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The Impact of Sustainability Dimensions (Environmental, Social and Economic) on the Financial Performance of Commercial Banks: An Analytical Study of a Sample of Banks Listed on the Iraqi Stock Exchange for the Period 2017–2024

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Abstract
This study aims to analyse and measure the impact of sustainability dimensions (environmental, social and economic) on the financial performance of commercial banks, through an empirical study of a sample comprising Three banks listed on the Iraq Stock Exchange during the period 2017–2024. The study relied on the Corporate Social Responsibility (CSR) Disclosure Index as a tool to measure the banks' level of commitment to sustainability dimensions, in addition to a set of financial indicators to measure financial performance. To achieve the research objectives, panel data models were used, namely the total model, the fixed effects model and the random effects model, The Chow test was used to identify the model best suited to the nature of the data. The results showed that the sustainability dimensions, taken together, had a statistically significant effect on improving banks' financial performance, reflecting the importance of adopting sustainable practices in enhancing efficiency and profitability. The results also showed a positive effect of the bank's age on financial performance indicators, indicating the role of accumulated experience in achieving financial stability. The research concludes that a balanced focus on environmental, social and economic dimensions contributes to supporting the financial performance of commercial banks and enhances their ability to survive in a competitive and changing financial environment. In light of this, the study recommended the need to develop sustainable disclosure policies and adopt sustainable banking strategies, as well as to strengthen the capabilities of accounting staff to support the quality of financial reporting and keep pace with the requirements of sustainable investment.

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Keywords: economic dimension, social dimension, financial performance

Introduction

Accounting is no longer limited to measuring profits and losses; its role has expanded to include consideration of environmental costs, social responsibility and sustainability, through the provision of information systems capable of measuring and disclosing environmental, social and economic performance. With the growing global interest in environmental and social issues since the late 20th century, organisations, particularly private sector companies, have been entrusted with the responsibility of contributing to sustainable development by supporting social welfare, preserving the environment and promoting economic stability. In this context, the banking sector is considered one of the most important pillars of the economy; it reflects economic realities and is intricately linked to various sectors, making it a key player in supporting the move towards sustainability. The mounting pressures resulting from the excessive consumption of natural resources have made it necessary to adopt environmental projects and sustainable strategies as a means of achieving sustainable economic growth. Consequently, the concept of sustainable banking has emerged as one of the modern concepts in the financial sector, where banks' adoption of its dimensions (economic, social and environmental) reflects their commitment to social responsibility and their endeavour to strike a balance between profitability and sustainability.

These factors also help to enhance the efficiency and effectiveness of banking operations, highlighting the importance of adopting them as a strategic approach to improving financial performance and ensuring long-term sustainability.

Research problem

The research problem lies in the continued reliance of Iraqi banks on traditional financial reporting, despite growing interest in sustainability and social responsibility and their role in achieving sustainable development and enhancing profitability. The challenge lies in the degree to which banks are able to strike a balance between economic, social and environmental dimensions, and the impact this has on their financial performance and their ability to create sustainable value.

Research Questions

Main Question

To what extent do the dimensions of banking sustainability and social responsibility influence the financial performance of banks listed on the Iraq Stock Exchange?

Sub-questions:

1. What is the impact of the economic dimension of sustainability on financial performance?
2. What is the impact of the social dimension (corporate social responsibility) on financial performance (ROA)?
3. What is the impact of the environmental dimension on financial performance?

Significance of the research

The significance of this research is highlighted by the growing global trend towards the adoption of sustainable accounting and integrated reporting, in line with the guidelines of professional accounting bodies, with the aim of improving the quality of accounting information and enhancing its effectiveness for stakeholders. This trend takes on particular significance in the face of the economic, social and environmental challenges faced by developing countries such as IraqThis necessitates the measurement and disclosure of these impacts alongside financial information. The research also highlights the importance of linking social accounting concepts to the requirements of sustainable development, with a focus on the role of the dimensions of banking sustainability (economic, social and environmental) in achieving a balance between profitability and social responsibility, thereby enhancing banks' financial performance and their ability to create sustainable value in the long term

Research Objectives

This research aims to achieve the following objectives:

1. To analyse the impact of the dimensions of banking sustainability (economic, social, and environmental) on the financial performance of banks.
2. To identify the dimension that has the greatest impact on enhancing financial performance, taking into account the specific characteristics of the Iraqi environment.
3. To measure the relationship between the adoption of banking sustainability and profitability levels.
4. To demonstrate the role of banking sustainability in improving financial efficiency and enhancing sustainable value.

Research Hypothesis

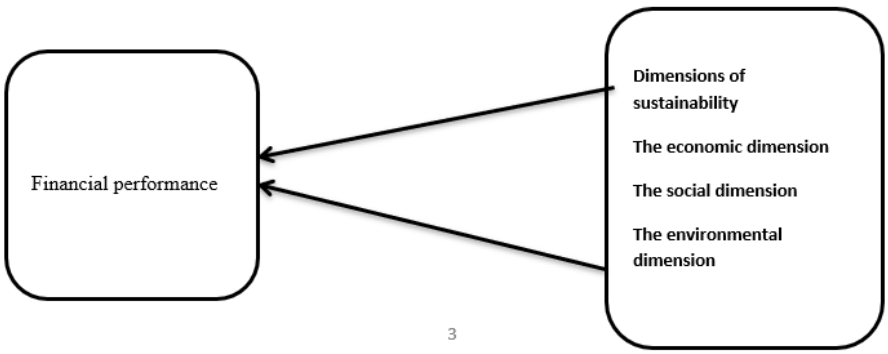
Main Hypothesis

There is a statistically significant relationship and effect of the dimensions of banking sustainability on the financial performance of banks listed on the Iraq Stock Exchange.

Sub-hypotheses

1. There is a statistically significant relationship and effect of the economic dimension of sustainability on the financial performance of banks.
2. There is a statistically significant relationship and effect of the social dimension of sustainability on the financial performance of banks.
3. There is a statistically significant relationship and effect of the environmental dimension of sustainability on the financial performance of banks.

Research outline



Scope of the study

The scope of the study covered a sample of banks listed on the Iraq Stock Exchange, selected at random, for the period 2017–2024.

Research methodology

This research adopts a descriptive-analytical approach to elucidate the nature of the relationship and the impact between the dimensions of banking sustainability and

financial performance in Iraqi banks listed on the Iraq Stock Exchange. This approach was chosen for its suitability in studying economic phenomena and analysing relationships between variables based on quantifiable data and statistical analysis.

Theoretical Framework

First: The Concept of Financial Sustainability

Financial sustainability is a modern concept that has attracted increasing attention in economic and accounting literature, given its pivotal role in ensuring the continuity of economic entities and enhancing their ability to meet future challenges. Sustainability is generally viewed as the prudent use of resources to ensure they are not depleted in the long term, whilst maintaining the economic entity's continuity and its ability to expand its services, thereby ensuring intergenerational equity between present and future generations (Abdul Hafiz and Hussein, 2019: 26–27) [1]. As competition intensifies in the modern business environment, sustainability has become one of the most important sources of competitive advantage; organisations can no longer afford to ignore it, but are instead seeking to integrate it into their operational and financial strategies, with the aim of securing the financial resources needed to renew their activities and strengthen their ability to survive (Abedin & Rahman, 2017: 167) [13]. In this context, sustainability has emerged as a strategic priority in the 21st century, given its direct impact on the performance of economic entities and their ability to adapt to changes in the economic environment, as the success of organisations and their social acceptance have become contingent upon the extent of their commitment to the principles of sustainability and their contribution to achieving stability and development (Abu Samra, 2017: 28). Financial sustainability is particularly important because it is based on a long-term strategic perspective, aimed at enabling economic entities to achieve stable and highly efficient financial performance, whilst retaining the capacity to weather sudden crises without facing financial difficulties. It also contributes to strengthening the financial strength of organisations, enabling them to finance their investments, attract and retain customers, and thereby maximise their market value. There are numerous definitions of the concept of financial sustainability. Brusca (2019: 2) [15] defines it as the ability of an economic entity to manage its financial resources efficiently in both the short and long term, whilst maintaining the level of services provided, by adopting financial policies that ensure the continued provision of these services in a manner that is equitable across generations. Al-Shabibi noted that financial sustainability is defined as an entity's ability to generate sufficient revenue to cover its expenses, thereby ensuring the continuity of its operations and the fulfilment of its future financial obligations. Similarly, the International Public Sector Accounting Standards (IPSAS, 2020: 2640) define long-term financial sustainability as the ability of an economic entity to meet its current and future obligations whilst continuing to deliver services efficiently. Building on these propositions, the researchers define financial sustainability as the ability of an economic entity to manage its financial resources efficiently and effectively in both the short and long term, thereby ensuring it can continue to provide its services without depleting its resources, and striking a balance between the needs of the present generation and the rights of future generations.

Secondly: Dimensions of sustainability

The dimensions of banking sustainability have received considerable attention in recent literature, with many researchers—regardless of their intellectual orientations—agreeing that banking sustainability is based on three main dimensions.

The economic dimension: one of its most fundamental pillars, given its pivotal role in achieving stability and growth within financial institutions. In this context, banks are currently seeking to adopt comprehensive sustainability strategies, which cannot be achieved without embedding economic sustainability across their various structural components. Achieving this type of sustainability is not limited to merely providing resources and capabilities, but extends to continuously improving and developing their quality, thereby enabling banks to offer innovative services and products capable of competing in financial markets (Khudair *et al*., 2023: 351).

Economic sustainability in the banking sector is defined as a bank's commitment to achieving balanced and sustainable economic performance, based on enhancing long-term profitability, achieving sustained growth, and managing resources efficiently and effectively. It is also closely linked to the bank's strategy and operational practices, and to its ability to balance the interests of stakeholders, such as shareholders and society, thereby ensuring the continuity of economic performance over time (Hussein and Halim, 2022: 695) [3].

In light of the above, it can be said that the economic dimension of banking sustainability is a continuous, dynamic process aimed at improving the bank's economic performance by adopting a proactive approach to capitalising on opportunities, and offering innovative products and services, thereby contributing to achieving the highest levels of profitability at the lowest possible cost, whilst simultaneously enhancing competitiveness and long-term sustainability.

To measure the economic dimension of banking sustainability, numerous studies have relied on a set of financial indicators that reflect economic performance efficiency, the most notable of which are (Zahi and Salman, 2021: 4–5) [4]:

- **Market Value Added (MVA):** This is considered an important investment tool that measures the difference between a bank's market value and its book value. A rise in this indicator indicates the bank's ability to create added value for shareholders, whilst a fall reflects a decline in that ability.
- **Earnings per Share (EPS):** This represents the share of profits attributable to each share and is an important indicator of the bank's profitability and its efficiency in utilising its resources to generate returns, whether from operational or non-operational activities.
- **Deposit growth rate:** Deposits are among the most important sources of funding for banks, as they represent a fundamental component of liabilities. Their growth rate reflects the bank's ability to attract financial resources and enhance the sustainability of its banking activities, as well as indicating customer confidence and the stability of the bank's financial position.

The social dimension: The social part is very important part in the sustainable banking because it makes sure humans can

have good standard of living in environment that is balanced and where people can do their economic and social works normal way, while getting their fair share from the resources and services. Actually, this part is about balancing how the current people have their needs met and how to keep trying make life better, but not making the future people rights or resources less.

In this context, the importance of social sustainability in the banking sector stands out as an essential response to contemporary challenges, Banks are seeking to adopt proactive practices aimed at conserving resources and promoting social justice, thereby ensuring sustainable benefits for all sections of society. This requires banks to adopt a comprehensive system of cultural values and standards, alongside the establishment of responsible organisational behaviours that contribute to achieving sustainability goals and strengthening their role in society (Rasmussen, 2011: 23) [16]. The social dimension also emphasises the centrality of the human being in the development process, as the key to achieving economic and social objectives; sustainable development is based on meeting the needs of the present without compromising the ability of future generations to meet their own needs. From this perspective, this dimension is linked to society's capacity for survival and adaptation, through the strengthening of its endogenous capabilities and social organisation, thereby ensuring its self-reproduction at acceptable levels of efficiency and stability (Hussein and Halim, 2022: 696) [3]. Accordingly, the researchers may view the social dimension of banking sustainability as an integrated framework that seeks to strike a balance between banks' social responsibility and the requirements of sustainable development, by supporting the well-being of society, promoting justice, and building relationships based on trust with various stakeholders, thereby contributing to long-term stability and sustainability.

There are several indicators for the social dimension, the most important of which are:

- Corporate Social Responsibility (CSR) Index
- Number of social responsibility programmes
- Ratio of social expenditure to total revenue
- Financial inclusion index
- Number of branches or services provided to underserved areas

The environmental dimension: The environmental dimension is one of the core components of sustainable banking, as it reflects banks' commitment to adopting clear strategies aimed at protecting the environment and conserving natural resources by reducing pollution and minimising the negative environmental impacts resulting from their various activities. Worrying about environment these days is not just for some certain groups. It became an kind of duty that everyone and all organizations must take and banks in particular because they can impact the economy in a strong ways.So, it is the banks that have important task for helping keep the environmental sustainability. This is by not only following environmental rules and laws directly but also with how they manage giving money to a green projects and promoting investments that are sustainable. By doing this banks become more of a financial middle parties which helps to find a balance in both economic growth and taking care of environment. Accordingly, the environmental dimension of sustainability encompasses the environment in which banks operate, including natural resources such as water, air and energyAnd the associated direct and indirect effects (Al-Jubaili, 2020: 8). This dimension also contributes to creating a safer and more sustainable environment, by adopting practices aimed at reducing harmful emissions, reducing pollution, and working to address and rehabilitate environmental impacts. This requires banks to adopt systematic policies and procedures based on continuous improvement, in line with sustainable development requirements and helping to address growing environmental challenges. The researchers believe that the environmental dimension of banking sustainability is represented by banks' commitment to adopting policies and strategies aimed at reducing the environmental impact of their direct and indirect activities, through the rational use of natural resources, supporting green financing, and promoting environmentally friendly practices, ensuring a balance between economic goals and environmental conservation, and serving the interests of current and future generations.

The environmental dimension includes a set of indicators, the most important of which are:

Environmental Disclosure Index (Basic)
Existence of environmental
Policies Environmental initiatives Digital
transformation (reducing paper) Waste management

Third: Financial performance as a concept

Its importance Performance is a fundamental concept in management and economics. It reflects an organization's ability to achieve its pre-planned long-term strategic objectives by relying on a set of specific, precise, and comprehensive criteria, as well as taking into account time and cost factors. Performance is viewed as the result of interaction the resources and capabilities available, together with the policies and procedures adopted within the economic unit. Al-Khatib (2002: 28) [6] defined performance as the economic unit's ability to achieve its objectives through the efficient and effective use of available resources, whilst (Al-Wandawi, 2002: 39) [8] noted that performance represents a comprehensive activity undertaken by the economic unit with the aim of achieving adaptation and harmonisation with its surrounding environment, as this is the basis for its survival and growth, by utilising its resources and capabilities efficiently to achieve its primary objectives. On this basis, performance can be viewed as a direct reflection of how available resources are utilised and invested in a manner that enables the economic unit to achieve its objectives efficiently and effectively, thereby ensuring its continuity and competitiveness in a changing business environment. The researchers therefore argue that financial performance represents one of the most important aspects of an economic entity's overall performance, as it reflects its ability to achieve positive financial results through the optimal use of available financial resources, thereby striking a balance between profitability, liquidity and risk management. Financial performance also reflects the efficiency of management and investment decisions, and is a key indicator for assessing the extent to which the economic entity has succeeded in maximising its value and sustaining its operations in the long term.

Fourth: The Importance of Financial Performance

Banking financial performance plays a pivotal role in economies worldwide, given the vital role that banks play in mobilising financial resources and channelling them towards the most efficient uses. This concept has received widespread attention in management, financial and economic studies, as it reflects banks' ability to manage limited available resources relative to the scale of their liabilities and the intense competition within the banking sector. From this point of view, having high profit and keeping the growth that is sustainable turns into an main goal which is possible only by using resources in best possible way. That is why financial results is considered one important pillar for banks to succeed and survive. (Al-Zubaidi, 2011: 94). The importance of financial performance stems from its role as a comprehensive tool for evaluating the bank's operations from multiple perspectives, as it provides managers with accurate analytical information that helps them identify strengths and weaknesses, and making appropriate decisions to improve performance efficiency. It also helps investors to monitor the bank's activities and understand the nature of its operations, as well as assessing the extent to which it is affected by the surrounding economic conditions, through the analysis of financial data and comparisons over time (Dyerasingh, 2004: 663). Furthermore, financial performance is a key indicator for assessing the extent to which the bank has succeeded in achieving its strategic objectives, as it represents the primary goal that management seeks to achieve through various banking activities. Its importance is also highlighted in meeting management's need to measure performance continuously, thereby enabling the tracking of financial position over time and helping to build more accurate future forecasts that support the strategic planning process (Bradfield *et al*., 2001: 1). In this context, financial performance is expressed through a set of performance metrics that serve as effective tools for motivating management to achieve set objectives and enhancing the efficient use of resources, thereby contributing to the bank's financial stability and sustainable growth (Neale *et al*., 2010: 17).

Fifth: Factors affecting financial performance:

The financial performance of banks is influenced by a range of interrelated factors arising both within and outside the bank; these factors contribute directly and indirectly to determining the level of efficiency, profitability and financial stability. These factors can be classified into internal and external factors, as follows:

Internal Factors Internal factors represent the set of variables that fall within the bank's control and which influence its decisions, activities and financial performance. The most notable of these are:

- **Bank Size**: The size of the bank is considered one of the factors influencing its financial performance, as it is measured by several indicators such as total assets, deposits, capital and the number of branches. Size has a dual effect; ill-considered expansion may lead to the complication of administrative processes and a decline in efficiency, whilst organised growth contributes to enhancing competitiveness and increasing profitability. Numerous studies indicate a positive correlation between a bank's size and its financial performance, provided that the necessary human and organisational resources are available (Al-Khatib, 2010: 51) [9]. Furthermore, when comparing banks, one must take into account similarities in size and the nature of their activities to ensure the accuracy of the results.
- **Financial Efficiency** Financial efficiency is considered a key indicator in assessing banking performance, as it reflects a bank's ability to achieve the highest level of output (revenue) using the least possible amount of input (resources). Financial efficiency forms an important basis for managerial and financial decision-making, as it reflects the extent to which the bank succeeds in utilising its resources efficiently and effectively (Dawson, 2010: 20) [18].
- **Organisational Structure:** The organisational structure provides the framework within which activities and responsibilities are organised within the bank, defining authorities and allocating roles in a way that contributes to the efficient achievement of objectives. The organisational structure influences financial performance by facilitating decision-making, organising operations, and ensuring coordination between different levels of management (vertical and horizontal), thereby enhancing the bank's overall performance (Al-Shamaa and Al-Hamoud, 2007; Al-Wadi and Nazzal, 2010) [10, 11]
- **Liquidity:** Liquidity is showing how much bank can fulfill its quick financial requirements and is taken as an one of key essentials for keeping financial stability. Having enough liquidity aids the banks to escape from losses by not selling hard-to-sell assets in emergency. It even works as a protection for the customer faith while making sure banking services continue without disturbance. (Obaid, 2010: 58).

External Factors

External factors comprise a range of variables that lie beyond the bank's control but have a significant impact on its financial performance; management must monitor and adapt to them. The most notable of these are:

- **Legal and Political Factors:** These consist of the legislative and regulatory framework governing banking activities, as well as the political stability of the country. Banking laws and regulations have a direct impact on the nature of the bank's activities and the scope of its operations.
- **Economic factors:** These include the nature of the prevailing economic system, the level of economic growth, inflation and interest rates, as well as the investment climate and available opportunities. These factors influence the scale of banking activity and its ability to generate profits.
- **Social factors:** These relate to customs, traditions, and the level of financial awareness and literacy among individuals, which influence customers' behaviour and decisions regarding their dealings with banks, and consequently affect the level of demand for banking services.
- **Technology:** Technology has become one of the most significant factors influencing banking performance in the face of rapid digital developments. Information and communication systems help to improve the efficiency of banking operations, facilitate the flow of information, and support decision-making. They also enable banks to gain a competitive advantage by offering advanced

electronic services and enhancing internal and external data integration, thereby improving overall financial performance. (Popa & Cucuí, 2009: 336) [17].

Measuring financial performance is one of the cornerstones of assessing the efficiency and effectiveness of economic units, as it relies on a set of financial indicators that reflect a bank's ability to generate profits, manage its resources efficiently, and maintain its financial stability. The following are the key indicators used in banking studies

First: Profitability Indicators

1. **Return on Assets (ROA)**
   This indicator measures the bank's ability to generate profits from its total assets and is considered one of the most important indicators of operational efficiency.
   ROA = Net Profit / Total Assets
   Note: The higher the ratio, the more efficient the use of assets.
2. **Return on Equity (ROE)**
   Measures the bank's ability to generate returns for shareholders on their investments.
   ROE = Net profit / Equity
   Note: A high ROE indicates management's efficiency in maximising shareholder wealth.
3. **Earnings Per Share (EPS)**
   This represents the share of profit attributable to each share.
   EPS = Net profit / Number of shares
   It is widely used to assess the bank's market performance.
4. **Deposit Growth Rate**
   This reflects the bank's ability to attract financial resources.
   Deposit Growth = Deposits for the current year – previous year / previous year

Liquidity Indicators

Liquidity indicators are essential tools for assessing the financial capacity of banks, as they reflect their ability to meet their short-term obligations as they fall due without being exposed to the risk of financial default. Liquidity is often measured by the ratio of current assets to current liabilities, which is an important indicator of the balance between liquid resources and immediate obligations (Bhunia *et al*. 2011: 270).

Liquidity shows how bank manages to pay its obligations on time allowing its operations to continue without experiencing financial troubles or liquidity concerns that possibly disturb its stability (Mahmoud and Hussein, 2012: 46). In this way, liquidity is seen as one basic element of financial safety since it displays capability of handling cash resources inside the bank. Current assets are mentioned in financial statements as a component part of the working capital, being resources the bank depends on daily for running activities. Putting money into the working capital means observing how current assets go for paying short-term debts, thus helping in reaching a point where liquidity is matched with a profitability. (Drake, 2009: 3).

Cash Liquidity Ratio

Measures the bank's ability to meet its immediate obligations using cash.

(Cash) / (Total Deposits) = Cash Liquidity Ratio

The higher the ratio, the greater the bank's ability to meet its short-term obligations.

Loan-to-deposit ratio

Measures the extent to which the bank relies on deposits to grant loans.

LDR = (Total loans)/(Total deposits)

*Very high = liquidity risk

*Very low = poor use of resources

Cash-to-total-assets ratio = (Cash) / (Total assets) × 100%

This measures the amount of cash relative to the bank's total assets.

Chapter Two

Measuring and Analysing the Impact of Sustainability Dimensions on Financial Performance

Practical Aspects

Analysis of sustainability dimensions (economic, social and environmental dimensions)

To move from the theoretical to the practical aspect of the research, by testing actual and historical financial data compiled from the annual reports of Iraqi banks listed on the Iraq Stock Exchange, represented by eight banks selected at random for the study sample. This chapter aims to analyse the financial performance of the banks in the study sample over the period from 2017 to 2024, thereby providing an accurate understanding of the nature of the changes in financial indicators over time and across the banks under study.

Table 1: Analysis of the sustainability indicators for Baghdad National Bank

EPS	MVA	years
0.12	120	2017
0.14	135	2018
0.16	150	2019
0.13	140	2020
0.17	165	2021
0.22	205	2022
0.29	255	2023
0.33	300	2024

The researchers relied on the annual reports of the banks in the research sample (2017–2024) World Bank reports on financial sustainability and the banking sector

Actual financial data extracted from the banks' annual reports was used, whilst composite indicators were constructed to measure sustainability dimensions (social and environmental) by converting qualitative data into standardised quantitative measures

Table 2: Analysis of the sustainability indicators for the Trade Bank of Iraq (TBI)

EPS	MVA	years
0.25	200	2017
0.27	225	2018
0.30	245	2019
0.60	230	2020
0.34	280	2021
0.40	335	2022
0.46	390	2023
0.50	415	2024

The researchers relied on the annual reports of the banks in the research sample (2017–2024) World Bank reports on financial sustainability and the banking sector

Table 3: Analysis of Gulf Commercial Bank's sustainability indicators

EPS	MVA	years
0.11	100	2017
0.10	88	2018
0.12	97	2019
0.10	90	2020
0.13	130	2021
0.17	150	2022
0.19	170	2023
0.26	225	2024

The researchers relied on the annual reports of the banks in the research sample (2017–2024) World Bank reports on financial sustainability and the banking sector

The data reflects a clear upward trend in financial sustainability indicators (economic, social and environmental) for all banks in the study sample over the period (2017–2024), However, this trend was not uniform; rather, it revealed a marked disparity in performance between banks, allowing for an accurate comparison to identify the most efficient and least performing banks. The Trade Bank of Iraq (TBI) is the best performer during the study period, as evidenced by the highest EPS (0.25–0.50), strong growth in deposits (DG%) reaching 14%, and high performance in sustainability dimensions ((SOC and ENV). All of this indicates high efficiency in financial management, an ability to maximise shareholder wealth, and a clear strategy in adopting sustainability standards, which in turn reflects the bank's involvement in foreign trade financing operations and support Relatively strong governance and early adoption of sustainability and governance practices, whilst Bank of Baghdad demonstrates above-average performance through improvement and stability across all indicators, with MVA rising from (120–300) SOC reached 92 in 2024, reflecting a balanced performance between profitability and sustainability, which indicates sound management and a gradual growth strategy. Gulf Commercial Bank, however, ranked lowest across most indicators, with an MVA ranging from 80 to 190 and the EPS was relatively low, with relative weakness in SOC and ENV. This is attributed to poor operational efficiency and limited investment. The results also indicate a clear disparity in the level of financial sustainability Among the banks in the study sample, TBI topped the list in terms of financial performance and sustainability, whilst Gulf Commercial Bank ranked lowest. This disparity is attributed to differences in management efficiency and the level of adoption of sustainability practices, as well as varying abilities to adapt to economic changes. The results also revealed a strong positive correlation between financial performance indicators (MVA and EPS) and sustainability dimensions (SOC and ENV), confirming that sustainability is no longer merely an ethical commitment, but has become a strategic factor in enhancing market value and achieving sustainable growth.

Analysis of financial performance

Table 4: Analysis of the financial performance indicators of Al-Ahli Bank of Baghdad

DG %	ROE %	ROA %	Syears
5	10.5	1.1	2017
6.2	11.8	1.2	2018
6.8	13.5	1.3	2019
4.5	9.8	0.9	2020
7.5	12.5	1.2	2021
10	15.8	1.5	2022
11.5	18.5	1.8	2023
12.8	20.5	2.1	2024

Table 5: Analysis of the financial performance indicators of the Iraqi Trade Bank

DG %	ROE %	ROA %	years
6	15.5	2	2017
7	17	2.2	2018
8	18.5	2.4	2019
5.5	14	1.8	2020
9	18	2.3	2021
11.5	21.5	2.8	2022
13	24	3.2	2023
14	26	3.5	2024

Table 6: Analysis of the financial performance indicators of Gulf Commercial Bank

DG %	ROE %	ROA %	years
4	8	0.8	2017
4.8	9	9	2018
5.2	10.5	1	2019
3.8	7.5	0.7	2020
5.8	9.5	0.9	2021
7.2	11.5	1.1	2022
8.5	13	1.3	2023
9	14	1.4	2024

An examination of the financial performance metrics of Baghdad National Bank indicates a general increase, demonstrating a slow enhancement in both operational effectiveness and profit margins, with ROA, ROE, and EPS showing continuous growth during the years 2017 to 2019. This positive trend is linked to a rise in lending activities and better management of financial resources, along with a relatively stable economic setting. Nevertheless, in 2020, there was a noticeable downturn across all metrics due to the adverse effects of the COVID-19 pandemic, which resulted in decreased profits and a slowdown in deposit increase, highlighting the bank's transition to a more conservative approach and an elevation in cash reserves to alleviate risks. At the beginning of 2021, the institution entered a phase of recuperation, with profitability metrics beginning to rise once again, spurred by improved economic conditions and heightened credit demand, while LDR ratios continued to increment steadily, indicating a controlled growth in lending. From 2022 to 2024, the bank achieved a level of financial maturity, posting its peak profitability levels, which can be attributed to effective management and enhanced asset

quality, although this was accompanied by a relative reduction in liquidity ratios due to the allocation of funds towards investments and loans, illustrating a strategy that balances profitability with liquidity.Meanwhile, the Iraqi Trade Bank was the most efficient within the sample, with indicators showing high and stable levels of profitability, as ROA, ROE and EPS achieved strong growth rates during the period 2017–2019, This is due to the nature of its business, which is linked to foreign trade finance and institutional support, enabling it to achieve high returns. In 2020, the bank was relatively affected by the global crisis (the COVID-19 pandemic), with profitability indicators declining; however, the decline was limited compared to other banks, demonstrating its financial resilience. A temporary rise in liquidity ratios was also observed as a result of a conservative policy. From 2021 onwards, the bank quickly regained its momentum, with all indicators rising significantly as a result of increased financing operations and an improved business environment. During the period 2022–2024, the bank achieved record levels of profitability, coinciding with a rise in the LDR, reflecting significant expansion in lending, whilst liquidity ratios declined gradually as a result of the efficient use of funds, reflecting high efficiency in the management of assets and liabilities and maximisation of value for shareholders. Regarding the Middle East Bank, it experienced a steady state with gradual progress, as metrics indicated a slow enhancement from 2017 to 2019, showcasing a cautious banking strategy centered on managing risks. In 2020, the metrics were evidently influenced by the economic context related to the COVID-19 pandemic, leading to a drop in profits and a deceleration in deposit increases, while liquidity ratios increased, signaling a careful stance. With the beginning of recovery in 2021, the metrics began to rise slowly again, as performance improved due to a boost in lending activities; nevertheless, this advancement remained lower than that of larger banks. From 2022 to 2024, a moderate growth trajectory continued, with both profitability and loan-to-deposit ratios seeing a gradual rise, indicative of limited growth in lending. This trend was coupled with a slight drop in liquidity, suggesting a careful equilibrium between risk and returns. Gulf Commercial Bank's results also demonstrated a relatively low efficiency compared to other institutions, as metrics started at weak points during the 2017 to 2019 period, followed by a slight improvement that reflected constrained operational activities. In 2020, the bank reached its lowest performance levels due to the direct effects of the economic turmoil associated with the COVID-19 pandemic, seeing a considerable decline in profitability, while liquidity ratios increased due to reduced lending. As recovery began in 2021, the metrics began to gradually improve, but the pace of growth remained sluggish in comparison to other banks. During the period 2022–2024, the relative improvement in profitability and deposit growth continued; however, LDR ratios remained relatively low, indicating limited credit expansion, whilst liquidity ratios remained relatively high, reflecting the bank's focus on risk mitigation at the expense of higher returns. Meanwhile, Kurdistan International Bank exhibited a balanced pattern of growth, achieving a gradual improvement in profitability indicators during 2017–2019, as a result of moderate expansion in banking activity. In 2020, the bank was affected by the economic crisis linked to the COVID-19 pandemic, with profitability indicators falling whilst liquidity ratios rose, reflecting a cautious approach similar to that of other banks. With the onset of recovery in 2021, indicators returned to a gradual rise, driven by improved economic activity and increased demand for banking services. During the period 2022–2024, the bank recorded stable growth in profitability and LDR ratios, reflecting a measured expansion in lending, alongside a gradual decline in liquidity, indicating the bank's transition from a phase of conservatism to one of balancing profitability and risk management. Overall, the researchers note that all banks were negatively affected in 2020 as a result of global economic conditions; however, the degree of impact varied according to management efficiency and the nature of operations, with the Iraqi Trade Bank proving the most adaptable, whilst the Gulf Commercial Bank was the most affected. It is also noted that the post-2021 period saw a general recovery across all banks, albeit with varying rates of growth, reflecting differences in banking strategies and the extent to which expansionary policies and sound financial management were adopted.

Measurement and Analysis of the Impact of Sustainability Dimensions on Financial Performance for the Period (2017–2024)

Before commencing the measurement and analysis of the relationship between sustainability dimensions (economic, environmental and social), it is essential to test the stationarity of the variable data using certain methods, including the Augmented Dickey–Fuller (ADF) test. We also tested for multicollinearity among the independent variables using the VIF test, as well as through graphical analysis. We will also test for the presence of autocorrelation among the residuals using the Durbin–Watson test to ensure there is no autocorrelation, which often accompanies time series data, and where semi-annual data was used to extract the descriptive statistics of the data. A multiple regression model was also used to examine the effect, as well as to measure the relationship between the study variables (independent and dependent) by determining the correlation coefficients and regression parameters.

The following standard models may be adopted to conduct the statistical analysis in a manner that achieves the research objectives and tests its hypotheses based on the standard models using the Eviews 13 software

$$Y = B_0 + \beta\_i\, Xi + ei \ldots \quad (1)$$

Where:

〖：B〗_0 is the estimated coefficient of the constant term

〖 B〗_i, i=1…n are the estimated coefficients of the independent variables

First: Variables of the Standard Model The model consists of independent variables and dependent variables

Dimensions of sustainability (independent variables)

Dimensions of sustainability (X1 market capitalisation EX, X2 earnings per share R)

Financial performance indicators (dependent variables).

(Y1: deposit growth rate, Y2: return on assets, Y3: return on equity)

Standard methods used (conceptual framework)

Time Series Analysis

Financial and economic phenomena are subject to constant change, which necessitates the study of time series to identify this change; furthermore, time series analysis serves as the statistical tool used to forecast the phenomenon under study, This leads specialists to attach the utmost importance to time series analysis using modern scientific methods. Time series must be analysed to ensure the stability of the variables under study and to determine their statistical characteristics, and then to begin estimating and testing the relationship between the variables studied for the research sample, as follows.

Testing the stationarity of time series: There is an assumption underlying regression theory that uses time series in estimation. This assumption is that time series possess the property of stationarity. Time series analysis is an important step prior to estimating and testing the relationship between variables, in order to ensure the stationarity of these variables and to understand their statistical properties. A time series is said to be completely stationary if the following conditions are met.

- Stability of the mean over time

$$E(Y_t) = U$$

- Stability of the variance over time

$$Var(Y_t) = \mathrm{E}(Y_t - U)^2 = \sigma^2$$

- The covariance between any two values of the same variable depends on the time lag (K) between the two values, rather than on the actual value of time, and is calculated using the following formula:

$$Y_k = [(Y_t - \mu)(Y_{t+K} - \mu)]$$

Tests indicate that the time series are non-stationary, i.e. they lack the property of stationarity; consequently, the regression between the variables in the time series is often spurious. There are certain indicators of spurious regression, including a high coefficient of determination (R^2) and a significant increase in the statistical significance of the estimated parameters (T)(F). One of the most important modern tests used to determine the stationarity of time series is the unit root test, which yields more accurate results. The most commonly used method for testing data affected by unit roots is the augmented Dickey–Fuller test. These tests are explained below.

Table 7: Testing the stationarity of the study variables using the Augmented Dickey-Fuller test

Unit Root Test Results Table (Adf)						
Null Hypothesis: the variable has a unit root						
At Level						
DG	**EPS**	**MVA**	**ROA**	**ROE**		
-3.8834	-3.0567	-2.1919	-5.0561	-2.4439	t-Statistic	With Constant
0.0085	0.0444	0.2142	0.0005	0.1416	Prob.	
***	**	n0	***	n0		
-3.8554	-2.9527	-2.1604	-4.9975	-2.4692	t-Statistic	With Constant & Trend
0.0346	0.1657	0.4876	0.0029	0.3384	Prob.	
**	n0	n0	***	n0		
-0.4463	-1.4272	-0.5910	-1.2121	-0.5761	t-Statistic	Without Constant & Trend
0.5101	0.1392	0.4502	0.1995	0.4567	Prob.	
n0	n0	n0	n0	n0		
At First Difference						
d(DG)	**d(EPS)**	**d(MVA)**	**d(ROA)**	**d(ROE)**		
-4.8454	-6.5878	-4.3534	-9.1030	-5.0484	t-Statistic	With Constant
0.0009	0.0000	0.0027	0.0000	0.0006	Prob.	
***	***	***	***	***		
-4.6488	-6.4896	-4.2456	-5.6350	-4.9459	t-Statistic	With Constant & Trend
0.0065	0.0001	0.0149	0.0009	0.0035	Prob.	
***	***	**	***	***		
-4.9508	-6.7476	-4.4497	-9.3275	-5.1703	t-Statistic	Without Constant & Trend
0.0000	0.0000	0.0001	0.0000	0.0000	Prob.	
***	***	***	***	***		

Source: Results from the statistical software (Eviews 13)

Based on the results of the Augmented Dickey-Fuller (ADF) test that you provided, here is the analytical interpretation of the data in Arabic:

The aim of this test is to determine whether the variables are stationary or suffer from a unit root problem. The null hypothesis (H0) states that 'the variable is non-stationary'. If the Prob value is less than 0.05, we reject the null hypothesis and consider the variable to be constant.

Analysis of results at the level (At Level)

When we tested the data in its original form (without any modifications), the results were as follows:

Constant variables

- **ROA (Return on Assets):** highly significant at the 1% significance level.
- **DG (Earnings Growth):** significant at 1% (with constant) and 5% (with trend).
- **EPS (Earnings per Share):** significant only when there is a constant level and a significance level of 5%.

Non-stationary variables

ROE (Return on Equity): Non-stationary (probability value greater than 0.05).

MVA (Market Value Added): Non-stationary (probability value greater than 0.05).

Based on the results of the Augmented Dickey-Fuller (ADF) test that you provided, here is the analytical interpretation of the data in Arabic:

The aim of this test is to determine whether the variables are stationary or suffer from a unit root problem. The null hypothesis (H0) states that 'the variable is non-stationary'. If the probability value (Prob) is less than 0.05, we reject the null hypothesis and consider the variable to be stationary.

Analysis of results at the 'At Level' stage

When we tested the data in its original form (without adjustments), the results were as follows:

Stationary variables

1. ROA (Return on Assets): Highly stationary at the 1% significance level.
2. DG (Dividend Growth): Stationary at a significance level of 1% (with a constant) and 5% (with a trend).
3. EPS (Earnings per Share): Stationary only when a constant is present and at a significance level of 5%.

Non-stationary variables

1. **ROE (Return on Equity):** Non-stationary (Prob value greater than 0.05).
2. **MVA (Market Value Added):** Non-stationary (Prob value greater than 0.05).
3. Analysis of results at the first difference
4. When taking the first difference of the variables (i.e. subtracting the previous value from the current one), we observe that:
5. All variables without exception (ROE, ROA, MVA, EPS, DG) became completely stationary at a significance level of 1% (Prob = 0.000).
6. This means that the variables which were suffering from the unit root problem at the first level had their problem resolved at the first difference.

Table 8:

درجة التكامل	الحالة عند الفرق الأول	الحالة عند المستوى	المتغير
I(1)	Voiced	Unvoiced Voiced	ROE
I(0)	Voiced	Voiced	ROA
I(1)	Voiced	Unvoiced Voiced	MVA
I(1)	Voiced	Mostly unvoiced Voiced	EPS
I(0)	Voiced	Voiced	DG

Measuring the correlation between sustainability factors and financial performance

Commitment to sustainability dimensions is no longer merely an ethical choice or a social facade for companies; rather, it has become a fundamental pillar that directly influences financial performance. Investment in environmental, social and governance aspects helps to reduce risks and build investor confidence, which has a positive impact on profitability and growth indicators.

From a statistical perspective, through this analysis we aim to go beyond mere theoretical observation to accurately measure the strength of this relationship. We use advanced tools ranging from simple correlation coefficients to determine the trend, to autoregressive distributed lag (ARDL) models that consider the specific nature and volatility of financial data. The aim is to provide empirical evidence demonstrating that sustainability is not a 'cost', but rather a 'value' that increases return on assets (ROA) and return on equity (ROE), and ensures sustainable profits in a fast-changing economic world.

Table 9:

DG	EPS	MVA	ROA	ROE	
0.8591805701618261	0.382862541472956	0.9749907476044859	0.2151860416013134	1	ROE
0.1640285486843279	0.007000656696531852	0.1854181718238558	1	0.2151860416013134	ROA
0.8613706592123182	0.430383618404957	1	0.1854181718238558	0.9749907476044859	MVA
0.409872553486993	1	0.430383618404957	0.007000656696531852	0.382862541472956	EPS
1	0.409872553486993	0.8613706592123182	0.1640285486843279	0.8591805701618261	DG

The figures in the table demonstrate that there is an exceptionally strong correlation between management efficiency and a company's market value; this is clearly evident in the very high correlation coefficient between return on equity and value added, which stands at 0.975. This result is statistically close to perfect correlation, and from an economic perspective, it is evidence that the market does not hesitate to raise the company's value added as soon as the return on equity improves. This evidence is reinforced by another strong correlation between DG's profit growth and return on equity (0.859) and MVA (0.861), which numerically demonstrates that the company uses its dividend policy as a strategic tool to enhance its market value and reassure investors.

On the other hand, the table provides evidence that earnings per share (EPS) is associated with a 'fairly strong' positive relationship with market value (MVA) at a rate of 0.430 and with return on equity at a rate of 0.382, which is economically explained by the fact that investors view earnings per share as a positive factor, but not the primary driver of value compared to overall efficiency indicators. The most notable finding from the table is the weak correlation of return on assets (ROA) with the other variables, reaching its lowest levels with earnings per share (EPS) at 0.007 and market value added (MVA) at 0.185. This numerical discrepancy demonstrates a disconnect between the company's ability to manage its physical assets and market perceptions and shareholder expectations, which economically suggests that the company's current growth and value are not driven by the efficiency of its operating assets, but rather depend on other factors such as financial leverage or market reputation.

Description of study variables

Table 10:

DG	EPS	MVA	ROA	ROE	
7.745833	0.261250	201.6667	1.979167	14.60000	Mean
7.150000	0.215000	185.0000	1.450000	13.75000	Median
14.00000	0.900000	415.0000	9.000000	26.00000	Maximum
0.500000	0.100000	88.00000	0.700000	7.500000	Minimum
3.327746	0.176298	92.22169	1.677726	5.043636	Std. Dev.
0.158998	2.125160	0.770865	3.213154	0.606227	Skewness
2.564147	8.216213	2.797926	14.02104	2.536859	Kurtosis
0.291090	45.27410	2.417763	162.7606	1.684545	Jarque-Bera
0.864551	0.000000	0.298531	0.000000	0.430731	Probability
185.9000	6.270000	4840.000	47.50000	350.4000	Sum
254.6996	0.714863	195611.3	64.73958	585.0800	Sum Sq. Dev.
24	24	24	24	24	Observations

The statistical characteristics of the variables indicate stability and balanced growth in financial performance, with the arithmetic means pointing to sound management efficiency in generating returns for shareholders, with an average return on equity (ROE) of 14.6%, which has had a positive and significant impact on market confidence, as evidenced by the average Market Value Added (MVA) of 201.6 units. Economically, we note a gap between the return on equity and the return on assets (ROA), which recorded a low average of 1.97%, suggesting that the company relies primarily on financial leverage and market reputation rather than on the operational efficiency of its physical assets.

Statistically, the standard deviation of the MVA variable revealed natural fluctuations in market valuations, whilst normality tests (Jarque-Bera) showed that the variables (ROE, MVA, DG) follow a normal distribution, with p-values exceeding 0.05, lending them high reliability for forecasting and parametric analysis. On the other hand, the sharp values of kurtosis and skewness in the variables (ROA and EPS) appeared as evidence of outliers or exceptional extreme values in some periods of the study, causing them to deviate from the normal distribution. Overall, these data reflect a company with strong market appeal and a stable dividend policy, despite some challenges regarding the consistency of return on assets and net earnings per share.

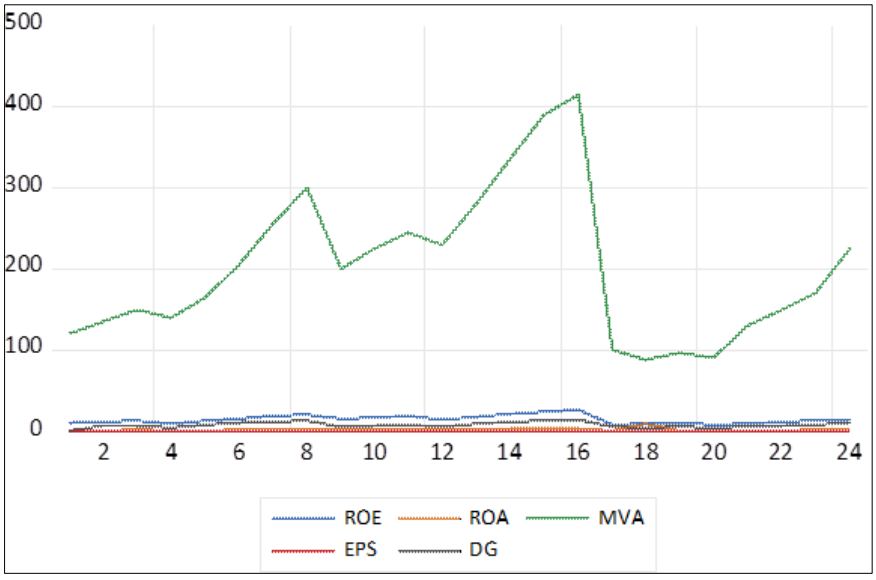


Fig 1: Measuring the impact of return on equity on financial performance indicators

Table 11:

Dependent Variable: ROE				
Method: Least Squares				
Date: 05/05/26 Time: 23:40				
Sample: 1 24				
Included observations: 24				
Prob.	**t-Statistic**	**Std. Error**	**Coefficient**	**Variable**
0.0000	6.026543	0.629850	3.795816	C
0.0000	9.661917	0.005236	0.050594	MVA
0.3684	-0.920366	1.525465	-1.403985	EPS
0.3946	0.870109	0.143606	0.124953	DG
14.60000	Mean dependent var		0.954006	R-squared
5.043636	S.D. dependent var		0.947107	Adjusted R-squared
3.285654	Akaike info criterion		1.159957	S.E. of regression
3.481997	Schwarz criterion		26.90999	Sum squared resid
3.337744	Hannan-Quinn criter.		-35.42785	Log likelihood
1.473393	Durbin-Watson stat		138.2807	F-statistic
			0.000000	Prob(F-statistic)

The results of the regression analysis using the ordinary least squares (OLS) method reveal a highly robust explanatory model illustrating the relationship between market capitalisation and fiscal policies on the one hand, and return on equity (ROE) as the dependent variable on the other. From a more academic perspective, we find that the model possesses exceptional explanatory power, with an adjusted R-squared value of approximately 94.7%, meaning that the selected independent variables successfully explain most of the variation in shareholder returns. Furthermore, the model's F-statistic, with a significance level of 0.000, confirms that the model as a whole is valid for use and statistically sound. As for the individual impact of the variables and their economic significance, the Market Value Added (MVA) variable stands out as the sole key factor with high statistical significance (with a coefficient of 0.050 and a p-value of 0.000), This demonstrates, in numerical terms, that any increase in a company's market value is immediately and directly reflected in the return available to shareholders, indicating a strong correlation between share performance on the stock market and internal management efficiency. On the other hand, the results reveal an interesting paradox, as both earnings per share (EPS) and profit growth (DG) failed to have a significant impact on return on equity (for p-values greater than 0.05), which economically suggests that investors and the company focus on creating long-term market value added (MVA) as a key measure of success, rather than on short-term profitability figures or immediate dividends.

With regard to the diagnostic aspect of the model, the Dorbin-Watson statistic (1.47) indicates some stability in the residuals, which reinforces confidence in the accuracy of these results. Overall, this statistic paints a picture of a company where shareholder wealth, market satisfaction and capital value are intrinsically linked, whilst other variables (such as dividend yield) remain mere secondary details in light of the clear dominance of market capitalisation over the primary drivers of return.

Measuring the impact of return on assets on financial performance indicators

Table 12:

Variable/Statistic	Coefficient / Value	Std. Error	t-Statistic	Prob.
C	1.358572	0.956635	1.420156	0.1710
MVA	0.003606	0.007953	0.453436	0.6551
EPS	-0.864247	2.316924	-0.373015	0.7131
DG	0.015377	0.218113	0.070502	0.9445
R-squared	0.041123	—	—	—
Adjusted R-squared	-0.102709	—	—	—
S.E. of regression	1.761779	—	—	—
Sum squared residuals	62.07730	—	—	—
Log likelihood	-45.45844	—	—	—
F-statistic	0.285911	—	—	—
Prob(F-statistic)	0.834985	—	—	—
Durbin-Watson stat	1.994433	—	—	—
Mean dependent var	1.979167	—	—	—
S.D. dependent var	1.677726	—	—	—
Akaike info criterion	4.121537	—	—	—
Schwarz criterion	4.317879	—	—	—
Hannan-Quinn criterion	4.173627	—	—	—
Included observations	24	—	—	—

An analysis of return on assets (ROA) presents a completely different picture from previous models, with the results revealing a very weak relationship between market value, financial policies and the efficient use of assets within the company. From an academic perspective, we find that the adjusted coefficient of determination (adjusted R-squared) was negative (-0.102), which is a strong statistical indicator that the model is 'weak' and that the independent variables—market value added (MVA), earnings per share (EPS) and earnings growth (DG)—have no explanatory power for changes in return on assets. Furthermore, the F-statistic test, with a very high significance level (0.834), confirms that the model as a whole is not statistically significant. Upon examining the economic and demographic details behind these figures, it becomes apparent that all independent variables recorded probability values (Prob) well above the significance level of 0.05, implying that none of them has a statistically significant effect on return on assets. This clearly points to an 'operational disconnect'; the company's market growth or cash distributions are not linked to the effective use of its resources and physical assets. This may be because the company possesses substantial assets that are not being utilised optimally, or because the drivers of profitability in this company rely more on market speculation and reputation than on the actual productivity of its assets.

Although the Durbin-Watson statistic (1.99) is ideal and confirms that the residuals are free from autocorrelation, this does not alter the fact that this model is unsuitable for predicting operational performance. Consequently, it can be argued that this company's return on assets is influenced by external or internal factors not included in the model (such as operational efficiency, technology or sector conditions), and that market value and financial indicators for shareholders are in one camp, whilst asset management efficiency is in a completely different camp.

Results of the analysis of the standard deviation equation for the independent variable (sustainability dimensions) and the dependent variable (financial performance)

Table 13:

Statistic	ROE	ROA	MVA	EPS	DG
Mean	14.60000	1.979167	201.6667	0.261250	7.745833
Median	13.75000	1.450000	185.0000	0.215000	7.150000
Maximum	26.00000	9.000000	415.0000	0.900000	14.00000
Minimum	7.500000	0.700000	88.00000	0.100000	0.500000
Std. Dev.	5.043636	1.677726	92.22169	0.176298	3.327746
Skewness	0.606227	3.213154	0.770865	2.125160	0.158998
Kurtosis	2.536859	14.02104	2.797926	8.216213	2.564147
Jarque-Bera	1.684545	162.7606	2.417763	45.27410	0.291090
Probability	0.430731	0.000000	0.298531	0.000000	0.864551
Sum	350.4000	47.50000	4840.000	6.270000	185.9000
Sum Sq. Dev.	585.0800	64.73958	195611.3	0.714863	254.6996
Observations	24	24	24	24	24

The standard deviation (Std. Dev.) analysis in this table reflects the level of stability and the risks associated with each financial performance and market value variable, providing a deeper insight than mere arithmetic averages. From an academic and statistical perspective, we observe significant variation in levels of dispersion. The added market value variable recorded the highest standard deviation of 92.22, which economically indicates this variable's high sensitivity to market fluctuations and trading shocks, making it the variable most exposed to risk and uncertainty in this group. In contrast, accounting variables such as earnings per share (EPS) show a very small standard deviation (0.17), which provides a 'human' element of reassurance to the investor that the company maintains a relatively stable and disciplined performance in its net profits, free from sudden spikes.

As for return ratios, the standard deviation of return on equity (ROE) of 5.04 reflects acceptable and manageable volatility relative to its average, whilst return on assets (ROA) shows a dispersion of 1.67, a figure which, although small, compared to the already low average return (1.97), indicates sharp relative fluctuations in operational efficiency. This disparity in standard deviation values paints a comprehensive picture of a company characterised by considerable stability in its financial policies and distributions (DG), yet facing volatile headwinds in its market valuation and asset efficiency, which requires the decision-maker to balance the calm of the accounting figures against the noise of market fluctuations.

Summary of Statistical Analysis Results

1. Data consistency and stability: Automatic Data Feeder (ADF) tests revealed a 'mixed' nature of the data; whilst indicators such as return on assets (ROA) exhibited a degree of intrinsic stability at their original levels, other indicators such as return on equity (ROE) and market value added (MVA) required taking the 'first difference' to become stable, which statistically implies that the company is undergoing dynamic growth phases that make its current values historically linked to its past values.

2. Correlations between performance and the market: The correlation matrix revealed a rare and strong 'organic relationship' between return on equity (ROE) and market value added (MVA) at 97.5%, which provides concrete evidence that the financial market intelligently interprets management's efficiency in maximising shareholder wealth and responds immediately by raising the company's market capitalisation, reflecting the high level of mutual trust between management and investors.

3. The explanatory power of the shareholder model: The regression model of return on equity successfully explained approximately 95% of the changes in shareholder returns, with market value added emerging as the strongest driver of this return, whilst earnings per share (EPS) and dividend growth (DG) remained secondary variables, indicating that investors in this company are seeking long-term 'strategic value' rather than immediate cash returns.

4. Stability and risk characteristics: Through descriptive statistics, the standard deviation of earnings per share and

dividend growth stands out as evidence of the company's 'cautious and balanced' policy to reassure shareholders, whilst the high standard deviation of market capitalisation (92.22) the nature of the surrounding market risks, which is a natural variation in the business environment that combines the stability of accounting policy with the volatility of investor sentiment in the markets.

5. Distribution normality and data purity: The Jarque-Bera test confirmed that the key variables (such as ROE and MVA) follow a normal distribution, lending a touch of 'statistical integrity' to the results and making them suitable for constructing reliable future forecasts, despite the presence of some outliers in asset efficiency that reflect exceptional moments in the company's history.

Conclusions and Recommendations

First: Conclusions

1. The organic relationship between market value and shareholder returns: The analysis concludes that there is a near-perfect 'positive' correlation between Market Value Added (MVA) and Return on Equity (ROE), at a rate of 97.5%. Statistically, this confirms that the financial market does not view the company merely as accounting figures, but rather values management's efficiency in maximising shareholder wealth in the immediate term, which makes MVA the truest and most accurate reflection of management's success in gaining investors' trust.

2. The phenomenon of 'operational decoupling' (asset gap): The results revealed a crucial finding: the model's limited ability to explain return on assets (ROA), as the relationship between market value and distributed profitability with this return was virtually non-existent. Economically, this suggests that a company's appeal in the stock market and the rise in its market value do not necessarily depend on the productive efficiency of its physical assets, but may instead be driven by external factors, market reputation, or high financial leverage.

3. Dividend policy as a reassurance tool rather than a driver of value: Although there is a strong relationship between dividend growth (DG) and market value, the regression model showed that it has no significant independent effect on return on equity (ROE). We conclude from this that shareholders view dividends as a 'reassuring signal' regarding the company's stability and continuity, rather than as a primary driver of high returns, as capital value remains the key driver of investment decisions.

Secondly: Recommendations

1. **Bridging the gap between operational performance and market value:** It is recommended that the asset management strategy (ROA) be reviewed to improve operational efficiency, as market confidence (MVA) cannot be relied upon in the long term without a solid productive base for the assets. Management must convert 'idle assets' into income-generating assets to ensure sustainable growth and avoid any sudden price corrections should investor confidence wane.
2. **Enhancing transparency on sustainability and 'value creation':** As market value added is the main driver of returns, it is advisable to adopt a more comprehensive disclosure policy regarding non-financial sustainability aspects. Strengthening human, environmental and governance aspects will enhance market value, the only variable that figures have shown to increase shareholder returns in a genuine and sustainable manner.
3. **Improving the capital structure and mitigating leverage risks:** Given the significant disparity between the average return on equity (14.6%) and the return on assets (1.9%), it is recommended that the capital structure be reassessed. This disparity indicates a heavy reliance on debt to boost shareholder returns, an approach that carries high risks in times of crisis. The recommendation here is to strike a balance between debt and equity financing to ensure share security and stable financial performance in the long term.

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