IMPROVING THE STOCK MARKET INFRASTRUCTURE IN CONDITIONS OF ECONOMY MODERNIZATION

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Abstract: The article describes the economic essence of the stock market infrastructure and the main directions of its formation, the scientific and theoretical basis. The foreign experience of the stock market infrastructure and stock exchanges has been studied, and opportunities for their application to the stock market of Uzbekistan have been identified. Analysis of the institutional, technical and functional bases of the stock market, the economic situation in the stock market of the Republic of Uzbekistan. Factors influencing the development of stock market infrastructure were systematized and analyzes were performed on the autoregressive distributed lag ARDL model based on the factors influencing the stock market infrastructure (UCI) and their complex econometric methods.

Keywords: financial market, securities market, stock market, stock, bond, corporate securities, infrastructure, broker, dealer, megaregulator, stock exchange, stock exchange index, joint stock companies, market capitalization, trading volume.

INTRODUCTION

In the current context of rapid socio-economic reforms in Uzbekistan, the full launch of the secondary securities market, regular announcement of the value of shares on the stock exchange, increasing the desire of the population to buy shares, conversion of shares into real securities and a significant source of income, stock market infrastructure the lack of effective regulation hinders the development of the stock market. Accordingly, "in order to further develop the stock market and stock exchange in our country, it is necessary to radically reorganize the work of the Center for Coordination and Development of the Securities Market." There is also a need to improve the stock market infrastructure that fully meets the requirements of the state's macroeconomic and active investment policy. The Action Strategy for the five priority areas of development of the Republic of Uzbekistan for 2017-2021 identifies important tasks to "improve the investment climate and strengthen the role of shareholders in the strategic management of enterprises." Fulfillment of these tasks requires accelerating the work on improving the infrastructure of the stock market.

RESULTS

Infrastructure is an important condition for the effective functioning of market relations, is part of the general system of economic relations and is based on existing economic laws in society. Despite the fact that the practice of using structures that are part of the infrastructure sector in socio-economic

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development is improving, it is relatively late to focus on it as an independent sector with a perfect system.

In the dissertation, the results of the study of empirical research in the formation of stock market infrastructure are divided into 7 stages according to the stages of development, the element of infrastructure and the period of its formation, causes and conditions. The results allowed to substantiate the dependence of the formation of the stock market infrastructure on factors such as the formation of infrastructure elements, accounting infrastructure, registration infrastructure, control infrastructure, innovation and information infrastructure.

Based on historical-genesis analysis, it was concluded that in the process of evolution, the development of stock market infrastructure in relation to the market changed twice: from the XII century to the XIX century the stock market infrastructure lagged behind the market in development (i.e., first needs, then specialization and division of labor). on the basis of which there are opportunities for the emergence of new activities, institutions and structures that serve this market). According to the author, for the effective development of the stock market, its infrastructure must surpass the market in development. A comparative analysis of American, Chinese and German stock market models has made it possible to describe the stock market infrastructure model formed in the process of modernization and diversification of the Uzbek economy as a mixed model and assess the likelihood of global models influencing its development.

During the study, different approaches of world scientists to the stock market infrastructure were studied and grouped. In scientific research, the stock market is interpreted differently by scholars, while Western scholars approach infrastructure as the financial institutions that make up the stock market, while Russian scholars approach the stock market as a set of total systems that ensure the functioning of the stock market. Scientists of our country have done almost no research on the infrastructure of the stock market and its formation. Based on the above, in our opinion, the stock market infrastructure should be interpreted as a set of systems and structures that operate separately and independently, in accordance with the rules of the stock market, which is a prerequisite for the effective functioning and existence of the stock market. In this regard, given that the stock market infrastructure depends on investment activities, and thus plays an important role in the sustainable development of the economy, improving the living standards of the population, the improvement of stock market infrastructure should be studied as an urgent problem.

A number of studies have been conducted in foreign countries to study the problems aimed at shaping the infrastructure of the stock market, not only the infrastructure for exchange trading, but also the perfect structures that cover over-the-counter areas. In particular, the largest number of computerized system terminals in China in the world is made by STAQS (Securities Trading Automated Quotations System). Shares of state-owned enterprises and government bonds are sold by the state electronic trading system NETS (National Electronic Trading System).

The dissertation is based on the experience of foreign countries in the law on investment funds, the rules of creation and operation of investment institutions. The practice of applying the experience of shaping the infrastructure of the Chinese market to the Uzbek stock market has been proposed. In the Chinese experience, a large part of the over-the-counter stock market (more than 90%) is financial bonds and corporate bonds, it is noteworthy that in China treasury bonds are not taxed and they mainly attract the population. In our opinion, in our country, too, the income tax on treasury bonds should be

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sharply reduced or abolished, and it is expedient to attract government securities to the secondary securities market.

The volume and composition of the securities market in the Republic of Uzbekistan is reflected in the state of formation of the stock market infrastructure and its main criteria. The total volume of the stock market in the country in 2017 amounted to 17,340 billion soums. The share of the primary securities market (QSB) was 87% and the share of the secondary QQB was 13%. The republican securities market increased 23-fold in 2009-2017, with an increase in the share of primary securities in the structure of trading volume

The stock exchange is an organized securities market that, together with investment institutions, organizes the process of trading in securities. Attracting large sums of money for restructuring and modernization of joint-stock companies through exchange trades, and the newly established joint-stock companies are gaining additional financial resources to implement their investment projects. As a result of the establishment of the Republican Stock Exchange "Tashkent" and the implementation of trade transactions on the basis of modern technologies in the formation of the securities market in our country, all investors have the opportunity to participate comfortably and openly in the securities market.

Today, the main share of the stock market falls on the Republican Stock Exchange "Tashkent", which in 2018 will reach 687.3 billion soums. soums. One of the most important tasks facing the capital market agency and the stock exchange is to increase the number of listing companies. A total of 13,750 transactions for the purchase and sale of securities were signed by 105 joint-stock companies listed on the stock exchange. The main ones are financial sector enterprises, which account for 88.8% or 610.3 billion soums of exchange turnover, 2.5% or 17.5 billion soums for the agro-industrial complex, 2.3% or 15.6 billion soums. The industrial sector accounted for 2.3% or 15.6 billion soums, construction companies and 2.4% or 16.5 billion soums for other sectors.

The official list of the Republican Stock Exchange "Tashkent" is divided into 4 categories: the number of companies meeting the requirements of category "A" is 14, 11 of which are commercial banks, 10 for category "B", 69 for category "C". and 12 companies meet the requirements of category "R" (state joint stock companies).

The region with the largest number of share transactions among the regions of the country is the city of Tashkent, which in 2017 accounted for 90.47% of total sales, and investors accounted for 41.9% of transactions in Tashkent. The next place is occupied by Fergana region, which accounted for 3.46% of total trade turnover. The volume of issues in 2010 decreased by almost 2 times compared to 2005, but the main reason for this was a sharp increase in the activity of commercial banks, which exceeded the normative capital of commercial banks.

Given the impact of a number of macroeconomic factors on the development of the stock market as a result of the study of the factors strongly influencing the investments in the stock market (economic growth, population savings and annual inflation) and the state of the stock market as a whole requires the gradual achievement of integrated development within the framework of macroeconomic policy.

Uzbekistan will be analyzed on the basis of increasing stock market index (UCI), which is recognized in world practice as a key indicator of stock market development. An econometric analysis

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of the simple functional relationship of the factors affecting the improved index of the stock market of Uzbekistan on the basis of data for 2012-2017 was conducted. This econometric analysis was used to determine the long-term and short-term dependence of free and involuntary variables using the Pesaran and Shin autoregressive distributed lag (ARDL) model. In econometric analysis, the assessment of the degree of influence of factors influencing the stock market index is expressed in the following form:

$$UCI = f\,(LJSM, MC, MDM, MMT,) \qquad (1)$$

Here,

UCI - stock market index (Uzbekistan Composite Index);

LJSM - the number of joint stock companies traded on the stock exchange;

MC - level of market capitalization;

MDM - number of stock exchange transactions;

MMT - exchange trade turnover;

Extended Dickey-Fuller and Phillips-Perron unit root tests were performed to determine stationary. In our study, the extended Dickey-Fuller and Phillips-Perron tests variables LnUCI I (0), LnLJSM I (0), LnMDM I (0), and LnMMT I (0) were first in the zero difference, i.e., zero-order stationary, ΔLnMC I (1). the procedure was found to be stationary. After the unit root test, a dependency test was performed to determine the reliability level of the result. The dissertation showed the existence of a long-term cointegration between free and free variables.

$$LnUCI_t = \varphi_0 + \beta_1 lnLJSM_{t-1} + \beta_2 lnMDM_{t-1} + \beta_2 lnMMT_{t-1} + \beta_3 \triangle lnMC_{t-1} + \varepsilon_t \qquad (2)$$

Based on formula (2) above, in our econometric analysis, a long-term correlation test was performed using the ARDL method to determine the degree of influence of factors influencing the stock market index. The results of this test are reflected in the table below (Table 2).

According to Table 2, the market capitalization and exchange turnover from the ARDL ratios have a positive impact on the stock market index UCI.

Table 2

Evaluation in the autoregressive distributed lag (ARDL) model

Variables	**ARDL(1, 0, 0, 0, 2)**			
	Coefficient	**Default error**	**t- statistics**	**Probability**

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LnUCI(-1)	0.096880	0.110717	0.875030	0.3849
LnLJSM	0.182251	0.135962	1.340456	0.1850
DLnMC	3.863287	1.014338	3.808678	0.0003***
LnMDM	0.042505	0.068402	0.621393	0.5366
LnMMT	0.338785	0.045951	0.844049	0.0401***
LnMMT(-1)	0.025581	0.040202	0.636311	0.5269
LnMMT(-2)	0.083996	0.041784	2.010260	0.0488
C	8.386786	0.924062	9.075998	0.0000

*** Indicates statistical significance at 1%, ** statistical significance at 5%, * statistical significance at 10%.

However, other factors, such as the number of joint stock companies traded on the stock exchange and exchange market transactions, were found to be statistically insignificant and had almost no effect on the independent variable. If the market capitalization increases by 1 unit without other factors (ceteris paribus), the stock market index (UCI) will increase by 3.86 points. If the stock exchange turnover increases by 1 unit, the stock market index will increase by 0.33 points.

To achieve a perfect and detailed result in econometric analysis, it is advisable to check the short and long term dependence in the ARDL model. For the short-term coupling test, the elements of the error correction mechanism were placed in the econometric model and presented as follows.

$$lnUCI_t = \alpha_0 + \sum_{t}^{p} \alpha_1 \, UCI_{t-i} + \sum_{t}^{q} \alpha_2 \triangle lnLJSM_{t-i} + \sum_{t}^{q} \alpha_3 \triangle lnMDM_{t-i} + \sum_{t}^{q} \alpha_4 \triangle lnMMT_{t-i} + \gamma ECM_{t-1} + \varepsilon_t$$

here:

α_0 – constant, ε_t – standard error, $\alpha_1, \dots, \alpha_6$ – short-term elasticity, $\beta_1, \dots, \beta_5$ – long-term elasticity, *ECM* – error correction factor, γ – rate of change (coefficient of variability).

Table 3

Form of cointegration and short-term dependence test

Variables	Coefficient	Default error	t- statistics	Probability
D(LNLJSM)	0.182251	0.135962	1.340456	0.1850

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D(DLNMC)	3.863287	1.014338	3.808678	0.0003***
D(LNMDM)	0.042505	0.068402	0.621393	0.5366
D(LNMMT)	0.338785	0.045951	0.844049	0.0401**
D(LNMMT(-1))	0.083996	0.041784	2.010260	0.0488
CointEq(-1)	-1.096880	0.110717	-9.907094	0.0000
Cointeq = LNUCI - (-0.1662*LNLJSM -3.5221*DLNMC -0.0388*LNMDM - 0.0179*LNMMT + 7.6460)				

*** Indicates statistical significance at 1%, statistical significance at ** 5%, statistical significance at * 10%.

When we perform the cointegration form and short-term correlation test based on the data in Table 6, when the errors are corrected, the stock market index UCI has a positive effect on market capitalization and stock turnover. Because, according to the hypothesis test, the market capitalization coefficient is positive, with a probability value of 0.0000. The stock turnover ratio is 0.0488, indicating that the reliability level is 95% significant.The error correction factor is CointEq (-1) with a probability value of 0.0000 and the reliability ratio is 99%. The error correction factor means that the short-term deviation from the long-term correction is 99 percent corrected each month. CointEq (-1) with a coefficient of -1.096880 indicates a correction of 1.09% for long-term and short-term deviations. According to the short-run correlation test, the stock market index shows that UCI has a positive and short-term correlation between market capitalization and stock turnover.

Table 4

Long-term dependency test

Variables	Coefficient	Default error	t- statistics	Probability
LnLJSM	0.166154	0.123713	1.343055	0.1842
DLnMC	3.522068	0.984141	3.578825	0.0007***
LnMDM	0.038750	0.061903	0.625980	0.5336
LnMMT	0.017896	0.068460	0.261407	0.7946
C	7.646035	0.371503	20.581364	0.0000

*** Indicates statistical significance at 1%, statistical significance at ** 5%, statistical significance at * 10%.

The data in Table 4 show that the long-term dependence test, on the other hand, has changes under the influence of factors. In particular, only the market capitalization has a positive effect on the stock market index and is statistically significant. The coefficient of these indicators is statistically significant, and the reliability of the impact of these coefficients is 99%. The remaining variables

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show that the stock market index will not be affected in the long run. In order to verify the robustness of our econometric model, it is advisable to perform a residual regressive residual summation (SUSUM) and regression residual squares (CUSUM of Squared) test. The result obtained showed that the sum of the regressive residuals (Fig. 1) and the sum of the squares of the regressive residues (Fig. 3) did not exceed the confidence interval of 5% and fluctuated in the limited range and the stability of the selected model.

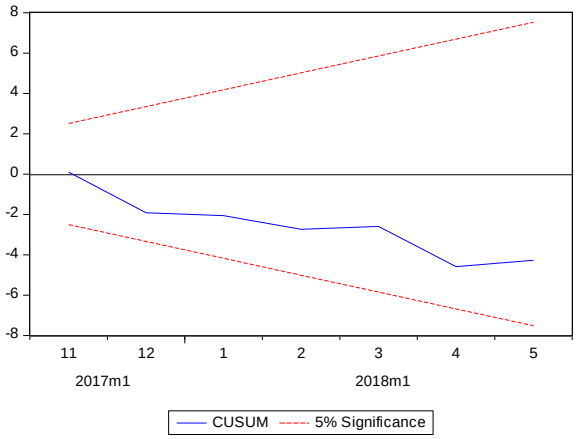

Figure 1. Regressive residual sum test

(CUSUM)

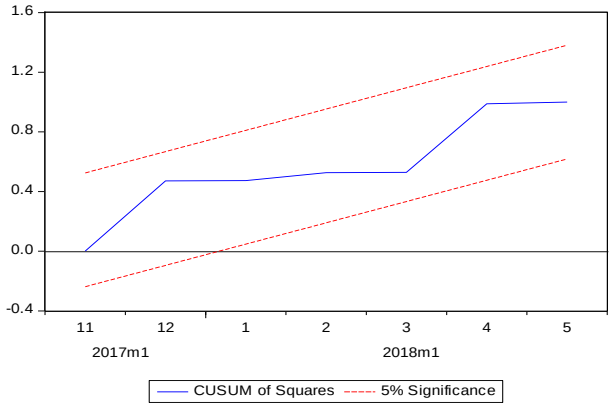

Figure 2. The sum of squares of regressive residues

(CUSUM of Squared) test

The SUSUM test shows that the total sum of the residuals of the variables and the sum of the squares are also considered stable. This is because the statistical significance level of the residual interval did not exceed the 5% interval. The econometric model formed based on the results of the SUSUM test can make long-term and short-term forecasts.

In summary, the results of an in-depth econometric analysis of the autoregressive distributed lag (ARDL) model show that the market capitalization and exchange turnover, which are free variables, have a short-term relationship to the free variable stock market index UCI. the market index will increase by 3.86 points. An increase in exchange turnover by 1 unit will lead to an increase in the stock market index by 0.33 points.

The above analysis shows that the stock market of our country has a development trend, but there are problems that need to be addressed. Attracting financially stable joint stock companies to the stock exchange, increasing the number of listing companies, increasing the number of instruments in circulation and their profitability, liquidity, development of the secondary securities market, maximum simplification of trades, increasing trade transparency and, most importantly, securities of legal entities and citizens a large financial mecha- nism in which the stock exchange can turn the money in the hands of the population into investments by increasing confidence showed the need to implement targeted strategies to transform the system.

DISCUSSION & CONCLUSION

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Prospects for the development of the stock market of Uzbekistan directly depend on the quality of its infrastructure. The level of services provided by the Fund's infrastructure to market participants that fully meet the needs of the developed market will increase its role in the mechanism of converting financial resources into investments in the real sector of the economy. And, conversely, the fact that today's market infrastructure lags behind the growing needs of market participants in its development may lead to the loss of the Russian national capital market. This is because large strategic issuers and investors are flocking to foreign markets in a bid to minimize risks and take advantage of additional opportunities that Western infrastructure can offer. This indicates the need to take measures to improve the country's fund infrastructure.

The results of the study can be presented in the following form:

1. The securities market is important in the economy, it has a number of functions, including the attraction of temporarily vacant financial resources in sectors of the economy, the efficient allocation and redistribution of financial and investment resources to promising sectors of the economy, public debt service, redistribution of ownership. business development and job creation, providing investors with the opportunity to increase their investment.

2. Raising the mechanism of the stock exchange to world standards, simplifying the requirements for listing and quotation of securities, the creation of an effective infrastructure through the creation of automated communication systems of the most important stock market infrastructure: exchanges, depositories, investment intermediaries and clearing houses.

3. The reason that slows down the effective functioning of the mechanism of the securities market is the low network growth of investment institutions, the lack of highly qualified personnel. The lack of investment companies, consulting firms, management companies, nominal depositors, and underwriters in all regions almost limits the participation of the regions in the stock market (their share is less than 1%). Therefore, special attention should be paid to the formation of stock market infrastructure by regions.

4. It is expedient to establish an online remote organization of the general meeting of shareholders of joint-stock companies that are issuers of securities. On this basis, the documents and reports submitted to shareholders will be electronic, shareholders' time will be saved, transportation costs will be reduced and the quorum of all shareholders will be 100%.

5. It is necessary to systematize and improve the regulatory documents on the state of the securities market, its participants, the preparation and submission of the necessary information and reports on their securities and financial and economic activities.

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