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ВЕСТНИК

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COMPARATIVE ANALYSIS OF RETURN AND VOLATILITY OF THE KAZAKH AND UKRAINIAN STOCK MARKET SUBJECT TO THE INVESTMENT TIME HORIZON[1]

Abstract: The development of the state's economy is inconceivable without the revitalization of investment processes in the field of financial investment, which are based on operations in the stock market. Simultaneously, the financial investment is characterized by speculative risk, which involves the possibility of obtaining both income and losses from the tradable securities. Such risk creates volatility of financial markets, an indicator of which is the dynamics of changes in stock indices that reflect the value of share capital of the largest enterprises and financial institutions of the state. The analysis of the results of recent scientific work carried out in the paper has shown a significant interest among the world's leading financial scientists to the issue of assessing the volatility of stock markets, which becomes of particular relevance subject to the investment time horizon. The study revealed a strong linear direct correlation between the indices of the Kazakhstan Stock Exchange (KASE) and the Ukraine Stock Exchange (PFTS). The analysis of the impact of the investment time horizon on the indicators of return and volatility was carried out for the Kazakh and Ukrainian stock markets. As a result, it was determined that the stock markets of both countries are characterized by a significant level of volatility, which is offset by high return and tends to decrease with increasing investment horizon. Analysis of the return and risk ratio using the Sharpe Ratio demonstrated an increase in investment attractiveness with increasing investment horizon.

[1]This work was supported by the Ministry of Education and Science of Ukraine (Project No. 0117U003922 «Innovative drivers of national economic security: structural modeling and forecasting»).

Introduction. A high level of instability is typical of modern world economic systems, which is noticeable in sharp fluctuations in exchange rates, crisis processes in the financial and credit sphere, bankruptcies, loss of budget revenues at various levels. One of the indicators of the economic state of the country is the state of the stock market, indicators of which are stock indices. The volatility of stock indices reflects the level of risk inherent in the economy of a particular country or the whole world. Thus, the sharp fall of the generally recognized DowJones, S&P 500, NASDAQ, FTSE 100, DAX indices etc. signal a global crisis, the scale of which is reflected in the level of the decline of the index.

Conversely, the increase of the index indicates a positive process in the economy and encourages investors to buy securities. Thus, the basis of the study of stock market volatility is to determine the dynamics of changes in stock indices and identify their trends. The relevance of such a study has recently noticeably increased, as stock market jumps in commodity resources are also experiencing significant fluctuations in a pandemic crisis. Of particular interest is the study of the volatility of stock markets in countries with economies in transition, because they have significant potential for investment opportunities for both domestic and foreign investors. It should be noted that due to the increased risks of transition economies, most investors prefer short-term investments, offsetting the risks of higher returns. At the same time, the experience of leading countries shows the benefits of a long-term financial investment as a more reliable and less risky area of investment. Thus, there is a need to study the return and volatility of stock markets, taking into account the investment time horizon.

Brief Literature Review. The analysis of the scientific literature revealed significant interest in the issues of financial markets and assessing their return and volatility. Among the many authors who study the peculiarities of the development of financial markets in transition, economies are the works of S. Nurymova, A. Yessentay, M. Khalitova, Y. Jumabayev, Mohd-Pisal Zainal [1] ,V. Shurshyn, V. Hmyria, S. Poliakh [2], L. Zakharkina, M. Abramchuk [3], O. Zakharkin, L. Zakharkina, N. Antoniuk [4] and other modern scholars. H. Markowitz (1952) [5] and W. Sharpe (1970) [6] introduced the principles of taking into account market volatility in financial investment risk management in their real works. They developed a methodology for assessing the ratio of return and risk in order to optimize the investment portfolio, which was further developed and improved by numerous scientists. Recent publications on these

issues include S. Idrees, M. Alam, P. Agarwal [7], A. Atkins, M. Niranjan, E. Gerding [8], Z. Lin [9] T. Choudhry, F. Papadimitriou, S. Shabi [10] etc., where aspects of application of modern models of estimation of the volatility of financial markets are considered. The correlation between the volatility of stock, goods and commodity markets is considered in the works of M. Basta and P. Molnar [11], J. Feng, Y. Wang, L. Yin [12], F. Ma, Y. Zhang, M. I. M. Wahab, X. Lai [13] and others. Russian scientists N. Berzon [14], A. Abramov, A. Radygin, M. Chernova [15], A. Boyarsky [16] made a significant contribution to the study of the influence of the time factor on the return and volatility of stock markets. Despite significant publication activity, the issue of correlation between return and stock market volatility on different investment horizons remains unsolved and requires further research.

The purpose is to define the influence of time factors on the return and volatility of stock markets in transition economies.

Results. Modern stock markets of post-Soviet countries are relatively young and are in the stage of active development. That is why the Kazakh and Ukrainian stock markets were chosen as the subject of the study. These countries, having a common Soviet history, began to rebuild the financial and credit system practically, and stock markets in particular, from scratch after gaining their independence. For more than 20 years of existence, they have formed their trends and patterns of development, which have both standard features and individual differences.

Today, the leading institution of the Kazakh stock market is the Kazakhstan Stock Exchange (KASE), a universal financial market, which can be divided into five main sectors: foreign exchange market, government securities market, stock market and corporate bonds, repo operations market, derivatives market [17]. The primary indicator of the Kazakh stock market is the KASE index which is formed taking into account the share prices of the following issuers: Bank CenterCredit JSC (CCBN), KAZ Minerals PLC (GB_KZMS), Halyk Savings Bank of Kazakhstan JSC (HSBK), Kcell JSC (KCEL), Kazakhstan Electricity Grid Operating Company (KEGOC) JSC (KEGC), NAC Kazatomprom JSC (KZAP), Kazakhtelecom JSC (KZTK), KazTransOil JSC (KZTO). As of August 2020, the capitalization of companies included in the representative list of the KASE index equals 14146.6 million USD.

PFTS Stock Exchange is one of the largest stock exchanges in Ukraine. The trading system of JSC PFTS Stock Exchange has been operating since 1997; technologically, it is composed of "quote driven market", "order-driven market", "REPO market". One-sided Auctions are also held on the PFTS, including the auctions of Ukraine State Property Fund on government shares' sale, the auctions of the National Bank of Ukraine on the sale/purchase of the state securities, the IPO's of corporate bonds, etc. PFTS Index is calculated since October 1, 1997; it reflects the current condition of the Ukrainian securities market on the basis of price development of the most liquid equities of Ukrainian issuers admitted to trading on the PFTS. [18]. As of August 2020, the PFTS index is formed by the shares of the following issuers: RAIFFEISEN BANK AVAL JSC, Centerenergo, Donbasenergo, PJSC "Kryukovsky Railway Car Building Works", "Turboatom" JSC, Ukrnafta, PJSC Ukrtelecom. Figure 1 illustrates the dynamics of change in the KASE and PFTS stock indices since July 2000.

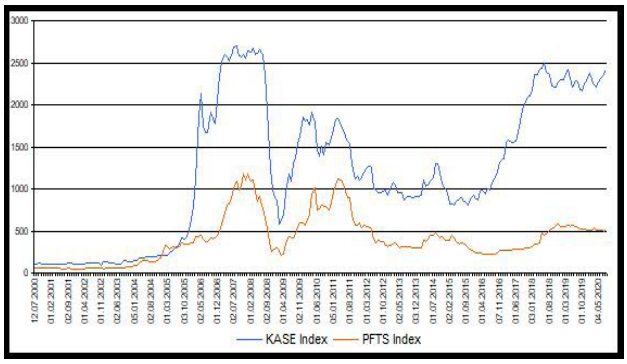

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Figure 1 - Dynamics of change of KASE and PFTS stock indices

As shown in Figure 1, the initial development of stock markets until 2006 took place in much the same way. Further, there was a sharp increase in the KASE index, the value of which in the end significantly exceeds the same indicator of the PFTS index. Indices show the same behavior during the financial crisis of 2008-09. Initially, there was a sharp decline in the index, followed by its gradual recovery during 2010-11. Since 2016, the KASE index has risen sharply again, and the PFTS index shows a sideways trend, remaining almost at the same level. This is primarily due to the military-political conflict in Ukraine, the economic crisis, and the unfavorable investment situation.

Correlation analysis was performed using the EXCEL spreadsheet editor to determine the degree of correlation between index values. The obtained Pearson correlation coefficient for the whole data set equals $r \approx 0.7757$, which indicates the presence of a strong linear direct correlation between the indices.

The impact of the investment time horizon on the return and volatility of the stock market was carried out at the following possible investment intervals: 1, 3, 6, 9 months, 1… 19 years. For comparability, calculations have been conducted since July 2000. Exponential moving average with a consistent shift of 1 month was used in the analysis of return in the intervals of investment. This research methodology was chosen, taking into account the existing similar approach provided in the works of M. Berzon [14], A. Boiarskyi [16], and other scientists. The results of the calculations are presented in table 1.

Table 1 - Indicators of maximum, minimum and average monthly return of stock markets,%

Period	Maximum return		Minimum return		Average return		
	Kazakhstan	Ukraine	Kazakhstan	Ukraine	Kazakhstan	Ukraine	Czech Republic
1 month	66,92	49,49	-33,41	-31,71	1,79	1,42	0,49
3 month	64,42	35,71	-17,94	-20,49	2,14	1,73	0,55
6 month	64,55	24,94	-12,54	-11,75	2,55	1,99	0,58
9 month	56,43	20,13	-8,63	-8,55	2,82	2,17	0,59
1 year	56,04	26,13	-6,49	-6,73	3,18	2,39	0,61
2 years	46,52	21,96	-3,20	-3,02	4,57	2,92	0,71
3 years	51,99	20,25	-1,76	-1,98	5,98	3,33	0,78
4 years	52,06	36,00	-1,30	-1,35	6,75	4,17	0,90
5 years	45,16	34,10	-1,11	-1,32	7,38	4,43	0,97
6 years	36,82	38,22	-0,94	-1,08	7,08	4,41	0,98
7 years	30,77	23,98	-0,83	-0,87	5,83	4,05	0,97
8 years	26,08	20,43	-0,71	-0,83	4,35	3,32	0,92
9 years	16,45	23,47	-0,60	-0,74	4,14	3,44	0,83
10 years	13,66	15,97	-0,47	-0,63	3,62	2,96	0,69
11 years	11,10	11,36	-0,21	-0,44	3,11	2,05	0,62
12 years	7,34	5,71	-0,12	-0,39	3,09	1,64	0,69
13 years	7,81	6,15	-0,09	-0,35	3,80	1,73	0,68
14 years	8,91	4,50	0,02	0,09	5,00	1,87	0,66
15 years	12,98	4,41	2,71	0,22	6,57	2,14	0,63
16 years	11,93	5,19	4,50	1,28	8,21	2,94	0,57
17 years	11,51	6,44	7,72	1,78	9,61	3,87	0,51
18 years	10,62	5,39	8,42	3,01	9,47	4,26	0,52
19 years	10,38	3,99	7,85	3,39	9,17	3,67	0,42

Analyzing the indicators of the maximum monthly return (Table 1 and Fig. 2) it can be concluded that for periods of investment not exceeding 6 years, the maximum return on the Kazakh stock market is much higher than the same indicator for the Ukrainian stock market. Further, these indicators are approximate of the same value.

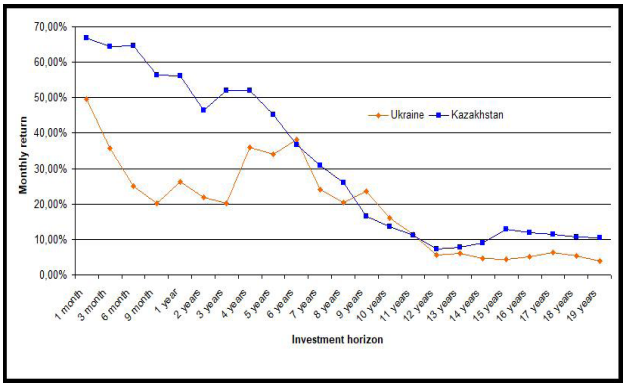

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Figure 2 - The maximum monthly return on the stock market at different investment time horizons

A similar analysis of the minimum monthly return (Table 1 and Fig. 3) shows that for almost any investment horizon for the Kazakh and Ukrainian markets, it remains practically the same. Only for very long periods of investment, exceeding 15 years, the minimum return on the Kazakh stock market significantly exceeds that of the Ukrainian stock market. It should be noted that for both markets, the minimum monthly return ceases to be harmful for an investment period exceeding 14 years.

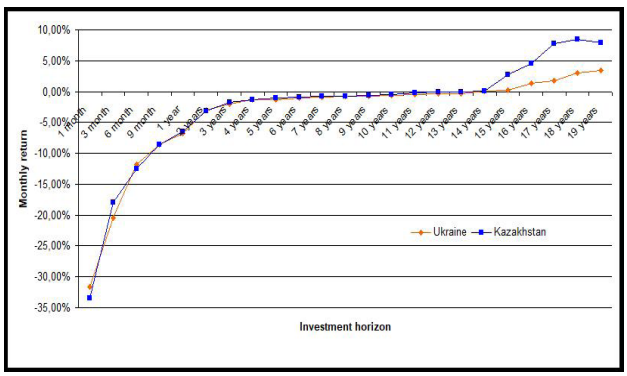

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Figure 3 - Minimum monthly return on the stock market at different time horizons of investment

An analysis of the average monthly return for different investment time horizons is presented in Table 1 and Figure 4. For comparison, the average return of the Czech stock market was also analyzed, the indicator of which is the PX index calculated on the Prague Stock Exchange. The figure shows that the average return of the Kazakh stock market is much higher than the return of the Ukrainian and especially the Czech stock market. The peculiarity of all markets is the achievement of high average monthly return on investment intervals of 4-6 years. The Kazakh and Ukrainian markets are also characterized by rising returns for investment periods of more than 13 years.

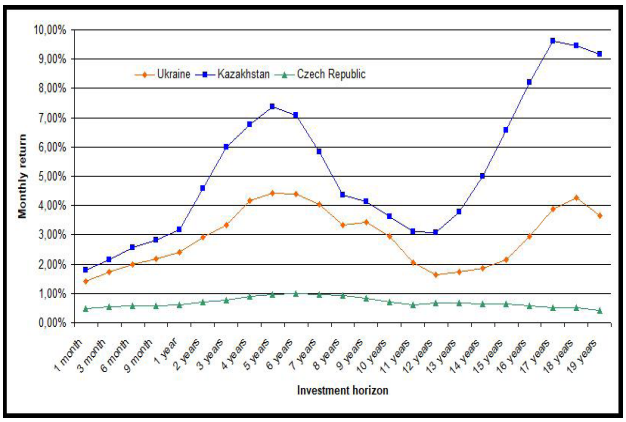

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Figure 4 - Average monthly return on the stock market at different investment time horizons

The rate of return is a one-sided characteristic of financial markets that are separate financial instruments. On the other hand, there is a need to assess the investment risk, which should be compared with the appropriate level of return. It is the speculative risk inherent in financial market operations that determines their volatility. Nowadays, there are various methodological approaches to assessing the risk of financial transactions and risk assessment of the market as a whole. Most of them are based on determining the standard return deviation based on historical data on the behavior of the financial asset. In our research, the standard deviation indicator can be used to assess market volatility, using as input data the values of monthly returns on different investment time horizons. The results of the calculations shown in Figure 5 show that the Ukrainian and Kazakh stock markets are characterized by common trends in the volatility index, the maximum values of which are manifested in the investment periods of 4-6 years. The volatility of the Czech stock market has a completely different behavior, which steadily decreases with increasing investment horizon.

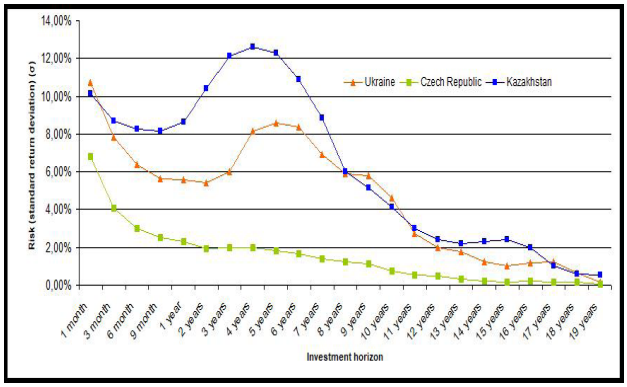

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Figure 5 - Volatility of stock markets on different investment horizons

As seen from Figures 4 and 5, for investment periods not exceeding 9 years, the return and volatility of the Kazakh and Ukrainian stock markets differ significantly. This makes it appropriate to analyze the ratio of the level of return at a given time horizon and the corresponding level of risk. This calculation should appropriately be performed using the Sharpe Ratio, which can be used as an indicator of stock market efficiency. The higher the Sharpe Ratio, the higher the risk-adjusted return on the stock market.

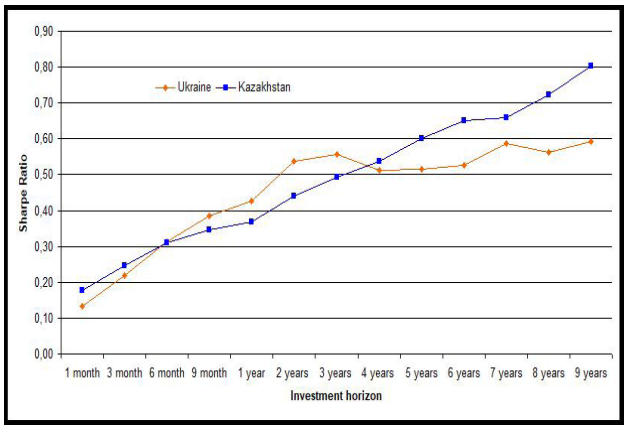

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Figure 6 - Sharpe Ratio of stock markets on different investment horizons

As shown in Figure 6, the Sharpe Ratio increases with increasing investment period. The graph demonstrates that starting from investment periods exceeding five years, the Kazakh stock market becomes more profitable than the Ukrainian one with the same level of risk.

Conclusion. Studies have shown that the theory of the manifestation of the investment time horizon effect for the stock markets of Kazakhstan and Ukraine is generally confirmed, it aims to narrow the spread between maximum and minimum returns over time and reduce investment risks, i.e. volatility. However, in contrast to countries with developed stock markets and stable economies, for the Kazakh and Ukrainian stock markets, the decrease in volatility over time

is wavy, and the values of volatility and return significantly exceed similar characteristics of stock markets in such countries. This makes the shares of Kazakh and Ukrainian companies very attractive for aggressive, risky investors. The comparative analysis demonstrated that the Kazakh stock market for investment time horizons exceeding four years is more attractive in terms of return and risk. The prospect of further research is to identify factors that affect the return and volatility of stock markets in transition economies.

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ИНВЕСТИЦИЯЛАУДЫҢ УАҚЫТША КӨКЖИЕГІН ЕСКЕРЕ ОТЫРЫП, ҚАЗАҚ ЖӘНЕ УКРАИН ҚОР НАРЫҒЫНЫҢ КІРІСТІЛІГІ МЕН ҚҰБЫЛМАЛЫЛЫҒЫН САЛЫСТЫРМАЛЫ ТАЛДАУ

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СРАВНИТЕЛЬНЫЙ АНАЛИЗ ДОХОДНОСТИ И ВОЛАТИЛЬНОСТИ КАЗАХСКОГО И УКРАИНСКОГО ФОНДОВОГО РЫНКА С УЧЕТОМ ВРЕМЕННОГО ГОРИЗОНТА ИНВЕСТИРОВАНИЯ

Аннотация. Основой успешного развития экономики является активизация инвестиционной деятельности как в сфере реального, так и финансового инвестирования. Именно финансовые инвестиции служат источником формирования основного капитала предприятий и позволяют получать инвесторам доход как от роста курсовой стоимости акций, так и от дивидендного распределения части прибыли. Вместе с тем успешная реализация инвестиционного потенциала невозможна без эффективного функционирования фондового рынка, история которого в развитых странах насчитывает не одно десятилетия. В странах же постсоветского пространства с переходной экономикой фондовый рынок начал развиваться около двадцати лет назад и еще недостаточно раскрыл потенциал своего роста, что дает инвесторам дополнительные возможности для быстрого получения прибыли при удачном вложении средств в акции перспективных эмитентов. Учитывая это, в статье был проведен сравнительный анализ фондовых рынков Казахстана и Украины с позиции доходности и волатильности.

Анализ динамики фондовых индексов Казахской (KASE) и Украинской (PFTS) фондовых бирж показал общие тенденции их поведения, характер которого имеет сильную прямую линейную взаимосвязь. Это поясняется общими историческими корнями экономического базиса Казахстана и Украины и высокой степенью зависимости от общемировой финансово-экономической ситуации. Отличие в поведении этих индексов заключается в более активном темпе роста индекса KASE в периоды 2005-2007 и после 2015 года, что на наш взгляд, связано с большей стабильностью казахской экономической и политической систем, что делает казахский фондовый рынок более привлекательным для инвесторов.

Для выявления привлекательности фондовых рынков на разных временных горизонтах инвестирования было проведено исследование соотношения доходности и риска с помощью коэффициента Шарпа. Анализ показал, что с удлинением горизонта инвестирования коэффициент Шарпа значительно растет. При этом для казахского фондового рынка инвестирование на периоды, превышающие 4 года, становится более выгодным, чем для украинского.

Ключевые слова: доходность, риск, волатильность, фондовые индексы, горизонт инвестирования, инвестиционная привлекательность, коэффициент Шарпа.

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REFERENCES

[1] Nurymova, S., Yessentay, A., Khalitova, M., Jumabayev Y., & Zainal, Mohd-Pisal (2019) Kazakhstani financial sector performance features under current conditions. Bulletin of the National academy of sciences of the Republic of Kazakhstan. Vol. 1. P. 130-144. DOI: 10.32014/2019.2518-1467.16 URL: http://www.bulletin-science.kz/en/archive/2019/%E2%84%961.html (accessed 20.08.2020) (in Eng.).

[2] Shurshyn, V. O., Hmyria, V. P., & Poliakh, S. S. (2018) National bank of Ukraine and national commision of securities and stock market as the main regulators of Ukraine financial market functioning. Bulletin of the National academy of sciences of the Republic of Kazakhstan. Vol. 4. P. 191-198. URL: http://www.bulletin-science.kz/en/archive/2018/%E2%84%964.html (accessed 20.08.2020) (in Eng.).

[3] Zakharkina, L., & Abramchuk, M. (2018) The correctness of the CAPM-model application in the Ukrainian reality in terms of investors financial security. Baltic Journal of Economic Studies. Vol. 4 (1). P. 163-168. DOI: http://dx.doi.org/10.30525/2256-0742/2018-4-1-163-168. URL: http://www.baltijapublishing.lv/index.php/issue/article/view/346 (accessed 20.08.2020) (in Eng.).

[4] Zakharkin, O., Zakharkina, L., & Antoniuk, N. (2017) A comparative analysis of stock market volatility depending on investment time horizon. Economic Annals-XXI. Vol. 167(9-10). P. 49-52. https://doi.org/10.21003/ea.V167-10 (in Eng.).

[5] Markowitz, H. (1952) Portfolio selection. The Journal of Finance. Vol. 7. No. 1. P. 77–91. URL: https://www.math.ust.hk/~maykwok/courses/ma362/07F/markowitz_JF.pdf (accessed 20.08.2020) (in Eng.).

[6] Sharpe, W. (1970) Portfolio theory and capital markets. N. Y.: McGraw-Hill (in Eng.).

[7] Idrees, S. M., Alam, M. A., & Agarwal, P. (2019) A prediction approach for stock market volatility based on time series data. IEEE Access. Vol. 7. P. 17287-17298. doi:10.1109/ACCESS.2019.2895252 (in Eng.).

[8] Atkins, A., Niranjan, M., & Gerding, E. (2018) Financial news predicts stock market volatility better than close price. The Journal of Finance and Data Science. Vol. 4. No. 2. P. 120-137. (in Eng.).

[9] Lin, Z. (2018) Modelling and forecasting the stock market volatility of SSE composite index using GARCH models. Future Generation Computer Systems. Vol. 79. P. 960-972. doi:10.1016/j.future.2017.08.033 (in Eng.).

[10] Choudhry, T., Papadimitriou, F. I., & Shabi, S. (2016) Stock market volatility and business cycle: Evidence from linear and nonlinear causality tests. Journal of Banking and Finance. Vol. 66. P. 89-101. doi:10.1016/j.jbankfin.2016.02.005 (in Eng.).

[11] Bašta, M., & Molnár, P. (2018) Oil market volatility and stock market volatility. Finance Research Letters. Vol. 26. P. 204-214. doi:10.1016/j.frl.2018.02.001 (in Eng.).

[12] Feng, J., Wang, Y., & Yin, L. (2017) Oil volatility risk and stock market volatility predictability: Evidence from G7 countries. Energy Economics. Vol. 68. P. 240-254. doi:10.1016/j.eneco.2017.09.023 (in Eng.).

[13] Ma, F., Zhang, Y., Wahab, M. I. M., & Lai, X. (2019). The role of jumps in the agricultural futures market on forecasting stock market volatility: New evidence. Journal of Forecasting. Vol. 38(5). P. 400-414. doi:10.1002/for.2569 (in Eng.).

[14] Berzon, N. I. (2014) Ocenka finansovyh aktivov po kriteriju «risk-dohodnost'» s uchetom dlitel'nosti investirovanija [Assessment of financial assets by the ratio of "risk-yield", taking into consideration the duration of investments]. Vestnik Moskovskogo universiteta imeni S. Ju. Vitte. Serija 1: Jekonomika i upravlenie [Moscow Witte University Bulletin. Series 1: Economics and Management]. Vol. 2 (8). P. 39-52. URL: https://www.muiv.ru/vestnik/pdf/eu/eu_2014_2_039-052.pdf (accessed 20.08.2020) (in Russ.).

[15] Abramov, A., Radygin, A. & Chernova, M. (2015) Dolgosrochnye portfel'nye investicii: novyj vzgljad na dohodnost' i riski [Long-Term Portfolio Investment: New Insight into Return and Risk]. Voprosy jekonomiki [Voprosy Ekonomiki]. Vol. 10. P. 54-77 (in Russ.).

[16] Bojarskij, A. (2016) Faktor vremeni v ocenke jeffektivnosti portfel'nyh investicij na rossijskom fondovom rynke [Time factor in the estimation of the indirect investment efficiency in the Russian stock market]. http://abnsecurities.blogspot.com/ URL: http://abnsecurities.blogspot.com/2016/03/blog-post.html (accessed 20.08.2020) (in Russ.).

[17] Kazakhstan Stock Exchange [Kazahstanskaya fondovaya birzha] URL: https://kase.kz/en/ (accessed 20.08.2020) (in Eng.).

[18] Parameters of PFTS Index securities [Parametry Tsinnykh paperiv Indeksu PFTS] URL: http://pfts.ua/trade-info/indexes/shares-indexes (accessed 20.08.2020) (in Ukr.).

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