GCCR
Global Conference on Contemporary Research

GLOBAL CONFERENCE ON CONTEMPORARY RESEARCH



CONFERENCE THEME:

SUSTAINABLE FUTURES:
INNOVATION, DIGITAL TRANSFORMATION AND GLOBAL COLLABORATION THROUGH CONTEMPORARY RESEARCH

INNOVATION | DIGITAL TRANSFORMATION | GLOBAL COLLABORATION | SUSTAINABLE FUTURES

JOURNAL

PEER-REVIEWED PROCEEDINGS

OCTOBER 2026

TORONTO, CANADA

gccr.academy

IMPACT OF ARTIFICIAL INTELLIGENCE AND THE HUMAN ROLE IN THE FUTURE STOCK MARKET
THEORETICAL AND IDEOLOGICAL EXPECTATIONS FOR UZBEKISTAN

Alisher Shavkidinov

https://doi.org/10.5281/zenodo.23451947

Abstract. Artificial intelligence can reduce the cost of processing financial information, yet its contribution to stock market development depends on the institutions that govern data, decisions and accountability. This article examines that relationship for Uzbekistan through a critical synthesis of financial economics, research on human reliance on algorithms, international governance frameworks and national policy documents. It distinguishes established findings from conditional expectations and develops a framework in which automated analysis remains subject to accountable human authority. The central argument is that market quality depends on complementary investment in disclosure, professional competence and supervisory capacity. An ideological comparison identifies tensions between technological efficiency, developmental objectives and investor autonomy. Two analytical tables specify responsibilities and measurable criteria for future evaluation. The proposed framework yields testable propositions concerning disclosure quality, meaningful review and common dependence on model providers. For Uzbekistan, the defensible sequence begins with verified information and supervised analytical applications, followed by limited deployment only after independent validation. These conclusions are theoretical; the article reports no original trading experiment or estimated investment returns.

Keywords: artificial intelligence; stock market; human judgment; Uzbekistan; market microstructure; algorithmic accountability; investor protection; technological ideology.

Introduction. The stock market coordinates competing judgments about uncertain future cash flows. Artificial intelligence changes the cost and speed of producing those judgments, but does not remove uncertainty or conflicts of interest. International assessments identify potential gains in analysis and market functioning alongside vulnerabilities arising

from correlated decisions, dependence on technology providers and weak model governance [1, 2]. The relevant question for Uzbekistan is therefore how to distribute decision authority when financial institutions acquire more powerful analytical systems.

This article asks which economic mechanisms could improve market quality, which human responsibilities should remain enforceable, and what ideological assumptions shape expectations of automation. Its contribution is a conditional framework linking technical capability to institutional readiness. “Ideological expectations” denotes normative beliefs about efficiency, national development and legitimate authority; it does not describe measured public opinion. A stock market is assessed here by information quality, liquidity, resilience and fair access, rather than by rising prices alone.

Research design and theoretical foundations. The study uses a purposive integrative review and institutional comparison. Foundational financial research is combined with empirical studies of algorithmic decision making and official documents available by 15 October 2026. Sources were selected for their relevance to price discovery, task allocation, accountability or Uzbekistan’s policy setting, with original publications and official issuers preferred. Findings are compared by mechanism, assumptions and limits of transferability. This is neither a systematic review nor a causal evaluation. The resulting propositions identify relationships for subsequent testing; they do not establish that a particular system is profitable or already operating in Uzbekistan.

Fama’s account of informational efficiency supplies a benchmark for asking whether faster analysis helps prices incorporate available information [3]. Grossman and Stiglitz show why costly information acquisition prevents perfectly informative prices from being a straightforward equilibrium outcome [4]. Artificial intelligence may lower research costs, but proprietary data and computing capacity can remain scarce. Cheaper analysis can consequently narrow some information gaps while strengthening the position of firms that control the best inputs.

Kyle’s model explains the relationship between informed order flow, price adjustment

and liquidity [5]. It directs attention to execution conditions: an accurate prediction can lose economic value when the resulting trade moves the price. Hendershott, Jones and Menkveld document liquidity benefits from algorithmic trading in a particular United States market setting [9]. Their evidence concerns algorithmic trading, which need not use artificial intelligence, and cannot establish the same effect in Uzbekistan. Budish, Cramton and Shim further show how market design can create socially costly competition for speed [10]. Faster execution is therefore an insufficient development objective.

Behavioural and adaptive perspectives explain why additional processing power need not eliminate instability. Shiller questions whether observed price variation is consistent with a simple dividend valuation benchmark [6], while prospect theory identifies reference dependence and asymmetric responses to gains and losses [8]. Lo connects market behaviour to adaptation under changing competitive conditions [7]. A model trained on historical relationships may become unreliable when participants alter their strategies in response to that model. Learning and market feedback must be considered together.

Gu, Kelly and Xiu demonstrate the value of nonlinear methods for empirical asset pricing in their research setting [11]. Transfer requires locally valid data and realistic trading assumptions. At the organisational level, Acemoglu and Restrepo distinguish the displacement of tasks from the creation of new tasks [12], and Raisch and Krakowski examine the interdependence of automation and augmentation [13]. Applied to securities markets, these arguments suggest a shift from routine information extraction toward validation, investigation and accountable investment judgment. They do not imply that every displaced position will be replaced.

Uzbekistan and competing expectations of automation. The International Monetary Fund’s 2025 assessment describes Uzbekistan’s capital markets as underdeveloped and identifies institutional preconditions for their expansion [16]. This makes it risky to infer local benefits directly from studies of deep markets. Before selecting complex forecasting systems, institutions need an audit of disclosure availability, trading frequency, corporate actions and

executable prices. The National Agency of Prospective Projects identifies capital market regulation among its responsibilities [20]; the framework below treats supervisory capability as a necessary complement to private investment.

Presidential Resolution PQ-358 of 14 October 2024 established the artificial intelligence development strategy through 2030, and Decree PF-189 of 22 October 2025 introduced further development measures [17, 18]. More specifically, the ethics rules registered under number 3787 on 14 March 2026 entered into force on 17 June 2026. They address transparency, responsibility, data protection and human interests; paragraph 6 states that participants should not treat system decisions as final [19]. These provisions support examination of human decision authority, without themselves proving that any stock market application is compliant.

Table 1. Normative perspectives and their implications for Uzbekistan

Perspective	**Expected benefit**	**Risk or trade-off**	**Institutional response**
Technological efficiency	Lower analysis and execution costs	Speed can reward privileged access	Evaluate information quality and total trading costs
Developmental policy	Skills, domestic capability and financing	Public support can favour incumbents	Transparent procurement and independent evaluation
Investor autonomy	Accessible analysis and informed choice	Persuasive outputs can induce dependence	Understandable explanations and review channels
Market pluralism	Competing models and providers	Common vendors can synchronise errors	Portability, alternatives and concentration monitoring

Source: conceptual synthesis of [1, 12, 18, 21, 22]. The rows are analytical positions, not survey findings.

These positions imply different standards of success. A broker may prefer lower operating costs, while a public institution may prioritise domestic expertise or wider participation. Those objectives can conflict when inexpensive foreign services weaken local validation capacity, or when subsidised domestic systems escape competitive scrutiny. The principles articulated by the Organisation for Economic Co-operation and Development and the United Nations Educational, Scientific and Cultural Organization provide normative grounds for accountability and human agency [21, 22]. For Uzbekistan, the argument advanced here is to make such objectives explicit before procurement, then assess whether actual benefits reach investors rather than only technology suppliers.

Results of the conceptual synthesis. Figure 1 locates human authority at the point where analysis becomes a consequential action. A reviewer must have access to relevant evidence, sufficient competence and the practical power to refuse deployment. Merely adding an approval button does not establish meaningful supervision. The architecture combines institutional accountability with continuous evaluation of model behaviour [23, 24].

Figure 1. Proposed allocation of analytical work, decision authority and feedback. Original conceptual diagram informed by [1, 23, 24]; no empirical effects are represented.

DATA AND DISCLOSURE → AI-ASSISTED ANALYSIS
HUMAN REVIEW: verify evidence • assess uncertainty • accept, amend or reject
ACCOUNTABLE ACTION → LOGGING, AUDIT AND FEEDBACK

Human review has its own failure modes. Dietvorst, Simmons and Massey find that people can reject algorithms after observing errors, whereas Logg, Minson and Moore document circumstances in which algorithmic advice is preferred [14, 15]. Neither result justifies assuming that people invariably trust or distrust machines. Reviewers should record reasons for accepting or overriding recommendations, and periodic audits should compare both kinds of decisions. Review quality matters more than the number of interventions.

The synthesis yields three conditional propositions. First, improvements in disclosure

completeness should increase the usefulness of automated analysis more strongly where information gaps previously constrained valuation. Second, documented review with genuine rejection authority should reduce severe decision errors relative to nominal approval, provided reviewers are trained and have time to investigate. Third, shared providers and similar training data should increase correlated recommendations during unusual conditions, potentially weakening resilience even when individual systems perform well in ordinary periods.

These propositions separate private predictive accuracy from market-wide welfare. An intermediary can improve its forecasts while contributing to crowded trades. Conversely, an application that only checks issuer disclosures may strengthen trust without generating a measurable trading advantage. For Uzbekistan, this distinction supports initial applications in information verification, multilingual document comparison and investigation of anomalies. Each remains a proposal requiring local validation; language coverage and false accusations must be examined before deployment.

Evaluation priorities and implications. A credible evaluation should compare human-only analysis, model-only analysis and assisted human judgment on the same time-stamped information. Disclosure checking can be tested in a controlled pilot without executing trades. Forecasting requires chronological training and evaluation periods, strict exclusion of future information and comparison with simple benchmarks. Any trading assessment should include fees, spreads, price impact and the possibility that an order cannot be executed. Sparse observations require explicit treatment; an unchanged recorded price cannot automatically be interpreted as low risk.

Table 2. Proposed validation criteria and accountable functions

Application	Primary assessment	Accountable function	Reason to pause
Disclosure checks	Material omissions and source accuracy	Issuer compliance and independent reviewer	Unsupported statement or stale source

Investment support	Net performance and suitability errors	Licensed intermediary and investment committee	Benchmark failure or unsuitable advice
Market surveillance	Confirmed alerts and missed incidents	Supervisory investigation team	Unacceptable false accusations
System operation	Drift, incidents and provider exposure	Risk management and technical operations	Data breach or control failure

Source: proposed operational criteria adapted from the governance concerns in [1, 23, 24]. Thresholds must be set before testing; none are reported as achieved.

Implementation should begin with a data inventory and clearly bounded analytical tasks. A subsequent pilot should retain decision logs, an independent validation function and an effective suspension procedure. Expansion should depend on predefined evidence rather than a fixed deadline. Training should cover financial reasoning and the interpretation of uncertainty, including the limitations of generated explanations. Shared services may lower entry costs for smaller intermediaries, but contracts should allow data portability and independent review so that access does not create permanent dependence.

Limitations and conclusion. The evidence base combines studies from different markets and periods. It contains no representative survey of Uzbek investors, proprietary order data or controlled local deployment. Selection is purposive and may omit relevant research; proposed relationships remain untested. Future work should examine disclosure quality, reviewer behaviour and market concentration separately before attempting a comprehensive estimate of national effects.

Artificial intelligence can improve the production and scrutiny of financial information in Uzbekistan when supported by reliable disclosure, competent professionals and enforceable responsibility. Human work shifts toward setting objectives, interpreting unfamiliar

circumstances and investigating failures. Commitments to efficiency and national development require observable criteria and open scrutiny. Verified data, supervised pilots and conditional expansion make these expectations testable. Adoption itself remains an inadequate measure of success; subsequent research must establish whether investors and market institutions actually benefit.

REFERENCES

1. Financial Stability Board. (2024). The financial stability implications of artificial intelligence. 14 November. https://www.fsb.org/2024/11/the-financial-stability-implications-of-artificial-intelligence/
2. International Monetary Fund. (2024). Advances in artificial intelligence: Implications for capital market activities. In Global Financial Stability Report, October 2024, Chapter 3. https://www.imf.org/-/media/files/publications/gfsr/2024/october/english/ch3.pdf
3. Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. The Journal of Finance, 25(2), 383–417. https://doi.org/10.2307/2325486
4. Grossman, S. J., & Stiglitz, J. E. (1980). On the impossibility of informationally efficient markets. American Economic Review, 70(3), 393–408. https://www.aeaweb.org/aer/top20/70.3.393-408.pdf
5. Kyle, A. S. (1985). Continuous auctions and insider trading. Econometrica, 53(6), 1315–1335. https://doi.org/10.2307/1913210
6. Shiller, R. J. (1981). Do stock prices move too much to be justified by subsequent changes in dividends? American Economic Review, 71(3), 421–436. https://ms.mcmaster.ca/~grasselli/Shiller81.pdf
7. Lo, A. W. (2004). The adaptive markets hypothesis: Market efficiency from an evolutionary perspective. The Journal of Portfolio Management, 30(5), 15–29. https://web.mit.edu/~alo/www/Papers/JPM2004.html
8. Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk.

Econometrica, 47(2), 263–291. https://doi.org/10.2307/1914185

9. Hendershott, T., Jones, C. M., & Menkveld, A. J. (2011). Does algorithmic trading improve liquidity? The Journal of Finance, 66(1), 1–33. https://doi.org/10.1111/j.1540-6261.2010.01624.x

10. Budish, E., Cramton, P., & Shim, J. (2015). The high-frequency trading arms race: Frequent batch auctions as a market design response. The Quarterly Journal of Economics, 130(4), 1547–1621. https://doi.org/10.1093/qje/qjv027

11. Gu, S., Kelly, B., & Xiu, D. (2020). Empirical asset pricing via machine learning. The Review of Financial Studies, 33(5), 2223–2273. https://doi.org/10.1093/rfs/hhaa009

12. Acemoglu, D., & Restrepo, P. (2019). Automation and new tasks: How technology displaces and reinstates labor. Journal of Economic Perspectives, 33(2), 3–30. https://doi.org/10.1257/jep.33.2.3

13. Raisch, S., & Krakowski, S. (2021). Artificial intelligence and management: The automation–augmentation paradox. Academy of Management Review, 46(1), 192–210. https://doi.org/10.5465/amr.2018.0072

14. Dietvorst, B. J., Simmons, J. P., & Massey, C. (2015). Algorithm aversion: People erroneously avoid algorithms after seeing them err. Journal of Experimental Psychology: General, 144(1), 114–126. https://doi.org/10.1037/xge0000033

15. Logg, J. M., Minson, J. A., & Moore, D. A. (2019). Algorithm appreciation: People prefer algorithmic to human judgment. Organizational Behavior and Human Decision Processes, 151, 90–103. https://doi.org/10.1016/j.obhdp.2018.12.005

16. International Monetary Fund. (2025). Republic of Uzbekistan: Financial Sector Assessment Program—Financial System Stability Assessment. Country Report No. 25/145. https://doi.org/10.5089/9798229015103.002

17. President of the Republic of Uzbekistan. (2024). Sun’iy intellekt texnologiyalarini 2030-

yilga qadar rivojlantirish strategiyasini tasdiqlash to‘g‘risida [Approval of the artificial intelligence development strategy through 2030]. Resolution PQ-358, 14 October. https://lex.uz/docs/-7158604

18. President of the Republic of Uzbekistan. (2025). Sun’iy intellekt texnologiyalarini yanada rivojlantirishga oid qo‘shimcha chora-tadbirlar to‘g‘risida [Additional measures for further development of artificial intelligence technologies]. Decree PF-189, 22 October. https://lex.uz/docs/-7789403
19. Minister of Digital Technologies of the Republic of Uzbekistan. (2026). Sun’iy intellektga asoslangan yechimlarni yaratish, joriy qilish va ulardan foydalanish bo‘yicha etika qoidalarini tasdiqlash to‘g‘risida [Approval of ethics rules for artificial intelligence solutions]. Order 284-mh, 24 February; registered 14 March, No. 3787. https://lex.uz/uz/docs/8083233
20. National Agency of Prospective Projects of the Republic of Uzbekistan. (n.d.). Official website and regulatory remit. Accessed 15 October 2026. https://napp.uz/en
21. Organisation for Economic Co-operation and Development. (2024). Recommendation of the Council on Artificial Intelligence. OECD/LEGAL/0449, as amended in May 2024. https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0449
22. United Nations Educational, Scientific and Cultural Organization. (2021). Recommendation on the Ethics of Artificial Intelligence. Adopted 23 November 2021. https://www.unesco.org/en/artificial-intelligence/recommendation-ethics
23. International Organization of Securities Commissions. (2021). The use of artificial intelligence and machine learning by market intermediaries and asset managers. Final report, FR06/2021. https://www.iosco.org/library/pubdocs/pdf/IOSCOPD684.pdf
24. National Institute of Standards and Technology. (2023). Artificial Intelligence Risk Management Framework (AI RMF 1.0). NIST AI 100-1. https://doi.org/10.6028/NIST.AI.100-1