

Research on the financial performance of leading optical module enterprises under the AI computing power prosperity cycle: a case study of Company W

Huan Yang, Baowei Chen, Kaixiang Fei*

School of Economics and Management, Zhujiang College of South China Agricultural University,
Guangzhou, China

*Corresponding Author. Email: yh_galea@qq.com

Abstract. Based on Company W's financial data from 2023 to 2025, this paper analyzes its financial performance during the AI computing power prosperity cycle from four dimensions: profitability, operating capability, solvency, and growth. The study finds that, driven by AI computing power demand, the company's revenue grew from CNY 10.718 billion in 2023 to CNY 38.240 billion in 2025, net profit attributable to parent company shareholders achieved explosive growth, the gross margin rose from 30.45% to 39.72%, the weighted average Return On Equity (ROE) increased by 27.26 percentage points, and net operating cash flow grew from CNY 1.897 billion to CNY 10.981 billion, indicating a substantial improvement in earnings quality. DuPont analysis shows that the improvement in net profit margin was the core driver of ROE growth. However, the company also faces challenges such as high customer concentration, accounts receivable expanding rapidly with revenue, inventory impairment risk, and industry cyclical fluctuations. Accordingly, this paper recommends optimizing the customer structure, strengthening working capital management, and continuing to lay out next-generation technologies, with a view to providing a reference for optical communication enterprises to achieve high-quality and sustainable development amid technological change.

Keywords: AI computing power, industry prosperity cycle, financial performance, DuPont analysis, optical module enterprises

1. Introduction

1.1. Research background

The release of ChatGPT at the end of 2022 ignited a global wave of investment in AI computing power infrastructure. As the core component of data center interconnection, high-speed optical modules show demand that is highly positively correlated with AI capital expenditure. The data-communication-grade high-speed optical module market has subsequently entered a stage of blowout growth, and the global optical device industry is shifting from the traditional telecom cycle to a super growth cycle driven by AI computing power. This industry upswing is transmitted directly to the revenue growth, earnings improvement, and cash

flow optimization of optical module enterprises through paths such as surging orders, price transmission, and higher capacity utilization, exerting a systematic impact on corporate financial performance. Taking Company W as the research object and based on its financial data from 2023 to 2025¹, this paper analyzes the changing characteristics and driving mechanisms of corporate financial performance during the AI computing power prosperity cycle from four dimensions—profitability, operating capability, solvency, and growth—aiming to reveal the inherent logic by which industry dividends are converted into micro-level corporate financial performance.

1.2. Research significance

AI technological change has a nonlinear impact on the financial performance of enterprises along the industry chain, but existing literature mostly focuses on macro-industrial-scale estimates and trend assessments, lacking in-depth deconstruction of the financial transmission mechanism at the micro-enterprise level. Taking Company W as a case, this paper systematically analyzes the changing patterns and internal drivers of its four-dimensional financial indicators—profitability, operating capability, solvency, and growth—during the AI computing power prosperity cycle, which helps reveal the transmission path of "technological shock—industrial prosperity—corporate financial performance" and provides micro-level evidence and theoretical supplementation for the financial analysis framework of cyclical technology manufacturing enterprises.

As the world's leading high-speed optical module enterprise, Company W's financial performance is strongly indicative of the prosperity of the AI industry chain. By decomposing the enterprise's core financial indicators, this paper identifies its operating advantages and potential risks during the computing power upcycle [1], which helps upstream and downstream enterprises along the chain optimize strategic positioning and resource allocation, provides data support for investors to assess the operating quality and financial resilience of computing-power-sector targets, and also offers reference for industry regulators to grasp the financial risk characteristics of emerging technology industrialization and formulate targeted policies.

1.3. Literature review

1.3.1. Research on prosperity cycles and corporate financial performance

The impact of industry prosperity cycles on corporate financial performance is an important topic in the field of financial management. Existing research shows that leading enterprises in high-prosperity growth tracks, with competitive advantages such as economies of scale, pricing power, and customer stickiness, can often obtain excess returns significantly above the industry average during industry upcycles [2]; at the same time, however, overexpansion may lead to overcapacity and the accumulation of operating leverage risk. Against the background of accelerated deployment of AI computing power infrastructure, some scholars have begun to pay attention to the phased boost of this technological wave to the revenue growth and profitability of technology manufacturing enterprises [3], but existing literature mostly remains at the industry-level trend judgment, lacking systematic empirical testing of the mechanism and degree to which prosperity dividends are transmitted to the micro-enterprise financial system.

1.3.2. Research on the dupont analysis system and financial performance evaluation

In the field of financial performance evaluation methods, scholars at home and abroad have established a relatively mature system of theoretical tools. The DuPont analysis method, by decomposing return on equity (ROE) into the product of three dimensions—net profit margin, total asset turnover, and equity multiplier—

¹ W Company. W Company 2024 and 2025 Annual Financial Final Accounts Report [R]. Domestic: W Company, 2026.

can effectively identify the core drivers of changes in corporate profitability and has been widely applied to the evaluation and attribution analysis of comprehensive corporate financial performance [4]. Factor analysis and the Economic Value Added (EVA) evaluation method provide useful supplements from the perspectives of comprehensive value creation and shareholder wealth. However, existing financial evaluation research mostly focuses on traditional manufacturing or consumer goods industries, and its applicability to optical communication manufacturing enterprises with frequent technological iteration and distinct cyclical attributes—especially under extreme prosperity fluctuations—remains relatively weak.

1.3.3. Research on the optical communication industry and Company W

Regarding special-topic research on the optical communication industry, institutions such as LightCounting, Huatai Securities, and Sinolink Securities have continuously tracked the global optical module market², focusing on technology evolution paths (the iteration logic from 400G to 800G and then to 1.6T) and the evolution of the global competitive landscape, and generally believe that AI computing power demand has become the core engine driving the growth of the high-speed optical module market at present and for the next three years [3]. As for Company W, some broker research reports have conducted descriptive analyses of its revenue growth and capacity expansion, but most are limited to short-term performance commentary or industry prosperity judgments, lacking systematic financial performance evaluation from multiple dimensions such as earnings quality, operating efficiency, solvency safety margin, and cash flow health, as well as horizontal comparison and in-depth attribution analysis with comparable peers [5].

1.3.4. Literature commentary

In summary, previous research has mainly proceeded from three aspects: first, exploring the general laws of the impact of industry prosperity cycles on corporate financial performance at the macro level; second, constructing and improving analytical tools and frameworks for financial performance evaluation from a methodological perspective; and third, describing the development trends of the optical communication market and the revenue profiles of leading enterprises from the industry-tracking level. However, existing research has the following obvious deficiencies: first, few studies deeply combine industry prosperity cycles with micro-level corporate financial data to conduct systematic multidimensional financial performance evaluation; second, there is a lack of attribution analysis and dynamic deconstruction of the financial driving mechanism of optical module enterprises under the special technological change cycle of AI computing power; third, for Company W, a global optical module leader, no research has comprehensively analyzed its financial performance during the computing power upcycle from the four dimensions of profitability, operating capability, solvency, and growth. The innovation of this paper lies in: based on Company W's financial data from 2023 to 2025³, using the DuPont analysis system and multidimensional financial indicators to systematically deconstruct the changing characteristics and driving logic of corporate financial performance during the AI computing power prosperity cycle, so as to fill the above research gaps and provide a new research perspective and empirical evidence for the financial analysis of cyclical technology manufacturing enterprises.

² Huatai Securities Research Institute. Leading High-Speed Optical Module Target: AI Computing Power Drives Rapid Growth in Revenue and Gross Profit [R]. Shanghai: Huatai Securities, 2026. And Guojin Securities Research Institute. Leading Optical Module Enterprise: Proactive Layout of Next-Generation Optical Interconnect Technology to Hedge Against Cyclical Risks [R]. Shanghai: Guojin Securities, 2026.

³ W Company. W Company 2024 and 2025 Annual Financial Final Accounts Report [R]. Domestic: W Company, 2026.

1.4. Research methods

This paper comprehensively applies three types of methods—literature research, case analysis, and comparison and trend analysis—each with a clear application scenario: the literature research method is used to sort out industry cycles, theories related to DuPont financial performance, and industry research reports, building the "AI computing power prosperity—corporate finance" analytical framework; the case analysis method selects the global optical module leader Company W as a single case, combining industry cycle characteristics to decompose the linkage logic between corporate finance and business; and the comparison and trend analysis method vertically compares the four-dimensional financial indicators from 2023 to 2025 and quantitatively decomposes the ROE drivers through the DuPont model to identify the enterprise's financial advantages and potential risks during the prosperity cycle. The three methods mutually corroborate one another, forming a complete analytical system.

2. Overview and theoretical foundations

2.1. Definition and core characteristics of the AI computing power prosperity cycle

The AI computing power prosperity cycle refers to a stage of investment boom in computing power infrastructure jointly driven by breakthroughs in artificial intelligence algorithms, the rapid expansion of large model parameter scales, and the large-scale implementation of application scenarios. Compared with traditional Internet infrastructure investment cycles, the AI computing power prosperity cycle presents the following distinctive characteristics: first, the steepening of demand growth—demand for computing power from AI training clusters rises exponentially, directly driving the explosive growth of demand for high-speed interconnection optical modules; second, the acceleration of technological iteration—the iteration cycle of optical module rates from 400G to 800G, then to 1.6T and even 3.2T, has been greatly shortened, with product life cycles becoming shorter but value per unit increasing; third, the broadening of the industry chain driving effect—it drives not only upstream industries such as optical chips, electrical chips, and optical devices, but also profoundly influences the overall architecture design of data centers.

2.2. Overview and development history of Company W

Founded in 2005, Company W specializes in the R&D and manufacturing of high-speed optical modules, with products covering AI intelligent computing and telecom transmission. Overseas revenue accounts for over 90%, and its core customers are leading North American cloud vendors. The company laid out 800G and 1.6T high-end optical modules in advance; in 2025, its global market share of 800G-and-above products exceeded 40%, ranking first in the industry. Relying on full-process in-house manufacturing capability and continuous R&D investment, the company has fully benefited from the upward cycle of the AI computing power industry, achieving high-speed revenue and profit growth over the past three years and building dual competitive barriers of technology and customers.

2.3. Theoretical framework for financial performance evaluation

2.3.1. Financial transmission theory

Financial transmission theory explains the inherent path by which external industry prosperity is transmitted step by step to micro-level corporate financial indicators: the expansion of industry demand first drives growth in corporate orders and revenue, with economies of scale diluting fixed manufacturing and period expenses; product structure upgrading raises unit gross margin and simultaneously improves profitability indicators;

revenue expansion drives synchronous changes in operating assets such as receivables and inventory, affecting asset turnover efficiency; the continuous inflow of operating cash flow optimizes the capital structure and reduces debt pressure; and stable earnings and cash flow support R&D and capacity expansion, forming a positive transmission closed loop of "industry prosperity → revenue growth → earnings improvement → cash flow improvement → continued expansion". Conversely, when industry prosperity declines, risks such as shrinking demand, product price cuts, and inventory impairment are also transmitted in reverse along the same chain, causing phased pressure on corporate earnings and cash flow. Relying on this theory, this paper analyzes the transmission mechanism of high AI computing power prosperity to Zhongji Innolight's four-dimensional indicators of profitability, operating capability, solvency, and growth [2].

2.3.2. The four-in-one financial performance evaluation framework

To comprehensively and objectively evaluate Zhongji Innolight's financial performance, this paper constructs a "four-in-one" financial performance evaluation framework:

First, the profitability dimension measures the enterprise's profit level; core indicators include gross margin, net profit margin, and weighted ROE, relying on the DuPont system to decompose the sources of earnings growth;

Second, the operating capability dimension measures asset operation efficiency; core indicators include accounts receivable turnover, inventory turnover, and total asset turnover, reflecting the enterprise's supply chain and capital management level;

Third, the solvency dimension measures the safety margin of long- and short-term debt; core indicators include the asset-liability ratio, current ratio, and quick ratio, judging the robustness of the enterprise's financial structure;

Fourth, the growth capability dimension measures long-term development potential; core indicators include revenue growth, net profit growth, and operating cash flow growth, reflecting the sustainability of enterprise growth under industry dividends.

Through cross-validation of the four-dimensional indicators, the true financial performance of the enterprise during the AI computing power prosperity cycle is fully presented.

3. In-depth analysis of Company W's financial performance under the AI computing power prosperity cycle

3.1. Profitability analysis

3.1.1. Revenue and profit scale

In terms of scale, the AI computing power cycle has driven rapid growth in Company W's performance. In 2023, the company's revenue was CNY 10.718 billion with net profit attributable to parent company shareholders of CNY 2.174 billion; in 2024, computing power demand exploded, with revenue of CNY 23.862 billion and net profit of CNY 5.171 billion, surging 122.64% and 137.93% year-on-year respectively; in 2025, with 800G volume shipments and the rollout of 1.6T products, revenue reached CNY 38.240 billion and net profit CNY 10.797 billion, up 60.25% and 108.78% year-on-year. Growth continued in the first quarter of 2026, with quarterly net profit attributable to the parent of CNY 5.735 billion, up 262.28% year-on-year—single-quarter profit already exceeded the full year of 2024 [6]—fully demonstrating the advantages of the industry's high prosperity and the leader's capacity release.

3.1.2. Structural optimization of gross margin and net profit margin

During the revenue expansion period, Company W's profitability improved year by year. From 2023 to 2025, the company's gross margin rose from 32.99% to 42.04%, and the net margin climbed from 20.59% to 30.28%, with profitability indicators rising step by step. The earnings improvement stems from two points: the high-endization of the product structure—according to broker research estimates, the gross margin of 400G optical modules is about 25%–28%, that of 800G optical modules can reach 40%–45%, and the new-generation 1.6T optical modules climb further to 50%–55%; meanwhile, the share of revenue from high-speed optical modules (400G and above) rose from 66.3% in 2023 to 89.2% in 2025, among which the revenue share of 800G products rapidly increased from about 30% in 2024 to over 60% in 2025, while the revenue share of low-margin low- and medium-speed products shrank from 28.7% to 8.8%, with the contribution of high-margin products to revenue continuously expanding, directly driving the overall gross margin upward; and the increased penetration of the silicon photonics solution reduced unit material costs and enhanced economies of scale in manufacturing [7] (As shown in Table 1).

Table 1. Company W's main profitability indicators, 2023-2025

Indicator	2023	2024	2025	YoY 2024	YoY 2025
Operating revenue (CNY 100 million)	107.18	238.62	382.4	122.64%	60.25%
Net profit attributable to parent (CNY 100 million)	21.74	51.71	107.97	137.93%	108.78%
Basic EPS (CNY)	2	4.72	9.8	136.00%	107.63%
Weighted average ROE	16.58%	31.23%	43.84%	+14.65pct	+12.61pct
Gross margin	32.99%	33.80%	42.04%	+0.81pct	+8.24pct
Net profit margin	20.59%	22.51%	30.28%	+1.92pct	+7.77pct

Source: Company W's annual reports 2023-2025.

3.1.3. Decomposition of ROE drivers under the dupont analysis system

Table 2. DuPont three-factor calculation table for Company W, 2023-2025

Year	Net profit margin	Total asset turnover (times)	Equity multiplier (x)	ROE
2023	20.28%	0.59	1.40	16.58%
2024	21.67%	0.98	1.52	31.23%
2025	28.24%	1.03	1.51	43.84%

Source: Company W's annual reports 2023-2025.

Further applying the DuPont analysis system to decompose Return On Equity (ROE), it can be found that ROE leaped sharply from 16.58% in 2023 to 43.84% in 2025, an increase of 27.26 percentage points. Combined with the DuPont three-factor decomposition results in Table 2: from 2024 to 2025, the net profit margin rose from 21.67% to 28.24%, up 6.57 percentage points year-on-year, and was the core driver of ROE growth; total asset turnover rose from 0.98 times to 1.03 times, with the company's asset turnover efficiency steadily improving amid rapid revenue expansion and capacity utilization efficiency being released; the equity multiplier fell slightly from 1.52 to 1.51, fluctuating within a narrow range overall, corresponding to an asset-liability ratio maintained at around 30% over the long term—the company did not rely on expanding financial leverage to push up return on equity. Overall, Company W's ROE improvement represents typical high-quality

endogenous growth; the growth momentum comes from the upgrading of product competitiveness and the improvement of corporate profitability, not from financial leverage expansion to enhance shareholder returns [8] (As shown in Table 2).

3.1.4. Analysis of period expense ratios

In terms of the period expense structure, although R&D investment has continued to increase substantially, revenue has grown even faster, so the overall period expense ratio shows a favorable trend of stability with a slight decline. In 2024, the company's R&D expenses were CNY 1.333 billion, with an R&D expense ratio of about 5.59%; in 2025, R&D expenses rose to CNY 1.615 billion, but benefiting from the substantial expansion of revenue scale, the R&D expense ratio actually fell to about 4.22%, demonstrating a significant scale effect. Meanwhile, the management expense ratio and selling expense ratio were also substantially diluted by the rapid growth of revenue, further releasing profit space. As for selling expenses, since the company's customers are highly concentrated among leading North American cloud vendors and customer relationships are stable, no large-scale investment in channel building is needed, and the selling expense ratio remains at a low level. Management expenses benefit from improved management efficiency and advancing informatization, with growth far below revenue growth. This structural scissors gap of "revenue growth significantly outpacing expense growth" is an important financial logic supporting the company's better-than-expected net margin improvement, and also fully demonstrates the unique advantage of leading enterprises in releasing profit elasticity through scale advantages during high-prosperity industry cycles [7]. As shown in Figure 1:

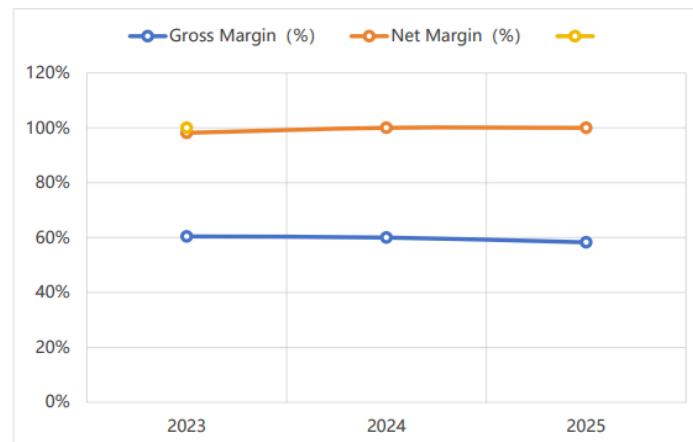


Figure 1. Trend of Company W's gross margin and net profit margin, 2023-2025

Source: Company W's annual reports 2023-2025.

The substantial increase in gross margin makes the company's net profit growth (108.78%) far exceed its revenue growth (60.25%), demonstrating strong earnings elasticity.

3.2. Operating capability analysis

3.2.1. Analysis of accounts receivable turnover efficiency

Against the background of explosive revenue growth, Company W's accounts receivable expanded in tandem: accounts receivable were CNY 2.581 billion at the end of 2023, rising to CNY 4.604 billion at the end of 2024, up 78.34% year-on-year, resulting from the routine credit sales accompanying revenue expansion, and further climbing to CNY 6.277 billion at the end of 2025. The ratio of accounts receivable to revenue fell from 24% to 16.4%, indicating continuously improving collection control and a gradually decreasing reliance of revenue

growth on credit sales. The company's accounts receivable turnover days have remained at 50 to 60 days, consistent with the conventional 30-60 day payment terms of the optical communication industry toward North American customers, with turnover efficiency in the upper-middle tier of the industry, reflecting the enterprise's strong customer bargaining and collection capabilities. All of the company's cooperating customers are global leading cloud vendors with excellent creditworthiness and extremely low historical bad-debt rates, providing sufficient assurance for collection. However, the continuous rise in the absolute amount of accounts receivable hides hidden dangers: if core customers reduce procurement or adjust payment rules, a large amount of working capital would be tied up; if industry prosperity falls back in stages, credit risk would become more prominent. The enterprise needs to continuously and dynamically monitor receivables, refine aging management, and improve the bad-debt provision mechanism to prevent credit risk from impacting overall financial stability [6, 9].

3.2.2. Analysis of inventory turnover efficiency and strategic stockpiling

As for inventory, the book value of inventory at the end of 2024 was CNY 7.051 billion, up 64.19% from the end of 2023; at the end of 2025 it further climbed to CNY 12.7 billion. The sharp expansion of inventory scale is not passive accumulation, but a proactive strategic stockpiling by the company against the background of high industry prosperity to ensure the timely delivery of 800G and 1.6T high-speed optical module orders, especially the advance locking of orders and stockpiling of core optoelectronic chips (scarce materials such as DSP and EML). Based on end-of-2025 data, inventory turnover days are estimated at about 140 to 150 days, basically matching the relatively long industry chain cycle of the optical module industry from material preparation to production and delivery. Nevertheless, management should remain highly vigilant about the inventory impairment risk that may be triggered if AI computing power investment pulls back in stages, especially for customized semi-finished products with poor versatility [10].

3.3. Solvency analysis

Company W's solvency remains at a very sound level overall. In terms of capital structure, at the end of 2024 the company's total assets were CNY 28.866 billion and total liabilities CNY 8.573 billion, with an asset-liability ratio of only 29.70%; by the end of 2025, although total assets grew substantially to CNY 45.289 billion and total liabilities increased to CNY 13.668 billion, the asset-liability ratio rose only slightly to 30.18%, significantly below the average level of the communication equipment manufacturing industry (usually 40%-60%). The low asset-liability ratio not only reflects the company's expansion driven by endogenous earnings accumulation, but also reserves ample room for future debt financing for capacity expansion when necessary.

In terms of short-term solvency, at the end of 2024 the company's current ratio was about 2.8 times and the quick ratio about 1.72 times, both far above the generally accepted safety thresholds (current ratio > 2, quick ratio > 1). This indicates that the company's short-term assets cover short-term liabilities to a high degree, with no liquidity strain. Ample monetary funds and continuously improving operating cash flow have built a solid "safety cushion" for the company to cope with potential short-term financial fluctuations. As shown in Table 3 below:

Table 3. Company W's solvency and operating capability indicators, 2023-2025

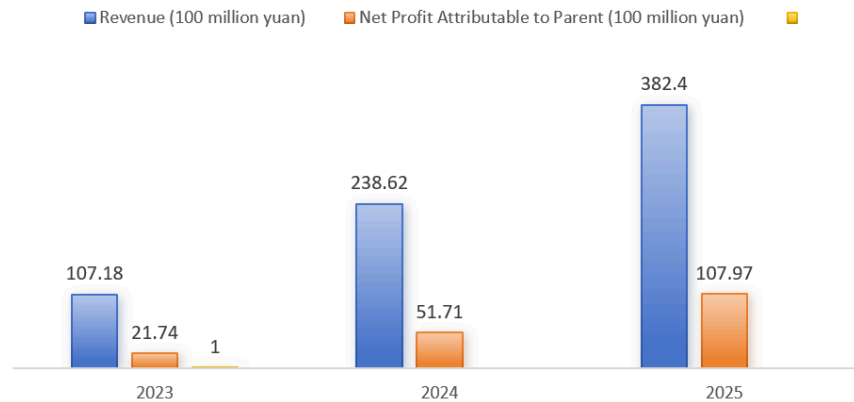
Indicator	End of 2023	End of 2024	End of 2025	Evaluation of Change Trend
Asset-liability ratio	26.15%	29.70%	30.18%	Extremely low, financially sound
Current ratio	2.60	2.80	2.69	Good, no short-term concerns
Accounts receivable (CNY 100 million)	25.81	46.04	62.77	Expanding in step with revenue
Inventory (CNY 100 million)	42.95	70.51	126.81	Strategic stockpiling increase

Source: Company W's annual reports 2023-2025.

3.4. Growth capability and cash flow quality analysis

3.4.1. Compound high growth of revenue and profit

In terms of growth indicators, from 2023 to 2025, Company W's compound annual growth rate of operating revenue reached 58.29%, and that of net profit attributable to parent company shareholders reached 106.62%; both growth indicators rank among the top among comparable companies with disclosed data in the communication network equipment and components industry. Net profit growth continuously and substantially exceeding revenue growth is the best financial proof of the dual logic of "economies of scale + product structure upgrading" being fulfilled under the AI prosperity cycle [7]. As shown in Figure 2:

**Figure 2.** Trend of Company W's operating revenue and net profit attributable to the parent, 2023-2025

Source: Company W's annual reports 2023-2025.

3.4.2. The leap in operating cash flow quality

The improvement in earnings quality is most intuitively reflected in the significant improvement of operating cash flow. In 2023, the company's net cash flow from operating activities was CNY 1.897 billion; it grew to CNY 3.165 billion in 2024, up 66.81% year-on-year, and exploded to CNY 10.896 billion in 2025, up 244.31% year-on-year. The ratio of net operating cash flow to net profit attributable to the parent (cash-to-profit ratio) rose from about 0.87 in 2023 to about 1.01 in 2025, indicating that the company's net profit has high cash content—earnings are not limited to book profits but are accompanied by real cash inflows. Strong

cash flow provides abundant internal financial support for the company's continued R&D investment, capacity expansion, and shareholder returns (such as dividends and buybacks). As shown in Figure 3:

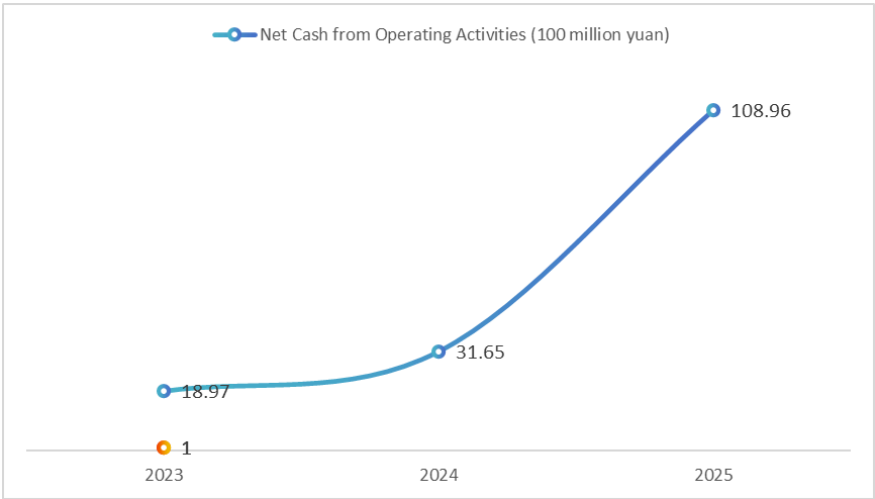


Figure 3. Company W's net cash flow from operating activities, 2023-2025

Source: Company W's annual reports 2023-2025.

3.5. R&D investment intensity and the construction of a technological moat

Continuous, high-intensity R&D investment is the lifeline for technology enterprises to maintain long-term competitiveness, and also the fundamental guarantee for Company W to rapidly launch high-speed optical module products that meet customer needs during the explosive window of AI computing power. The company's R&D investment was CNY 739 million in 2023; it rose sharply to CNY 1.333 billion in 2024, up 64.64% year-on-year; and in 2025 R&D expenses further increased to CNY 1.615 billion (CNY 1.676 billion including capitalized portions), up 25.77% year-on-year. Meanwhile, the number of the company's R&D personnel grew from about 1,453 in 2023 to 2,169 at the end of 2025, up 49.28%, with the talent echelon continuously expanding.

In terms of technological achievements, the company demonstrated a number of industry-leading advanced technologies at the Conference on Optical Fiber Communication (OFC) in 2025. At OFC 2025, the company showcased to the world its breakthrough progress in high-frequency, high-density optical interconnection, with exhibits covering the full-scenario application needs of data communication, telecom, and AI intelligent computing centers. Its subsidiary TeraHop debuted the world's first 12.8T Co-Packaged Optics (CPO) optical module. By closely coupling the optical engine with the switch chip, this product significantly reduces signal transmission loss and power consumption, integrates eight 1.6T transceiver capacities in a single module, and increases panel port density by 4 times compared with traditional OSFP packaging. In addition, the company also displayed a 1.6T optical module based on the silicon photonics solution and the product roadmap for LPO (linear-drive pluggable optics), effectively reducing customers' power consumption and cost pressure in large-scale AI cluster deployment. As shown in Figure 4:

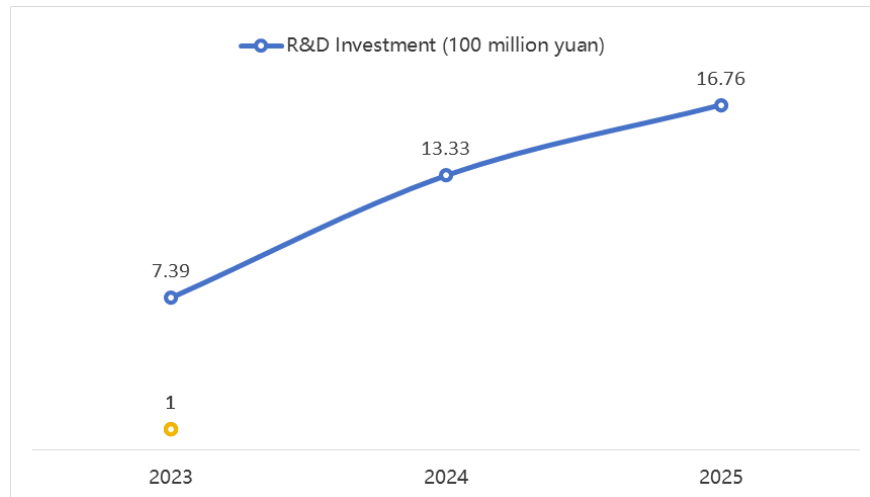


Figure 4. Trend of Company W's R&D investment, 2023-2025

Source: Company W's annual reports 2023-2025.

3.6. Identification of potential financial risks and operating concerns

Although Company W's financial performance is impressive, based on the principle of prudence, the following potential financial risks and operating concerns still need attention, with each risk's transmission impact on core financial indicators specified in tandem:

3.6.1. Structural risk of excessively high customer concentration

The optical module industry features a significant industrial characteristic of high downstream customer concentration. Selecting two comparable listed companies in the same industry, Eoptolink and HGTECH, as comparison samples, and based on the proportion of operating revenue from the top five customers disclosed in the 2023-2025 annual reports, a horizontal comparative analysis was conducted: Company W's top-five-customer revenue share ranged from 74%–78%, Eoptolink's corresponding indicator was 62%–72%, while HGTECH, relying on a diversified business layout, had a top-five-customer revenue share of only 34%–45%.

The horizontal comparison shows that concentrated customer resources are a common industry characteristic of overseas-market-oriented high-speed optical module manufacturers; at the same time, Company W's customer concentration is higher than that of comparable enterprises in the same track, with its top-five-customer revenue share 6–10 percentage points higher than Eoptolink's, and its dependence on major customers at a relatively high level in the industry. Accordingly, it is judged that Company W's customer concentration risk is a dual structural risk of industry systematic risk superimposed with enterprise-specific unsystematic risk: on the one hand, the enterprise's operations are constrained by the industrial environment in which downstream demand in the optical module industry is highly concentrated; on the other hand, the high dependence on major customers further amplifies the volatility of operating performance. If core overseas customers adjust their capital expenditure plans or implement supplier structure optimization, the company's operating revenue and profitability may suffer a strong negative impact.

3.6.2. Macro-geopolitical risks of overseas operations

Overseas revenue accounts for more than 90%, and core raw materials such as high-end optical chips are highly dependent on overseas procurement. Changes in China-US trade policy, escalation of export control measures, or tariff adjustments may all impose unpredictable external shocks on the company's supply chain security and cost structure.

Transmission paths to financial indicators: first, rising raw material procurement costs directly raise operating costs, with gross margin and net margin declining simultaneously; second, export obstruction causes the loss of overseas orders, shrinking revenue scale and weakening growth indicators; third, increased exchange losses on overseas receivables raise financial expenses and further erode net profit; fourth, supply chain cut-offs lead to idle capacity and a decline in total asset turnover [1], dragging down overall ROE.

3.6.3. Industry cyclical adjustment and overcapacity risks

Historical data show that the optical communication industry usually undergoes a cyclical adjustment every 3 to 4 years [2, 10]. The industry-wide aggressive capacity expansion currently underway to handle AI orders may, once AI inference demand growth falls short of expectations, lead to phased oversupply, triggering price wars and a fallback in gross margin.

Transmission paths to financial indicators: first, product price cuts directly depress gross margin and net margin, substantially shrinking profitability; second, insufficient orders lead to the accumulation of finished products, with the book value of inventory continuing to rise, inventory turnover days lengthening, inventory turnover declining, and large inventory impairment provisions being made, reducing current-period net profit; third, earlier expansion results in idle fixed assets, reducing asset utilization efficiency and weakening total asset turnover; fourth, the rigidity of fixed expenditures such as depreciation of fixed assets and long-term borrowing interest brought by capacity expansion, combined with shrinking revenue, causes a sharp contraction in net operating cash flow and a deterioration of the cash-to-profit ratio.

4. Countermeasures and recommendations

4.1. Diversify the customer base, reduce customer concentration, and smooth revenue and receivables fluctuations

In response to revenue volatility and bad-debt risks caused by customer concentration:

- (1) Tiered business expansion: intensify the development of domestic intelligent computing vendors, overseas telecom operators, and emerging regional cloud vendors, reduce the top-five-customer revenue share year by year, and smooth fluctuations in the operating revenue growth rate [6, 9];
- (2) Differentiated pricing mechanism: set reasonable premiums for small and medium customers to offset the bargaining losses of major customers and stabilize the gross margin center;
- (3) Credit rating management by customer: set payment-term ceilings for new customers, reduce the proportion of large single receivables, improve the accounts receivable turnover rate, and reduce bad-debt provision pressure.

4.2. Improve the global supply chain layout, hedge geopolitical policy shocks, and stabilize costs and earnings

In response to cost increases, revenue declines, and exchange losses caused by geopolitical risks in overseas operations:

- (1) Promote the domestic substitution of high-end optical chips [1], build a dual-supplier system, reduce dependence on overseas raw materials, control operating costs, and stabilize gross margin;
- (2) Establish multi-region production bases and split overseas order delivery regions to circumvent export controls in any single region and ensure stable revenue scale;
- (3) Carry out foreign exchange hedging on a regular basis to hedge exchange losses from USD settlement, reduce fluctuations in financial expenses, and defend the net profit margin;

(4) Optimize the collection rhythm of overseas receivables, shorten the average payment period of overseas customers, and improve asset turnover efficiency.

4.3. Dynamically regulate capacity and inventory scale, hedge industry cycles, and guard against impairment and profit decline

In response to inventory impairment, gross margin decline, and asset turnover deterioration risks caused by industry cycles and overcapacity [7, 10, 11, 12]:

(1) Build flexible capacity, avoid one-time large-scale fixed asset investment, adopt a combination of outsourcing and in-house production lines, and control rigid depreciation expenditures during demand downturns;

(2) Implement tiered inventory control, distinguishing general standardized materials from customized semi-finished products; schedule production of customized products on demand, reduce long-cycle stockpiling, and shorten inventory turnover days; establish a dynamic inventory impairment estimation mechanism, evaluate product price cycles quarterly, and make full impairment provisions to smooth profit fluctuations;

(3) Deploy ahead of technological iteration, continuously increase R&D on next-generation products such as 1.6T and CPO, rely on high-end new products to maintain high gross margins, and hedge against the gross margin decline brought by price wars in mature products;

(4) Reserve cash flow with cycle forecasting: retain operating cash flow during prosperity upswings, reduce aggressive capital expenditure, ensure liquidity safety during downturns, and stabilize solvency indicators such as the current ratio and quick ratio.

5. Conclusion

Based on Company W's financial report data from 2023 to 2025 and against the industry background of the AI computing power prosperity cycle, this paper conducted a comprehensive and systematic evaluation of its financial performance from the four dimensions of profitability, operating capability, solvency, and growth, and summarized three core conclusions by level:

5.1. Profitability and growth: AI prosperity drives high performance growth, with endogenous resilience in earnings quality

AI computing power demand has driven the company's revenue and net profit to achieve leapfrog compound growth: revenue more than 2.5 times larger over three years and net profit up more than fourfold, with compound growth rates of revenue and net profit significantly ahead of the industry; the high-endization of the product structure, superimposed with scale effects, has pushed gross margin and net margin to keep rising, and the weighted ROE has increased substantially. DuPont decomposition proves that the increase in net margin is the core driver of ROE growth; the enterprise relies on product competitiveness rather than financial leverage to achieve earnings expansion, with solid endogenous growth quality. Meanwhile, operating cash flow has exploded in tandem, the cash-to-profit ratio has exceeded 1, and book profits are backed by ample cash, indicating strong growth sustainability. Continuous high R&D investment has laid early groundwork for next-generation optical interconnection technologies, forming long-term technical barriers [7, 8] that support the enterprise's long-term growth.

5.2. Operations, solvency, and capital structure: a sound overall financial structure with operating efficiency matching the expansion pace

In the operating dimension, accounts receivable and inventory expanded in tandem with revenue, but turnover days remain within a reasonable industry range, showing mature working capital control; strategic stockpiling matches short-term high-prosperity demand, but the continuous rise in inventory scale sows hidden dangers of a cyclical pullback [10, 12]. The solvency dimension has an extremely strong safety margin: the asset-liability ratio has long remained at a low level of 30%, the current ratio and quick ratio are far above safety thresholds, monetary funds and operating cash flow are abundant, and there is no short-term liquidity pressure, with the low-debt structure preserving financing space for future capacity expansion. Overall, assets, liabilities, and cash flow are highly matched, and the financial structure is healthy and stable.

5.3. Industry cycle and operating risks: multiple hidden financial volatility risks beneath the prosperity dividend

The enterprise's current impressive financial performance is highly dependent on the upward cycle of the AI computing power industry, and it has three types of structural risks that will directly hit core financial indicators when the cycle turns [1, 2, 6]: first, high customer concentration can easily cause large fluctuations in revenue and net profit while raising bad-debt risk on receivables; second, business and supply chains are highly overseas-oriented, and geopolitical policy shocks would push up costs and lose orders, suppressing gross margin and asset turnover efficiency; third, cyclical industry capacity expansion, if computing power demand slows, would trigger price wars and inventory backlogs, bringing chain financial pressures such as inventory impairment losses, gross margin decline, and deterioration of asset turnover efficiency. The enterprise needs to implement full-chain control measures covering customers, supply chain, and inventory capacity to hedge the financial impact of the downward phase of the cycle.

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