 2020 increased by 108.7 %, by 19.3 % per quarter (Table 02).

Table 2. Analysis of the dynamics and structure of the number of clients on brokerage services by quarters of 2019–2020

	2019		2020		Annual change, %	Quarterly change, %
	Q1	Q2	Q1	Q2		
Clients on brokerage services, thousand persons, total	2526	2883	5027	5997	208.0	119.3
including:						
physical persons	2506	2864	5008	5978	208.7	119.4
legal entities	20	19	19	19	100.0	100.0
active clients	308	359	829	1035	288.3	125.0
Percentage of active clients	12.2	12.5	16.5	17.3	-	-

Note: Author's calculations based on the Official website of the Central Bank of Russia. <https://www.cbr.ru>.

One of the main factors of the increase in individual customers is the ability to conduct transactions with securities through individual investment accounts (ISS), the number of which, according to the Bank of Russia, is rapidly growing (Figure 01).

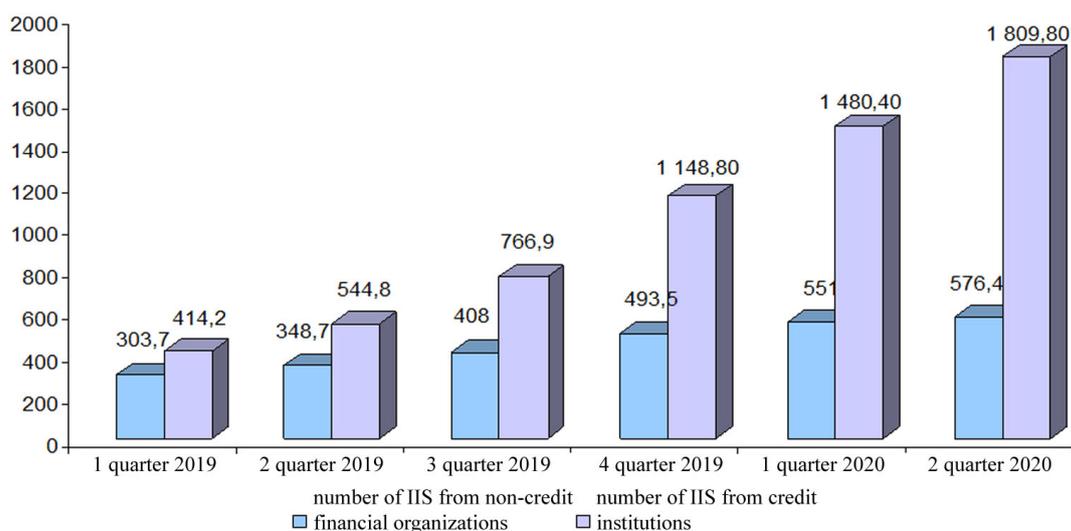


Figure 1. Dynamics of the number of individual investment accounts opened in banking and non-banking financial institutions in Russia, thousand units. Note: compiled by the author on the basis of data of the Central Bank of Russia. URL: http://www.cbr.ru/about_br/publ/

Legal entities occupy a small share (0.3 % in Q2 2020) and their number for the considered periods almost does not change. The share of active clients on brokerage services is rapidly growing: from 12.2 to 17.3 %. By the end of Q2 2020 their number increased by 206 thousand persons and amounted to 1035 thousand persons (an increase of 188.3 % over the year).

The analysis of the dynamics and structure of the number of clients on custody services shows that for all types of clients there is an increase in the number with the exception of legal entities (Table 03).

Table 3. Analysis of the dynamics and structure of the number of clients on custody services by quarters of 2019–2020

	2019		2020		Annual change, % Q2 2020 / Q2 2019	Quarterly change, % Q2 2020 / Q1 2020
	Q1	Q2	Q1	Q2		
Clients on custody services, thousand						
persons, total	3264	3683	5340	6308	171.3	118.1
including:						
physical persons	3237	3657	5314	6282	171.8	118.2
legal entities	27	27	26	26	96.3	100.0
active clients	312	340	759	957	281.4	126.1
Percentage of active clients	9.6	9.2	14.2	15.2	-	-

Note: Author’s calculations based on the Official website of the Central Bank of Russia. <https://www.cbr.ru>.

Thus, over the year the total number of customers on custody services increased by 2625 thousand persons or 71.3 %; for the quarter – by 968 thousand persons or by 18.1 %. The increase in the number of clients on custody services is fully ensured by the increase in the number of customers – physical persons. During Q2 2020, there was an increase in the number of active clients by 198 thousand people or by 26.1 %. The share of active customers during the analyzed period increased from 9.6 to 15.2 %.

Trust management in the Russian financial market is carried out mainly by non-banking financial institutions. The total number of clients on trust management is rapidly growing: over the year their number increased by 196.4 thousand persons or by 96.1 %, for the quarter – by 11.2 thousand persons or by 2.9 % (Table 04).

In the structure of clients on trust management, almost 100 % are physical persons. The share of active clients during the analyzed period decreased by 1.8 % and amounted to 22.1 %.

Table 4. Analysis of dynamics and structure of the number of clients in trust management by quarters of 2019–2020

	2019		2020		Annual change, % Q2 2020 / Q2 2019	Quarterly change, % Q2 2020 / Q1 2020
	Q1	Q2	Q1	Q2		
Clients on trust management, thousand						
persons, total	168.9	204.3	389.5	400.7	196.1	102.9
including:						
physical persons	168.4	203.7	389.0	400.1	196.4	102.9
legal entities	0.5	0.5	0.5	0.5	100.0	100.0
active clients	32.0	44.0	93.3	88.7	201.6	95.1
Percentage of active clients	18.9	21.5	23.9	22.1	-	-

Note: Author’s calculations based on the Official website of the Central Bank of Russia. <https://www.cbr.ru>.

Custody activity occupies a central place among other professional activities in the securities market. Its demand increases with increased requirements for the mandatory storage of securities in depositories and accounting for property rights.

The total amount of securities accounted for in depositories at the end of Q2 2020 amounted to 69.9 trillion rubles, including for marketable securities the amount is 64.5 trillion rubles, for non-marketable securities – 5.3 trillion rubles (Table 05).

Table 5. Analysis of securities volume dynamics in accounting with Russian depositories over 2019–2020

	2019		2020		Annual change, % Q2 2020 / Q2 2019	Quarterly change, % Q2 2020 / Q1 2020
	Q1	Q2	Q1	Q2		
Volume of securities in accounting), trl.rub., total	58.7	62.6	66.7	69.9	111.7	104.8
<i>including:</i>						
Trade (marketable) securities	51.7	57.7	61.5	64.5	111.8	104.9
Non-traded (non-marketable) securities	7.0	4.9	5.2	5.3	108.2	102.0
Securities of Russian issuers	51.1	54.9	57.2	59.1	107.7	103.3
Securities of foreign issuers	7.6	7.7	9.6	10.7	139.0	111.5

Note: Author’s calculations based on the Official website of the Central Bank of Russia. <https://www.cbr.ru>.

All types of assets expressed in securities: trade, non-traded, Russian, foreign, in monetary terms are growing: the total volume of registered securities increased by 11.7 %, the volume of trade securities – by 11.8 %, the volume of non-traded securities – by 8.2 %, Russian securities – by 7.7 % and foreign – by 39.0 %.

The structure of marketable and non-marketable securities registered in depositories has not changed over the year. Trade securities occupy 92.3 % of the total amount of securities in storage (Table 06).

As for the structure of Russian and foreign securities, it changed towards an increase in the share of foreign securities by 3.2 %, which by the end of Q2 2020 amounted to 15.5 %. Russian securities accounted for 84.5 %.

Table 6. Analysis of securities structure in accounting with Russian depositories

	2019		2020		Share change, %
	Q2	share, %	Q2	share, %	
Volume of securities in accounting), trl.rub., total <i>including:</i>	62.6	100.0	69.9	100.0	-
Trade securities	57.7	92.2	64.5	92.3	0.1
Non-traded securities	4.9	7.8	5.3	7.7	-0.1
Securities of Russian issuers	54.9	87.7	59.1	84.5	-3.2
Securities of foreign issuers	7.7	12.3	10.7	15.5	3.2

Note: Author’s calculations based on the Official website of the Central Bank of Russia. <https://www.cbr.ru>

The analysis of the degree of concentration of clients in terms of professional activities shows that the main number of clients is concentrated in 4–6 Russian companies (Table 07).

Table 7. Analysis of the degree of client concentration in terms of professional activities in the first and second quarters of 2020 (number of companies, units)

	Brokerage services		Custody services		Trust management		Registrar services	
	Q1	Q2	Q1	Q2	Q1	Q2	Q1	Q2
Concentration of 75 % of clients	4	4	5	4	3	3	6	6
Concentration of 50 % of clients	2	2	2	2	1	1	3	4

Note: Author's calculations based on the Official website of the Central Bank of Russia. <https://www.cbr.ru>.

6. Findings

Thus, the activity of professional participants in the securities market in the conditions of digitalization of the financial market, strict requirements of the Bank of Russia for the level of technicality of their services for the purchase and sale, storage, management of securities, is characterized by the following:

- 1) their number on the market is decreasing both in terms of the number of banking organizations and non-banking financial institutions;
- 2) the number of clients – physical persons who occupy the main share in the total number of clients in the context of all types of professional activities is growing;
- 3) the share of active clients – professional participants is growing;
- 4) the share of foreign securities in the total amount of securities accounted for in depositories is growing;
- 5) the main number of clients of professional market participants is concentrated in 4–6 Russian companies.

7. Conclusion

The activities of accounting organizations of the stock market – registrars and depositories – hold a special place among professional activities. Within the framework of conceptual proposals for the sector of services provided by them, let us highlight the main areas of activity of the Bank of Russia related to the transformation of these types of professional activities into a blockchain:

- Regulation of marketplaces – e-commerce platforms that enable system participants to interact with distributed databases;
- ensuring the security and access rights of digital payment services;
- creation of a biometric platform.

Given the growing activity of clients-professional participants in the securities market, the increase of the attractiveness of securities of Russian issuers for foreign investors is necessary to further introduce and use digital technologies in custody activities, which will ensure, first of all:

- implementation of all depository services using the correspondent accounts of the depot in international clearing houses (Clearstream Banking, Euroclear Bank, etc.).

- introduction of remote services for clients of large banks engaged in custody activities, including in the regions of Russia;
- security of all types of custody services.

Thus, on the way towards the development objectives of the Russian stock market, in the face of a decrease in the number of professional participants in the securities market, on the one hand, and increasing interest in securities transactions for private investors on the other, it is necessary to further equip intermediation activities with digital technologies that lead to the erosion of the boundaries between stock markets, ensuring the safe and high-quality financial services by domestic and foreign clients.

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