

MODERN APPROACHES TO ASSESSING FACTORS AFFECTING THE EFFICIENCY OF COMMERCIAL BANKS

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Abstracts: The efficiency of commercial banks is one of the fundamental indicators determining the stability, competitiveness, and effectiveness of the financial system. In modern conditions, characterized by rapid digital transformation, increasing regulatory requirements, globalization of financial markets, and growing competition from non-bank financial institutions, traditional approaches to evaluating banking performance are no longer sufficient. This article examines modern approaches to assessing factors affecting the efficiency of commercial banks, focusing on financial, operational, technological, managerial, and macroeconomic determinants. The research analyzes theoretical approaches to banking efficiency evaluation and highlights contemporary methods, including financial ratio analysis, Data Envelopment Analysis (DEA), Stochastic Frontier Analysis (SFA), econometric modeling, and integrated efficiency assessment frameworks. The study emphasizes that modern banking efficiency should be evaluated not only through profitability indicators but also through resource utilization effectiveness, risk management quality, digital maturity, corporate governance, and adaptability to market changes. The article concludes that a comprehensive multidimensional approach provides a more accurate understanding of commercial bank efficiency and creates a methodological basis for improving strategic management decisions.

Keywords: commercial banks, banking efficiency, efficiency assessment, profitability, ROA, ROE, NIM, DEA, SFA, operational efficiency, digital transformation, risk management, financial stability.

Introduction

Commercial banks occupy a central position in the financial system by performing the functions of financial intermediation, mobilizing savings, allocating credit resources, facilitating investment processes, and supporting economic development. The efficiency of commercial banks directly affects the stability of financial markets, the accessibility of financial services, and the effectiveness of monetary transmission mechanisms. Therefore, identifying and evaluating the factors influencing bank efficiency has become one of the most important research directions in modern financial economics.

The concept of banking efficiency has evolved significantly over time. Earlier approaches mainly focused on profitability indicators, considering efficient banks as those capable of generating higher profits from available resources. However, modern financial markets demonstrate that profitability alone cannot fully characterize efficiency. A bank may achieve high profitability through excessive risk exposure, aggressive lending policies, or temporary market advantages, which may negatively affect long-term sustainability. Therefore, contemporary approaches consider efficiency as a multidimensional concept combining profitability, operational effectiveness, risk management capability, technological development, and institutional quality.

The transformation of the banking sector under the influence of digital technologies has significantly changed the requirements for efficiency assessment. The development of electronic banking, artificial intelligence, automated credit scoring systems, blockchain technologies, and fintech competition has created new factors affecting bank performance. As a result, modern efficiency evaluation models increasingly incorporate technological and innovation-related indicators alongside traditional financial measures.

The objective of this study is to analyze modern approaches to assessing factors affecting the efficiency of commercial banks and to identify the key determinants influencing banking performance under contemporary economic conditions. The research focuses on theoretical concepts, methodological approaches, and practical factors that determine the efficiency level of commercial financial institutions.

Literature Review

The theoretical foundations of efficiency analysis were initially developed within production economics. One of the most influential contributions was made by Farrell (1957), who introduced the concept of technical efficiency and proposed measuring efficiency by comparing actual performance with an optimal production frontier. His approach became the basis for further development of modern efficiency measurement techniques applied in different sectors, including banking.

The application of efficiency concepts to financial institutions was extensively developed by Berger and Humphrey (1997), who conducted a comprehensive review of banking efficiency research. They emphasized that bank efficiency should be analyzed through cost efficiency and profit efficiency approaches. According to their findings, differences in efficiency among banks are mainly determined by management quality, technological progress, operational strategies, regulatory environment, and market structure.

Berger and Mester (1997) further developed the theoretical framework of banking efficiency assessment by examining variations in financial institution performance. Their research demonstrated that banks operating under similar market conditions may achieve different efficiency levels due to differences in internal management systems, resource allocation strategies, and risk control mechanisms. This conclusion became an important basis for modern studies focusing on internal determinants of banking efficiency.

Traditional approaches to assessing bank efficiency widely use financial performance indicators. According to , profitability indicators such as return on assets (ROA), return on equity (ROE), and net interest margin (NIM) remain essential tools for evaluating management effectiveness and financial outcomes. However, these indicators reflect final results rather than the efficiency of resource transformation processes. Therefore, modern research increasingly combines financial ratios with advanced analytical methods.

A major methodological development in efficiency assessment was the introduction of Data Envelopment Analysis (DEA) by Charnes, Cooper, and Rhodes (1978). DEA is a non-parametric approach that evaluates the relative efficiency of decision-making units based on multiple inputs and outputs. In banking studies, DEA is widely used to analyze how effectively banks transform deposits, labor, capital, and operating expenses into loans, income, and financial services.

Another important methodological approach is Stochastic Frontier Analysis (SFA), developed independently by Aigner, Lovell, and Schmidt (1977) and Meeusen and van den Broeck (1977). Unlike DEA, SFA considers random errors and separates inefficiency from external statistical influences. This feature makes SFA particularly useful for analyzing banking systems influenced by economic fluctuations, financial crises, and regulatory changes.

Modern studies increasingly emphasize the importance of risk management in determining bank efficiency. The Basel Committee on Banking Supervision (2011) highlighted that effective risk management systems are essential for maintaining banking stability and improving long-term performance. Poor credit risk management, inadequate capital planning, and ineffective liquidity control reduce efficiency by increasing operational costs and financial losses.

Dietrich and Wanzenried (2011) examined factors influencing bank profitability and demonstrated that internal characteristics, including capitalization, operational efficiency, and asset quality, significantly affect banking performance. Their findings confirm that efficiency assessment requires analysis of both profitability outcomes and underlying operational factors.

Digital transformation has become another important research direction. According to Vives (2019), technological innovation has fundamentally changed the competitive environment of

banking. Digital technologies allow banks to reduce transaction costs, improve service quality, increase operational speed, and expand customer access. However, digital transformation also requires significant investment and effective strategic management.

Corporate governance is also recognized as an important factor influencing banking efficiency. Adams and Mehran (2012) showed that governance structures affect decision-making quality, risk control mechanisms, and strategic effectiveness of financial institutions. Strong governance contributes to more efficient allocation of resources and better long-term performance.

The reviewed literature demonstrates that modern banking efficiency assessment has moved beyond traditional profitability analysis toward integrated models that consider financial, operational, technological, and institutional factors. Current academic approaches support the use of combined methodologies capable of capturing the complexity of modern banking activities.

Theoretical Approaches to Understanding Commercial Bank Efficiency

The efficiency of commercial banks can be interpreted through several theoretical perspectives. The production approach considers banks as institutions that transform inputs into outputs. Under this approach, deposits, labor resources, technology, and capital are viewed as inputs, while loans, investments, and financial services represent outputs. Efficiency is achieved when banks maximize outputs using minimum resources.

The intermediation approach, developed within financial institution theory, views banks primarily as intermediaries between depositors and borrowers. According to this perspective, efficiency depends on the ability of banks to allocate financial resources effectively while minimizing risks and operational costs. This approach is particularly relevant because lending activity remains one of the main sources of bank income.

The modern approach integrates elements of both perspectives and considers banks as complex financial organizations operating in uncertain environments. Efficiency is therefore determined not only by production capacity but also by adaptability, innovation capability, risk resilience, and strategic management effectiveness.

References

1. Adams, R. B., & Mehran, H. (2012). Bank board structure and performance: Evidence for large bank holding companies. *Journal of Financial Intermediation*, 21(2), 243–267.
2. Aigner, D., Lovell, C. A. K., & Schmidt, P. (1977). Formulation and estimation of stochastic frontier production function models. *Journal of Econometrics*, 6(1), 21–37.
3. Berger, A. N., & Humphrey, D. B. (1997). Efficiency of financial institutions: International survey and directions for future research. *European Journal of Operational Research*, 98(2), 175–212.
4. Berger, A. N., & Mester, L. J. (1997). Inside the black box: What explains differences in the efficiencies of financial institutions? *Journal of Banking & Finance*, 21(7), 895–947.
5. Charnes, A., Cooper, W. W., & Rhodes, E. (1978). Measuring the efficiency of decision making units. *European Journal of Operational Research*, 2(6), 429–444.
6. Dietrich, A., & Wanzenried, G. (2011). Determinants of bank profitability before and during the crisis: Evidence from Switzerland. *Journal of International Financial Markets, Institutions and Money*, 21(3), 307–327.
7. Farrell, M. J. (1957). The measurement of productive efficiency. *Journal of the Royal Statistical Society: Series A (General)*, 120(3), 253–290.
8. Meeusen, W., & van den Broeck, J. (1977). Efficiency estimation from Cobb–Douglas production functions with composed error. *International Economic Review*, 18(2), 435–444.
9. Saunders, A., & Cornett, M. M. (2018). *Financial Institutions Management: A Risk Management Approach*. 9th Edition. New York: McGraw-Hill Education.