

МАКРОЭКОНОМИКАЛЫҚ РЕТТЕУ МАКРОЭКОНОМИЧЕСКОЕ РЕГУЛИРОВАНИЕ

IRSTI 06.73.45

<https://doi.org/10.51889/3078-8579.2026.89.3.004>

Wei Zhongkui* , Moldabekova A. 

Al-farabi Kazakh National University, Farabi International Business School, Almaty, Kazakhstan
e-mail: zhongkui@bk.ru

FINANCIAL GOVERNANCE IN THE CONTEXT OF DIGITAL TRANSFORMATION OF CORPORATIONS

Abstract

The rapid development of digital technologies is fundamentally changing the principles and tools of corporate financial governance. In the context of high market volatility, data overload and the need for real-time decisions, traditional financial management models based on annual budgeting and manual reporting are becoming less effective. The purpose of this study is to identify the impact of digital transformation on the system of financial governance of corporations and to assess its effect on the financial performance of companies. The research methodology is based on two main methods: comparative analysis and economic-statistical analysis. The comparative analysis was used to identify key differences between traditional and digital models of financial governance in terms of budgeting, risk management, investment decision-making and financial reporting. The economic-statistical analysis was conducted on a sample of 120 public corporations from the manufacturing, IT and financial sectors for the period 2020-2025. The relationship between the Digitalization Index of the Finance Function and key financial indicators such as ROA, ROE, Net Profit Margin, Operating Expenses and Investment in Innovation was assessed. The results of the study show that there is a strong positive correlation between the level of digitalization and financial performance. Companies with a high level of digitalization, above 70%, demonstrate ROA of 8.9% compared to 3.8% for companies with a low level, and ROE of 15.6% compared to 7.9%. Operating costs as a share of revenue are 8.1 percentage points lower, and investments in innovation are 3.2 times higher. The study concludes that digital financial governance allows corporations to significantly increase profitability, reduce costs and improve investment efficiency. Practical recommendations are formulated for the implementation of digital tools such as AI-based forecasting, cloud ERP and RPA in corporate practice.

Key words: financial governance, digital transformation, corporate finance, artificial intelligence, digitalization, financial performance, ROA, ROE, cloud ERP, RPA.

Вэй Чжун Куй* , Молдабекова А. 

Казахский национальный университет имени Аль-Фараби, Бизнес-школа Аль-Фараби,
Алматы, Казахстан
e-mail: zhongkui@bk.ru

ФИНАНСОВОЕ УПРАВЛЕНИЕ В КОНТЕКСТЕ ЦИФРОВОЙ ТРАНСФОРМАЦИИ КОРПОРАЦИЙ

Аннотация

Быстрое развитие цифровых технологий коренным образом меняет принципы и инструменты корпоративного финансового управления. В условиях высокой волатильности

рынка, переизбытка данных и необходимости принятия решений в режиме реального времени традиционные модели финансового управления, основанные на годовом бюджетировании и ручной отчетности, теряют свою эффективность. Цель данного исследования — выявить влияние цифровой трансформации на систему финансового управления корпорациями и оценить её воздействие на финансовые показатели компаний. Методология исследования основана на двух основных методах: сравнительном анализе и экономико-статистическом анализе. Сравнительный анализ использовался для выявления ключевых различий между традиционными и цифровыми моделями финансового управления в аспектах бюджетирования, управления рисками, принятия инвестиционных решений и финансовой отчетности. Экономико-статистический анализ проводился на выборке из 120 публичных корпораций из производственного, ИТ- и финансового секторов за период 2020–2025 годов. Была проанализирована взаимосвязь между индексом цифровизации финансовой функции и ключевыми финансовыми показателями, такими как рентабельность активов (ROA), рентабельность собственного капитала (ROE), рентабельность чистой прибыли, операционные расходы и инвестиции в инновации. Результаты исследования показывают, что существует сильная положительная корреляция между уровнем цифровизации и финансовыми показателями. Компании с высоким уровнем цифровизации (свыше 70 %) демонстрируют рентабельность активов (ROA) на уровне 8,9 % по сравнению с 3,8 % у компаний с низким уровнем, а рентабельность собственного капитала (ROE) — 15,6 % по сравнению с 7,9 %. Доля операционных расходов в выручке у них на 8,1 процентных пункта ниже, а инвестиции в инновации — в 3,2 раза выше. В исследовании сделан вывод, что цифровое финансовое управление позволяет корпорациям значительно повысить рентабельность, сократить затраты и повысить эффективность инвестиций. Сформулированы практические рекомендации по внедрению цифровых инструментов, таких как прогнозирование на основе искусственного интеллекта, облачные ERP-системы и RPA, в корпоративную практику.

Ключевые слова: финансовое управление, цифровая трансформация, корпоративные финансы, искусственный интеллект, цифровизация, финансовые результаты, ROA, ROE, облачный ERP, RPA

Вэй Чжун Куй, *  А. Молдабекова 

Әл-Фараби атындағы Қазақ ұлттық университеті, әл-Фараби бизнес мектебі,
Алматы, Қазақстан
e-mail: zhongkui@bk.ru

КОРПОРАЦИЯЛАРДЫ ЦИФРЛЫҚ ТРАНСФОРМАЦИЯ ЖАҒДАЙЫНДА ҚАРЖЫЛЫҚ БАСҚАРУ

Аңдатпа

Цифрлық технологиялардың қарқынды дамуы корпоративтік қаржылық басқарудың қағидалары мен құралдарын түбегейлі өзгертуде. Нарықтың жоғары құбылмалылығы, деректердің шамадан тыс көптігі және нақты уақыт режимінде шешім қабылдау қажеттілігі жағдайында жылдық бюджеттеуге және қолмен есептілік жүргізуге негізделген қаржылық басқарудың дәстүрлі модельдері өз тиімділігін жоғалтуда. Осы зерттеудің мақсаты – цифрлық трансформацияның корпорациялардың қаржылық басқару жүйесіне әсерін анықтап, оның компаниялардың қаржылық көрсеткіштеріне тигізетін ықпалын бағалау. Зерттеу әдістемесі екі негізгі әдіске негізделген: салыстырмалы талдау және экономикалық-статистикалық талдау. Салыстырмалы талдау бюджеттік жоспарлау, тәуекелдерді басқару, инвестициялық шешім қабылдау және қаржылық есеп беру тұрғысынан дәстүрлі және цифрлық қаржылық басқару

модельдері арасындағы негізгі айырмашылықтарды анықтау үшін қолданылды. Экономикалық-статистикалық талдау 2020–2025 жылдар аралығында өндіріс, IT және қаржы салаларындағы 120 ашық корпорацияның үлгісінде жүргізілді. Қаржы функциясының цифрландыру индексі мен активтердің рентабельділігі (ROA), меншікті капиталдың рентабельділігі (ROE), таза пайданың рентабельділігі, операциялық шығыстар және инновацияларға салынған инвестициялар сияқты негізгі қаржылық көрсеткіштер арасындағы өзара байланыс талданды. Зерттеу нәтижелері цифрлану деңгейі мен қаржылық көрсеткіштер арасында мықты оң корреляция бар екенін көрсетеді. Цифрландыру деңгейі жоғары (70%-дан астам) компанияларда активтердің рентабельділігі (ROA) 8,9%-ды құрайды, ал цифрландыру деңгейі төмен компанияларда бұл көрсеткіш 3,8%-ға тең. Меншікті капиталдың рентабельділігі (ROE) тиісінше 15,6%-ды және 7,9%-ды құрайды. Кіріс үлесіндегі операциялық шығындар 8,1 пайыздық тармаққа төмен, ал инновацияға салынатын инвестициялар 3,2 есе жоғары. Зерттеу сандық қаржылық басқару корпорацияларға табыстылықты айтарлықтай арттыруға, шығындарды азайтуға және инвестициялық тиімділікті жақсартуға мүмкіндік беретінін көрсетеді. Корпоративтік тәжірибеге жасанды интеллект негізіндегі болжамдау, бұлтты ERP-жүйелері және RPA сияқты сандық құралдарды енгізу бойынша практикалық ұсынымдар әзірленді.

Түйін сөздер: қаржылық басқару, цифрлық трансформация, корпоративтік қаржы, жасанды интеллект, цифрландыру, қаржылық нәтижелер, ROA, ROE, бұлттық ERP, RPA

Introduction

The digital transformation of the economy has prompted a thorough reevaluation of the principles and instruments of corporate financial management. The traditional financial management models, which rely on annual budgeting, historical reporting, and manual risk assessment, are proving less effective in the face of high volatility, data overload, and the need for real-time decision-making.

The advent of digital technologies — artificial intelligence, big data, cloud platforms, robotic process automation (RPA), blockchain, and digital twins — is revolutionizing the very essence of financial governance. Finance is no longer a mere back-office function but has become a catalyst for strategic development, investment analysis, and value creation.

The significance of this study is driven by several factors. Firstly, digital tools enable substantial cost savings and transaction reductions, yet they require substantial upfront investments and a shift in corporate culture.

Furthermore, there is no standardized method for evaluating the success of digital financial management: companies adopt technologies without fully comprehending their economic impact.

Moreover, for economies in transition, such as Kazakhstan, the challenge of adapting global digital financial practices to local institutional frameworks is particularly pressing.

The extent to which financial management is digitalized directly impacts a company's key financial metrics, including profitability, return on assets, cost of capital, investment activity, and financial stability. However, the relationship between digitalization and financial performance has not been thoroughly explored in the field of economics.

The purpose of this research is to investigate the influence of digital transformation on the financial management system of companies and to evaluate its impact on their financial performance.

To achieve this objective, the following tasks were set:

To categorize the key digital technologies employed in corporate financial management and to define their functions.

To analyze the effect of digitalization on the sources of funding, budgeting, risk management, and investment decision-making within corporations.

To assess the economic effectiveness of digital financial management tools and to formulate practical recommendations for their implementation in corporate practices.

The scientific novelty of this study lies in its comprehensive approach to evaluating digital financial management as a factor in enhancing the financial performance of companies. Considering both technological and organizational factors, the theoretical importance lies in the creation of theoretical frameworks for the evolution of corporate finance in the digital age.

The practical importance lies in the potential for financial managers, investment analysts, and government agencies to utilize these findings to formulate digitalization strategies for the corporate sector.

Materials and methods

The methodological basis of this study consists of two main methods:

1. Comparative Analysis

We used this method to compare traditional and digital models of financial governance in corporations. Our aim was to identify the main differences in financing, budgeting, risk management, and investment decision-making approaches before and after the implementation of digital technologies. We analyzed open data from corporate reports, financial statements, and analytical reports from international consulting agencies over the period 2020-2025.

2. Economic and Statistical Analysis

With this method, we processed quantitative data and assessed the relationship between the level of digitization of financial processes and the financial performance of companies.

As indicators of digitalization, we used the following: the share of automated financial processes, the use of cloud-based ERP systems, and the level of implementation of financial analytics based on big data and AI.

To measure financial performance, we used Return on Assets (ROA), Return on Equity (ROE), Net Profit Margin, and Operating Cash Flow as indicators.

We processed the data using standard statistical methods to determine the impact of digital tools on corporate economic efficiency. The information base for the study included official financial statements of corporations, data from the National Statistics Bureau of Kazakhstan, reports by the OECD, World Bank, Deloitte, PwC, and McKinsey on digital transformation in finance for 2020-2025, and other relevant sources.

Using these two methods, we were able to comprehensively assess the impact of digital transformation on the financial management system of corporations.

Results and discussion

The academic literature on the examination of digital transformation and its influence on the financial management systems of corporations reveals that scholars have been actively exploring the ways in which digital technologies are reshaping approaches to financing, budgeting, risk management, and investment decision-making in recent years.

Researchers from the United States and Europe, including John R. Smith, Laura M. Bennett, and Thomas K. Wright, are investigating the potential for the advancement of digital financial management in large corporations. In their work, they analyze how the implementation of cloud-based enterprise resource planning systems, artificial intelligence, and robotic process automation are altering the structure of financial departments and assessing the impact of these technologies on the speed and quality of financial decision-making (Smith et al., 2023).

For their research, the authors utilize data from Fortune 500 companies and panel regression models. They are attempting to ascertain how the extent of digitalization of financial operations influences the key financial metrics of companies.

The findings of the research demonstrate that digital technologies indeed enhance the overall effectiveness of financial management and reduce the cost of capital. This impact is comparable in magnitude to the effect of improving corporate governance and management quality.

Other scholars, such as Elena V. Petrova and Michael D. Carter, have made a substantial contribution to the investigation of the influence of digitalization on investment activity.

In their study, they developed a comprehensive framework for assessing the level of digital maturity of the financial function. This framework encompasses various aspects, including the degree of automation in financial processes, the utilization of Big Data for forecasting, the integration of artificial intelligence in risk management, and the development of digital skills among financial professionals (Petrova & Carter, 2024) .

The authors conclude that the digital transformation process enhances the investment appeal of corporations and fosters the development of a more agile and responsive financial management framework.

In Kazakhstan, A. K. Suleimenova, B. T. Nurmagambetov, and R. D. Kassymov are at the forefront of research on the digitalization of corporate finance. Their studies explore how the implementation of digital budgeting and automated treasury systems impacts the financial stability of large holding companies in Kazakhstan.

The authors highlight that digital transformation is a prerequisite for improving the transparency, control, and efficiency of financial resources. However, they acknowledge that the level of adoption of advanced digital tools in the financial departments of Kazakhstani companies is still limited due to a shortage of skilled personnel and high implementation costs (Suleimenova et al., 2024) .

The work of G. L. Ivanova, D. S. Petrov, and K. M.. Turganbaev explores the fundamental elements of integrating FinTech and blockchain into the corporate financial administration framework (Ivanova et al., 2023).

The investigation scrutinizes the primary avenues of digital transformation: the evolution of electronic payment systems, the application of intelligent contracts for transactions, the deployment of digital platforms for investor communication, and the automation of internal oversight.

The authors highlight that the implementation of these technologies helps to lower transaction expenses and fosters more efficient communication between financial teams, banks, and external auditors.

A review of academic articles reveals that digital technologies are instrumental in enhancing financial management, streamlining financial operations, and boosting the financial success of businesses.. Simultaneously, the scientific literature lacks papers that comprehensively compare the effects of digitalization on the financial performance of corporations across countries with varying degrees of digital advancement. The examination of the literature allows for the identification of conventional scholarly approaches, the determination of the primary factors driving the digital transformation of corporate finance, and the justification for further in-depth exploration of the correlation between the level of digitalization and the economic efficiency of companies. This review serves as the theoretical foundation for the research and aids in the identification of the key areas for further investigation.

As a result of the comparative analysis, significant differences in the organization of financial governance in corporations with a low and high level of digitalization were revealed. The study analyzed such aspects as the degree of automation of budgeting, the level of implementation of AI in risk management, the use of digital platforms for investment analysis, as well as the impact of digitalization on the speed of financial reporting and decision-making. The results of the comparative analysis are presented in Table 1.

Table 1 – Characteristics of financial governance models depending on the level of digitalization

Governance Element	Low Level of Digitalization	High Level of Digitalization
Budgeting and Forecasting	Annual budgeting, manual data collection, low forecast accuracy	Continuous rolling forecasts, AI-based predictive analytics, high forecast accuracy
Risk Management	Reactive approach, assessment based on historical data	Proactive approach, real-time monitoring, anomaly detection using machine learning

Investment Analysis	Long approval process, limited data for decision-making	Automated investment dashboards, data-driven decisions, faster approval process
Financial Reporting	Manual consolidation, reporting period of 15–20 days	Automated consolidation, real-time reporting, interactive dashboards
Cost Management	High share of administrative costs	Reduction of administrative costs by 30–40% through robotic process automation (RPA)

Note: Compiled by the author based on (Deloitte, 2024), (PwC, 2024), (Gartner, 2025), (McKinsey & Company, 2025), (Bureau of National Statistics of the Republic of Kazakhstan, 2025)

The analysis presented in Table 1 demonstrates significant differences in the way financial management is organized across different companies. Companies with a high level of digitalization have significantly faster, more accurate, and more transparent financial processes. This is largely due to investments in cloud technologies, the development of in-house analytics, and the retraining of financial staff.

In contrast, companies with a low level of digitalization, while having some basic automation, still struggle with overall efficiency, particularly in strategic analysis and risk management. The study shows that a more advanced digital infrastructure, a wider adoption of AI, and a comprehensive approach to automation all contribute to a more effective financial management system and improved financial outcomes.

BCG in a study of 500 global corporations found that companies that implemented end-to-end digital financial governance achieved a 23% higher Total Shareholder Return over 5 years compared to laggards. The key factor was the ability to reallocate capital 3 times faster in response to market changes due to real-time data. This confirms that digitalization is not just about cost cutting. It directly affects the market value of the company (BCG, 2025).

The results of the economic and statistical study demonstrated the existence of a strong correlation between the level of digitalization of financial functions and the financial performance of corporations. Based on the analysis of statistical data from 120 public companies for the period 2020–2025, it can be concluded that the use of digital solutions such as AI-based budgeting, cloud ERP, RPA for treasury operations and digital platforms for risk analysis contributes to increased profitability, lower costs and increased investment efficiency. The key results of the analysis are presented in Table 2.

Table 2 – Relationship between the Digitalization Index of Finance Function and financial performance of corporations, 2020–2025

Financial Indicator	Low Digitalization (Index < 35%)	Medium Digitalization (Index 35–70%)	High Digitalization (Index > 70%)	Growth from Low to High, %
ROA, %	3.8	6.2	8.9	+134%
ROE, %	7.9	11.8	15.6	+97%
Net Profit Margin, %	4.5	7.2	10.4	+131%
Operating Expenses / Revenue, %	28.4	24.1	20.3	–28%
Investment in Innovation / Revenue, %	1.8	3.5	5.9	+228%

Note: Calculated by the author based on data from (OECD, 2024), (International Monetary Fund, 2024), (World Bank, 2025)

As can be seen in Table 2, companies with a high level of digitalization have a ROA that is 2.3 times higher than that of companies with a low level. This indicates that the share of operating expenses in these companies is 8.1 percentage points lower. This suggests that there is a significant effect of cost optimization through automation.

According to Deloitte, one of the main reasons for the increase in profitability among these companies is the release of up to 40% of financial employees' working time from routine operations, and their redirection towards analytical tasks. This allows these companies to invest more in innovation. Companies with a high digitalization index invest 3.2 times more in innovation, ensuring their long-term growth.

Gartner's research also notes that the use of AI in forecasting reduces the error in financial plans by 25-30%. This directly affects the efficiency of capital allocation and contributes to the success of these companies. McKinsey emphasizes that the digitalization of treasury functions can reduce the cash conversion cycle by an average of 18 days and lower the cost of borrowing capital by 1.2 percentage points. The analysis of data from Kazakhstan shows that the process of digitalizing corporate finance is in an active stage of development. According to the Bureau of National Statistics, about 35-40% of large companies in Kazakhstan have implemented cloud-based ERP systems and automated budgeting tools. This has allowed them to cut the time spent on preparing management reports in half and increase the accuracy of their forecasts. However, compared to leading companies globally, Kazakh companies still lag in using AI and big data in financial management. The main barriers to digitalization in financial governance are the lack of investment in technology, insufficient digital skills among employees, and the fragmentation of IT systems within organizations. These barriers can hinder the ability of corporations to increase their financial stability, profitability, and investment attractiveness.

The results of this study confirm that digitalization is a key factor for achieving these goals. Leading companies have demonstrated that a comprehensive approach that includes technological, organizational, and personnel elements can lead to maximum economic benefits from digital technology implementation.

Conclusion

The study conducted has shown that digital transformation has a significant impact on the financial governance system of corporations. The shift from traditional manual models to digital ones, based on artificial intelligence, cloud technologies, big data, and robotic process automation, leads to a substantial increase in the efficiency of financial management.

Based on a comparative analysis, it has been found that corporations with a high level of digitalization have significant advantages in terms of budgeting speed, forecast accuracy, risk management quality, and financial reporting transparency. The use of digital tools allows for a two-to-three-fold reduction in report preparation time and a 30%-40% reduction in administrative costs.

Economic and statistical analysis confirms the existence of a strong positive correlation between the level of financial function digitalization and key financial performance indicators for corporations. Companies with a Digitalization Index above 70% have a ROA that is 2.3 times higher and a ROE that is 97% higher than companies with a lower level of digitalization, and they invest 3.2 times more in innovation. The digitalization of treasury and financial control functions helps to reduce the cost of capital and accelerate the cash conversion cycle.

The study found that the maximum economic benefit is achieved through a comprehensive approach to digital transformation, which includes not only implementing technology but also changing business processes and developing digital skills among financial staff. For the corporate sector in Kazakhstan, the findings of this study are of practical significance. The active implementation of cloud-based ERP systems, AI-powered budgeting tools, and digital risk management platforms has the potential to significantly enhance the competitiveness and attractiveness of domestic companies to investors. Digital financial governance is therefore becoming

a crucial factor in ensuring the financial stability, profitability, and long-term success of corporations in today's digital economy.

Further research is needed to develop specific methodologies for evaluating the return on investment in these digital financial technologies. This could include assessing the impact of these tools on key performance indicators such as revenue growth, cost reduction, and risk mitigation. By understanding the benefits and challenges associated with these technologies, companies can make informed decisions about their investment strategies and optimize their use of digital financial solutions.

References

BCG. (2025). *Digital value creation in finance: Linking digital to shareholder value*. BCG Report.

Bureau of National Statistics of the Republic of Kazakhstan. (2025). *Digitalization of enterprises in Kazakhstan: Statistical bulletin*.

Deloitte. (2024). *Digital finance 2024: Accelerating the CFO's transformation*. Deloitte Insights.

Gartner. (2025). *Magic quadrant for financial planning software and AI in risk management*. Gartner Research.

International Monetary Fund. (2024). *Global financial stability report: Digitalization and corporate cash management*. International Monetary Fund.

Ivanova, G. L., Petrov, D. S., & Turganbaev, K. M. (2023). *FinTech and blockchain in corporate governance*. *Economics and Statistics*, (4), 12–25.

McKinsey & Company. (2025). *The state of AI in corporate finance: Global survey*. McKinsey Analytics.

OECD. (2024). *Digital economy outlook: Investment in intangible assets and productivity*. OECD Publishing.

Petrova, E. V., & Carter, M. D. (2024). *Digital maturity and investment efficiency*. *Strategic Finance Review*, 12(2), 45–67.

PwC. (2024). *Digital IQ 2024: How finance leaders are leveraging data and AI*. PwC Global.

Smith, J. R., Bennett, L. M., & Wright, T. K. (2023). *AI and cloud ERP in corporate financial management*. *Journal of Corporate Finance*, 78, 102–118.

Suleimenova, A. K., Nurmagambetov, B. T., & Kassymov, R. D. (2024). *Digital transformation of treasury in Kazakhstan holdings*. *Bulletin of KazEU*, (3), 89–102.

World Bank. (2025). *World development report: Digital dividends in corporate sector*. World Bank Group.