



Integrated Multidimensional Assessment of Enterprises: A Mindray Medical Case Study

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Abstract. Current enterprise valuation methodologies often exhibit limitations through excessive reliance on financial metrics. This study proposes a multidimensional assessment framework integrating both financial and non-financial factors for comprehensive performance evaluation. Using Mindray Medical as an empirical case, this paper employs a mixed-methods approach, combining quantitative DuPont analysis of financial statements with qualitative assessment of strategic initiatives. Results demonstrate robust alignment between Mindray's superior financial returns and non-financial strengths—technological innovation leadership and global resource orchestration capabilities. The convergence of these dimensions confirms sustainable competitive advantages and a positive growth trajectory. This research establishes that integrated performance analysis delivers superior enterprise valuation insights versus siloed approaches, with particular significance for capital-intensive, innovation-driven sectors like MedTech.

Keywords: Financial and non-financial factors; DuPont analysis; Mindray Medical.

1 Introduction

The assessment of enterprise value is undergoing profound changes driven by global competition and concepts of sustainable development. The traditional financial evaluation system emphasises quantitative indicators such as profit, cash flow, and debt-to-asset ratio [1]. While this system can intuitively reflect a company's short-term operating results, it struggles to reveal the companies' long-term competitiveness, ability to fulfil social responsibility, and resilience to risk. Practice also demonstrated that relying solely on financial indicators may lead to distortions in evaluation and even obscure systemic risks. Since the 1950s, modern financial analysis models like DuPont and EVA focused on shareholder interests, neglecting enterprises' social value. In the 1990s, Kaplan and Norton's Balanced Scorecard introduced non-financial dimensions, shifting evaluations to a multi-dimensional. Later, SRI, ESG, ISO 26000, GRI standards, and SDGs advanced non-financial evaluation standardisation. Governments and firms now recognise sustainable development disclosure, with global governance increasingly institutionalising non-financial factors [1]. The non-financial attributes of an

enterprise, such as its innovation capability, governance structure, environmental performance, and brand reputation, have gradually become key dimensions for measuring value [2]. In this context, establishing a comprehensive enterprise evaluation system driven by the coordinated interplay of financial and non-financial factors is not only an inevitable trend in theoretical research but also a necessity for practical decision-making.

Currently, it can be seen that the enterprise value assessment system is undergoing a paradigm reconstruction from financial dominance to multi-dimensional integration. Taking the medical and health industry as an example, its technology-intensive nature, strong regulatory environment, and sensitivity to social responsibility make it challenging for a single financial indicator to fully capture the true value of the company. This paper focuses on Mindray Medical, a leading medical device company in China, and attempts to construct a comprehensive evaluation framework suitable for high-tech industries through case evidence, providing new insights for addressing the complex evaluation dilemma of financial and non-financial factors.

2 Basic Situation of the Medical Device Industry and Mindray Medical

2.1 Medical Device Industry

The medical device industry is closely related to human life and health. In recent years, affected by factors such as population ageing structure, health and safety awareness, the medical device industry has become one of the fastest-growing industries in the world. At this stage, high-performance medical devices have become one of the key areas of development and breakthrough in China, bringing a broad market to the domestic medical device industry [2]. Since 2020, China has progressively strengthened its medical infrastructure by establishing ICU wards, fever clinics, and expanding capacity in large public hospitals. Alongside the optimisation of epidemic prevention measures, the government has emphasised enhancing medical resource allocation and accelerating new healthcare infrastructure initiatives. These developments have significantly elevated the importance of innovation in the medical device industry [3]. China's medical device manufacturing industry registered 32,632 licensed producers by end-2022, including 20,640 Class I device filings, 14,693 Class II licenses, and 2,509 Class III licenses, demonstrating the sector's graded regulatory structure [2]. National healthcare special bond issuance grew from ¥3.65 trillion (2022) to ¥3.8 trillion (2024). The 14th Five-Year Plan's emphasis on public hospital modernisation has generated construction demand nationwide, subsequently increasing demand for high-end medical equipment. Concurrently, China's medical device improvements, coupled with declining insurance expenditures and implemented bulk drug procurement, address ageing population challenges. Progressive policy implementation has advanced import substitution, benefiting competitive domestic medical device firms [3].

2.2 Mindray Medical

Established in 1991 and listed on the Shenzhen Stock Exchange (ChiNext) in 2018, Shenzhen Mindray Bio-Medical Electronics Co., Ltd. has become the foremost medical device manufacturer in China. Its operations span three critical domains—patient monitoring, in-vitro diagnostics (IVD), and medical imaging—leveraging advanced R&D to optimise clinical workflows. As a result of sustained sectoral expertise, Mindray now ranks as the nation's top and a world-leading medtech solutions provider [4]. Mindray Medical International, headquartered in Shenzhen, China, operates a global network comprising 43 overseas subsidiaries across over 30 countries, complemented by 20 domestic branches and over 40 regional offices in China. The company has established an integrated global R&D ecosystem, supported by nine dedicated research and innovation centres worldwide [5]. Mindray Medical has achieved transformative growth through a dual-track strategy integrating organic development and strategic mergers and acquisitions, enabling systematic business diversification. This approach precipitated three fundamental shifts: a transition from single-product offerings to comprehensive product lines; technological advancement from mid-to-low-end equipment to high-end medical solutions; and strategic expansion from domestic operations to global market presence. Consequently, Mindray has solidified its position as China's preeminent and internationally leading medical technology provider, actively reshaping the global Medtech landscape [3].

This paper selects Mindray Medical as a research sample because this company's development path shows the industry benchmark. More importantly, as a listed company in China and a leading company in the medical device industry, Mindray's second-hand information on its development process is easy to obtain. In Mindray Medical's latest 2024 annual report, facing challenges such as uneven distribution of medical resources and intensified ageing, the company regards "digital intelligence transformation" as a key point, which is in line with the current global development trend [6]. Mindray Medical has also disclosed sustainable development information every year since 2018, and integrated its disclosure content through the sustainable development system in 2021, which could benefit the research significantly [1].

3 Financial Analysis of Mindray Medical Based on DuPont Analysis

3.1 DuPont Analysis

The DuPont Analysis is an established financial evaluation framework that originated by the U.S. DuPont Company employs a systematic set of financial metrics to assess a firm's financial performance and profitability while identifying operational shortcomings. Its core formula decomposes return on equity (ROE) into three interdependent components: net profit margin, total asset turnover, and equity multiplier, expressed as formula (1) below

$$ROE = \text{Net Profit Margin} \times \text{Total Asset Turnover} \times \text{Equity Multiplier} \quad (1)$$

This decomposition reveals that a company's profitability is influenced by multiple factors: the net profit margin reflects revenue efficiency relative to costs, total asset turnover measures operational efficiency in utilising assets to generate sales, and the equity multiplier indicates the extent of financial leverage through debt. The DuPont Analysis offers a structured, multi-layered view of financial performance by decomposing ROE into its component parts. This allows management to obtain deeper insights into operational trends. Such clarity improves the scientific rigour of decision-making by identifying specific areas needing improvement. Ultimately, it helps formulate targeted strategies to promote sustainable and balanced corporate growth [7].

3.2 Component Calculation and Analysis

Net profit margin. The formula for net profit margin and relevant financial data of Mindray Medical are presented as formula (2) and Table 1:

$$\text{Net Profit Margin} = (\text{Net Income} / \text{Revenue}) \times 100\% \quad (2)$$

Table 1. Mindray Medical 2020-2024 profit margin analysis [6, 8-11].

Component (Million Yuan)	2020	2021	2022	2023	2024
Net Income	6660	8004	9610	11578	11740
Revenue	21026	25270	30366	34932	37625
Net Profit Margin	31.68%	31.67%	31.65%	33.14%	31.20%

Mindray Medical demonstrated consistent revenue growth from ¥21026M (2020) to ¥37625M (2024), reflecting a 79% cumulative expansion. Despite this significant top-line increase, net profit margins remained remarkably stable within a narrow 31.20%-33.14% band. The 2023 margin peak (33.14%) coincided with accelerated revenue growth, suggesting operational efficiency gains during expansion. Margin compression to 31.20% in 2024 occurred despite continued revenue growth, indicating potential strategic reinvestment or pricing adjustments. Notably, the company maintained over 31% margins throughout the period, demonstrating strong pricing power and cost discipline even while nearly doubling revenue over five years.

Total asset turnover. The formula for total asset turnover and relevant financial data of Mindray Medical are presented as formula (3) and Table 2:

$$\text{Total Asset Turnover} = \text{Revenue} / \text{Average Total Assets} \quad (3)$$

Table 2. Mindray Medical 2020-2024 total asset turnover analysis [6, 8-11]

Component (Million Yuan)	2020	2021	2022	2023	2024
Revenue	21026	25270	30366	34932	37625

Average Total Assets	33306	38103	46745	47940	56644
Total Asset Turnover	63.13%	66.32%	64.96%	72.87%	66.42%

Mindray's revenue growth was supported by progressive asset base expansion, with average total assets increasing from ¥33306M to ¥56644M (70% growth). Total asset turnover exhibited notable volatility, improving from 63.13% (2020) to a peak 72.87% in 2023 – coinciding with both maximum revenue growth and record net margins. This 2023 efficiency surge suggests optimal scaling of existing assets. The 2024 retreat to 66.42% turnover (despite revenue growth) indicates new assets weren't yet fully productive. Crucially, turnover consistently exceeded 64% throughout the period, demonstrating superior capital efficiency relative to industry benchmarks.

Equity multiplier. The formula for equity multiplier and relevant financial data of Mindray Medical are presented below as formula (4) and Table 3:

Equity Multiplier = Average Total Assets / Average Shareholders' Equity (4)

Table 3. Mindray Medical 2020-2024 equity multiplier analysis [6, 8-11]

Component (Million Yuan)	2020	2021	2022	2023	2024
Average Total Assets	33306	38103	46745	47940	56644
Average Shareholders' Equity	23290	26968	32000	33346	40758
Equity Multiplier	1.43	1.41	1.46	1.44	1.39

Mindray maintained conservative financial leverage throughout 2020-2024, with the Equity Multiplier ranging narrowly between 1.39-1.46. This stability occurred despite significant asset base expansion. The 2022 leverage peak (1.46) corresponded with accelerated asset growth, likely funding strategic investments. Subsequent deleveraging to 1.39 by 2024 – achieved while growing assets, demonstrates disciplined capital management. Crucially, leverage remained below the MedTech sector average, reflecting a low-risk financing strategy. This conservative approach preserved balance sheet flexibility while supporting expansion, with shareholder equity consistently comprising over 70% of total assets.

ROE. As shown in Table 4, Mindray's return on equity (ROE) increased from 28.60% in 2020 to 34.72% in 2023 before falling back to 28.80% in 2024, a trajectory that reveals key operational dynamics. The peak performance in 2023 was driven by synergistic improvements, with a record net profit margin (33.14%) offset by an optimised asset turnover ratio (72.87%). Conversely, the contraction in 2024 reflects the simultaneous pressures across all components of the DuPont analytical framework: declining net margins, declining asset efficiency, and strategic deleveraging. Despite the volatility, the five-year average ROE of 30.37% significantly exceeds the MedTech industry benchmark (typically 18%-22%), demonstrating its structural competitive advantage. The synergistic alignment of the 2024 metrics shows that the company is repositioning

itself through a prudent strategy to balance short-term profitability with sustainable long-term growth objectives.

Table 4. Mindray Medical 2020-2024 ROE analysis [6, 8-11]

Component	2020	2021	2022	2023	2024
Net Profit Margin	31.68%	31.67%	31.65%	33.14%	31.20%
Total Asset Turnover	63.13%	66.32%	64.96%	72.87%	66.42%
Equity Multiplier	1.43	1.41	1.46	1.44	1.39

4 Non-Financial Analysis of Mindray Medical

4.1 Digital Intelligence Transformation

Mindray recognises the "impossible triangle" in healthcare – the inherent challenges of achieving high-quality medical services, improving operational efficiency, and controlling costs at the same time. This dilemma is being redefined through continuous digital and intelligent transformation. As a long-time pioneer in medical technology innovation, Mindray launched the integration of AI in medical devices as early as 2015, launched AI-enhanced devices, and established an integrated framework of "device-IT-AI". The company has a dedicated team to track the development of the underlying AI model [6].

After the advent of ChatGPT in 2023, Mindray took the lead in promoting digital and intelligent transformation in the medical field, and in 2024 developed a dedicated large language model "Genesis" for intensive care scenarios. In the context of the deep restructuring of the industry, digital intelligence technology is reshaping clinical workflows at an unprecedented speed and catalysing medical device innovation. Mindray will use this transformation as a strategic fulcrum to continue to consolidate its leadership position in China's medical technology sector by 2025, promote global market expansion through technological innovation, and promote the equitable distribution of medical resources [6].

4.2 Internationalisation

Mindray Medical began its internationalisation exploration in 2000. Initially entering the global market, the company faced challenges such as insufficient international experience, a single-product structure, and limited capabilities due to a lack of experience and market uncertainties. In the early stage, Mindray's products had low brand awareness, while the international market was nearly monopolised by established enterprises with long histories and high recognition, creating significant pressure for the company amid such market uncertainties. To address these challenges, Mindray built resources by acquiring advanced overseas technologies and accumulating international

experience, bundled resources by absorbing strategic concepts from multinational corporations and learning target countries' regulations, and utilised resources by entering low- to mid-end markets and upgrading overseas cooperation models. These efforts successfully opened overseas markets, achieving expansion-driven growth, with foreign revenue accounting for nearly 50% of total revenue by 2005 [2].

As Mindray's internationalisation process deepens, pressures such as trade barriers and differences in institutional culture have gradually emerged. Its strategy of entering the low-end market has also led to problems such as insufficient high-end technology reserves and product functional homogeneity. In response, Mindray has built a resource network through cooperation with international enterprises and academic institutions, integrated resources by acquiring companies like Datascope, and enhanced its global adaptability by promoting the localisation of teams and operations, thereby gradually entering the high-end market. In 2015, it achieved a technological breakthrough with the launch of high-end colour Doppler ultrasound. Over the years, Mindray has adopted a global competition strategy: developing emerging markets and building international management platforms to construct resources; prioritizing high-end technological needs, insisting on R&D innovation, and strengthening talent development to bundle resources; and improving global R&D management systems and building global supply chains to enhance globalization capabilities. These measures have enabled multiple products to lead in overseas markets, breaking through high-end and emerging markets and entering high-end customer segments, with revenue in the Asia-Pacific region exceeding \$1.1 billion by 2022 [2].

5 Conclusion

This research finds that combining financial and non-financial elements enables a more thorough and precise evaluation of corporate performance. Through applying this multi-faceted framework to Mindray Medical, the study validates its utility. The DuPont analysis of financial reports discloses the company's financial soundness, profitability, and operational effectiveness, while the qualitative assessment of strategic measures like digital intelligence transformation and internationalisation reveals intangible advantages driving long-term growth. This two-pronged approach provides an overall perspective, affirming Mindray's strong capabilities and positive development path.

The research has implications for both academia and practice. Academically, it expands the theoretical basis of corporate performance evaluation, emphasising the necessity of including non-financial dimensions. Practically, it offers a practical tool for identifying strengths and weaknesses, facilitating more insightful decision-making and strategic planning. Additionally, the study challenges conventional single-dimensional assessment methods, advocating a transition to more comprehensive evaluation models.

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