

Aims & Scope (Economics)

Article

ANALYSIS OF FINANCIAL REPORTS ON REVENUES AND EXPENDITURES OF MULTI-PROFILE HOSPITALS IN THE REPUBLIC OF KAZAKHSTAN: REORGANIZATION OUTCOMES, INFLUENCE OF ECONOMIC FACTORS, AND KEY FINDINGS

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Abstract. This article analyzes the impact of restructuring on the profitability of multi-profile hospitals in Kazakhstan. By examining financial reports from 2018 to 2021, changes in profitability indicators before and after reorganization were identified. The results indicate the complex nature of the influence of reforms and economic factors on the financial stability of hospitals.

Keywords: restructuring, profitability, multi-profile hospitals, financial indicators, Kazakhstan, economic efficiency.

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Introduction

The healthcare system remains a pivotal component of the social structure in any country. Amidst ongoing changes, rapid technological advancements, and societal demands, the effectiveness and sustainability of medical institutions have become increasingly relevant. Within this dynamic sphere, the reorganization of multi-profile hospitals plays a significant role in ensuring optimal quality of medical services and resource management.

The purpose of this study is to conduct a comprehensive analysis of financial reports from seven multi-profile hospitals in Kazakhstan for the period spanning from 2018 to 2021. Special emphasis is placed on the impact of reorganization on the profitability and efficiency of these medical institutions. During the analysis, data from four reorganized hospitals were compared with data from three non-reorganized ones, allowing for the identification of trends and differences in their financial performance.

One of the significant characteristics of modern healthcare systems is the pursuit of optimizing and enhancing service quality through the reorganization of medical institutions. Four out of the seven investigated hospitals underwent reorganization, either through merging specialized clinics or affiliating them with urban hospital networks. Such a step implies synergistic benefits, improved efficiency, and resource optimization. In turn, three non-reorganized hospitals served as baseline entities for conducting comparative analysis.

During the research process, open sources providing access to hospitals' financial reports were utilized. The analysis methodology involved comparing revenue and expenditure indicators, evaluating expenditure structure, and identifying changes in profitability indicators.

Ultimately, this study aims to comprehend how the reorganization of multi-profile hospitals has influenced their financial stability and effectiveness. The analysis results will enable conclusions to be drawn regarding the practical changes in hospitals' operations linked to reorganization and the lessons that can be drawn for the further development of the healthcare system.

Literature Review

Optimizing the financial management of multi-profile hospitals formed through consolidation is a pertinent topic within the healthcare realm. Financial aspects play a pivotal role in ensuring the effective and profitable operation of medical institutions, particularly amid reforms and reorganizations. Escalating healthcare costs, driven by population growth, demographic shifts, and advancements in medical technology, necessitate a focus on cost analysis and management. This is because cost information underpins decisions regarding resource allocation and efficiency at systemic and organizational levels for providers, purchasers, and regulatory bodies worldwide (Dong et al., Cylus et al.)

Financial reports of multi-profile hospitals serve as a crucial tool, aiding leadership in making informed decisions to enhance hospital efficiency and profitability. Healthcare in most countries is a tightly regulated sector, and this regulation directly impacts cost determinations—how costs are computed, including the very calculation process, and related concepts, such as the cost object under analysis. For instance, the implementation of Diagnosis-Related Groups (DRGs) as a basis for hospital payment rendered DRGs a primary cost object in the emergency care sector, thus influencing cost calculation and medical practice (Chapman et al.) Financial analysis facilitates the evaluation of revenue and expenditure structures, as well as the identification of trends in the financial state of institutions. Reports may also encompass resource distribution information among medical specialties and divisions, aiding the identification of areas warranting additional attention and resources.

The influence of state-initiated reforms and reorganizations on the operations of multi-profile hospitals is a complex and multifaceted process. Experience from OECD countries demonstrates that hospital consolidation through merging specialized clinics or affiliating with extensive medical networks can lead to synergistic effects and improved coordination of medical services (Maria et al). Such reorganizations help avoid resource duplication and optimize equipment and personnel utilization.

Positive outcomes have been achieved through the implementation of recommendations in financial management for multi-profile hospitals. For instance, optimizing expenditure structures and prioritizing funding for highly effective medical directions have led to increased profitability and service quality (Carlos A.). Authors are motivated to explore various working models of financial protection, such as those where risk-averse individuals care for their health while placing significant value on protection against the financial consequences of rare yet costly events (Smith et al).

Within the context of OECD countries, where healthcare expertise and advanced practices hold significant importance, analyzing financial reports of multi-profile hospitals and their optimization become pivotal aspects in achieving efficiency and sustainability of medical institutions.

In the context of ensuring the realization of recommendations for economic efficiency in the healthcare sector, the development of a typology of constraints acting as barriers to the successful implementation of these recommendations is relevant. In the work by Hauck K. et al., six main categories of constraints are examined, encompassing the structure of the healthcare system, costs of implementing changes, systemic interactions between interventions, uncertainty in cost and benefit evaluations, weak management, and political limitations. Each of these categories is analyzed in terms of possible methods and approaches to consider these constraints from the

perspective of economic efficiency principles, thereby facilitating more effective decision-making by leadership and relevant stakeholders (Katharina Hauck et al).

Methods

To achieve the goal of investigating the impact of reorganization and reforms on the efficiency and profitability of multi-profile hospitals, a specific methodological approach was developed. This section provides a detailed description of this methodology, including the selection of hospitals, data sources, analysis procedures, and result evaluation.

Selection of Medical Organizations and Data Sources

In this study, financial reports of seven multi-profile hospitals for the period from 2018 to 2021 were analyzed. The primary data for analysis were publicly available financial indicators, such as revenues, expenses, and hospital profits.

The sampled hospitals were divided into two groups:

1. Reorganized hospitals (4): This group consisted of three hospitals in Astana and one regional hospital in North Kazakhstan region. These hospitals underwent restructuring through the merging of specialized clinics or affiliating with city or regional hospitals.

2. Non-restructured hospitals (3): This group included two hospitals in Almaty and one hospital in Shymkent that did not undergo any reorganizations.

Analysis Procedures and Result Evaluation

To assess the impact of reorganization and reforms on the profitability of hospitals, the following three criteria were chosen: gross profit margin, operating profit margin, and net profit margin.

Data collection and analysis were carried out using data processing software (Excel) and statistical analysis tools. The analysis results are presented in Tables 1 and 2, which include profitability indicators for each of the studied hospitals.

Table 1. Comparative table of profitability of multidisciplinary hospitals before and after reorganization

Name of the hospital	Before the reorganization	After the reorganization
	Gross profit margin	
Multidisciplinary city hospital No. 1 of Astana	7,38	1,45
Multidisciplinary city hospital No. 3 of Astana	32,99	2,11
Multidisciplinary Medical Center of Astana	18,25	-8,67
Regional hospital of North Kazakhstan region	10,19	-7,93
Operating profit margin		
Multidisciplinary city hospital No. 1 of Astana	0,16	11,74
Multidisciplinary city hospital No. 3 of Astana	-20,83	-4,71
Multidisciplinary Medical Center of Astana	-3,71	-9,46
Regional hospital of North Kazakhstan region	0,00	-11,03
Net profit margin		
Multidisciplinary city hospital No. 1 of Astana	0,16	0,01
Multidisciplinary city hospital No. 3 of Astana	4,70	0,02
Multidisciplinary Medical Center of Astana	17,10	-5,53
Regional hospital of North Kazakhstan region	0,00	0,03

Note: Profitability ratios are calculated using data from hospital financial statements. For calculations “Before the reorganization”, the data of financial statements for 2018 and 2019 were used, “after the reorganization” - for 2021.

Table 2. Comparative table of profitability of multidisciplinary hospitals (non-restructured)

Name of the hospital	Ratio
Gross profit margin	
Central City Hospital of the Administration of the President of the Republic of Kazakhstan	10,0
City Clinical Hospital №5 of Almaty city	-5,3
City hospital No. 1 of Shymkent city	48,6
Operating profit margin	
Central City Hospital of the Administration of the President of the Republic of Kazakhstan	8,4
City Clinical Hospital №5 of Almaty city	-7,4
City hospital No. 1 of Shymkent city	2,1
Net profit margin	
Central City Hospital of the Administration of the President of the Republic of Kazakhstan	10,0
City Clinical Hospital №5 of Almaty city	4,7
City hospital No. 1 of Shymkent city	0,3
<i>Note: Profitability figures are calculated using 2021 hospital financial statements.</i>	

Results

During the analysis of income and expenditure reports of seven multi-profile hospitals over a period of 3 to 4 years, several noteworthy observations were made. The first significant observation is the absence of substantial changes in income and expenditure indicators both before and after hospital restructuring or reorganization. This suggests that reforms or structural changes within organizations may take longer to manifest significant impacts on financial outcomes.

The multi-profile hospitals were divided into two groups: reorganized and non-reorganized, aiming to study the effects of restructuring and reforms on the efficiency and profitability of medical institutions.

1. Reorganized Hospitals

Preliminary analysis of financial reports from 4 reorganized hospitals prior to the restructuring period revealed that the gross profit margin ranged from 7% to 33%, while the operating profit margin was either zero or negative. Only 2 hospitals in Astana exhibited positive net profit margins. However, the analysis of financial reports for 2021, post-reorganization, demonstrated a significant deterioration in profitability indicators. For gross profit margin, 2 out of 4 hospitals recorded negative values. Operating profit margin turned positive for only one hospital in Astana. Net profit margin also decreased, resulting in negative values for one of the hospitals in Astana.

2. Non-Restructured Hospitals

For the group of 3 non-reorganized hospitals, the analysis was conducted based on financial reports from the year 2021, as there was no need to compare profitability indicators before and after reorganization. Results showed mixed values for gross and operating profit margins. However, net profit margin remained positive, ranging from 0.3% to 10% (Table 2).

These findings highlight the complexity of assessing the effects of reforms and reorganization on hospital profitability. The absence of immediate significant changes suggests that such transformations might require more time for their impact to fully materialize. Furthermore, the diverse outcomes observed among the reorganized and non-reorganized hospitals underscore the multifaceted nature of financial management in healthcare institutions.

Contextual Factors

It is important to note that the obtained results require careful interpretation, considering a number of significant factors that influence them. In particular, the following factors should be considered:

- The economic instability in the Republic of Kazakhstan over the last 8-10 years, characterized by heightened volatility of the national currency (KZTenge) due to a series of devaluations (Figure 1).

- High inflation levels (Figure 2) have exerted a significant impact on healthcare financing and the annual tariff revision procedure.

- The disproportionate increase in tariffs for medical services within the Guaranteed Volume of Free Medical Care (GVFMC) and the Compulsory Social Health Insurance (CSHI) system. In general, tariffs increased by 24% from 2018 to 2023, while the inflation rate for just the previous year (2022) was over 20%. A comparative table of tariffs for specific medical services provided in hospital settings is presented in Table 3. The table highlights the most common nosologies – non-communicable diseases and socially significant illnesses that bear the primary burden of morbidity and mortality.

These contextual factors contribute to the understanding that the observed changes in hospital profitability and financial outcomes might be influenced by a range of economic and regulatory circumstances. The interplay between economic fluctuations, inflation, and healthcare financing policies underscores the complexity of evaluating the direct effects of hospital reorganization and reforms on financial indicators.

Table 3. Comparison of 2018 and 2023 tariffs for medical services provided within the GVFMC and CSHI for NCDs and CVD

	Name according to ICD-9/10	ICD-9/10 code	round-the-clock hospital, tariff adult, tenge	
			2018	2023
1	Heart failure	-	289 645,67	384 056,84
2	Angina pectoris	-	167 289,06	221 817,60
3	Insulin dependent diabetes mellitus with coma	E10.0	155 083,05	205 632,99
4	Chronic obstructive pulmonary disease with acute respiratory infection of the lower respiratory tract	J44.0	116 377,15	154 310,74
5	Chronic viral hepatitis B with delta agent	B18.0	442 171,39	586 298,92
6	Tuberculosis of the lungs, confirmed bacterioscopically with or without culture growth	A15.0	75 286,87	99 826,93
7	Rheumatic mitral valve insufficiency	I05.1	118 650,33	157 324,88
Surgical interventions for neoplasms (tumor): tariffs				
1	Local excision of the colon	45.4	299 751,46	397 456,64
2	Lung segment resection	32.3	547 973,29	726 587,37

These factors, including the impact of the COVID-19 pandemic, can significantly influence hospital financial indicators. Therefore, it is essential to consider the contextual factors when interpreting the obtained results.

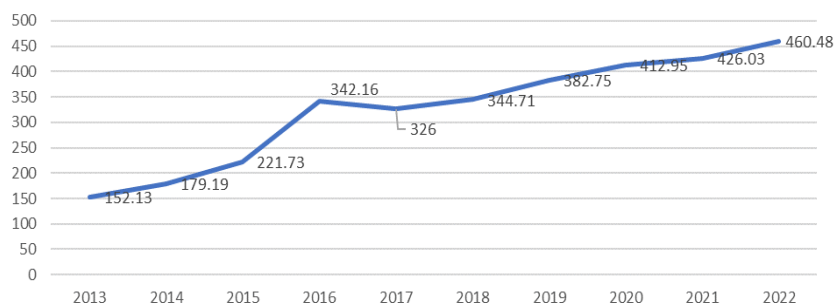


Figure 1. Volatility of the national currency (KZTenge) during the period 2013-2022

Source: National bank of Kazakhstan reports (2013-2022)



Figure 2. Annual Inflation in Kazakhstan (2013-2022)

Source: National bank of Kazakhstan reports (2013-2022)

The analysis of the results has revealed that the reorganization and reforms had varying impacts on the profitability of multi-profile hospitals. The changes in financial indicators are influenced by complexities associated with external economic factors and the impact of the pandemic. For a more accurate assessment of the impact of reorganization, a deeper analysis considering all influencing factors on the financial status of multi-profile hospitals is necessary.

Discussion

Assumptions:

Based on the results obtained, several factors can be assumed to have contributed to the lack of significant changes in income and expenditure reports:

1) **Need for Extended Time for Effects to Manifest:** It is possible that changes in the structure and organization of hospitals require more time for adaptation and full realization of these changes, which may reflect in financial indicators.

2) **Volatility of Local Currency and Inflation:** In the conditions of high volatility of the local currency (Tenge) and the impact of annual corrections on inflation, assessing annual increases in income and expenditure may be challenging, resulting in less noticeable changes in the reports.

3) **Insufficient Tariffs for Medical Services:** The discrepancy between the increase in tariffs and inflation indicates that the growth in expenses for medical services does not align with the overall price dynamics. This phenomenon points to resource deficits provided by the healthcare system.

4) **Limitations of Report Structure and Format:** The existing structure and format of reports may not provide a detailed breakdown of income and expenses, making it difficult to evaluate changes over a specific period.

Conclusion

The analysis of income and expenditure reports of multi-profile hospitals did not reveal significant changes in financial indicators both before and after restructuring or renaming. Despite this, assumptions made based on the results lead to the conclusion that more time is needed for the effects of reforms to manifest, the volatility of the local currency needs consideration, and there might be room for optimization of report structure and format for a more precise analysis of changes in the hospitals' financial position.

An important aspect highlighting the underfunding of the healthcare system is the disproportionate increase in tariffs for medical services in accordance with the annual inflation rate over the past five years. Despite a 24% increase in tariffs, the inflation rate over a similar period reached about 45%. Such a mismatch between tariff increases and inflation indicates that the growth in expenses for medical services does not align with the overall price dynamics. This phenomenon points to resource deficits provided by the healthcare system and may exert additional pressure on the financial position of medical institutions, hindering their ability to provide quality medical services and operate efficiently.

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