

A Financial Analysis and Valuation of Alphabet

Haoran Liu*

Business School, Beijing Technology and Business University, Beijing, 100048, China

*Corresponding author: 2209050115@st.btbu.edu.cn

Abstract. Alphabet, the parent company of Google, stands as a global leader in technology, excelling in search engines and artificial intelligence. Despite its achievements, its market value has experienced fluctuations since 2022 due to dynamic external factors. In 2024, Alphabet initiated key financial decisions, including its first dividend announcement and a share repurchase plan, which influenced its stock performance. Financial indicators reflect strong liquidity and debt management, alongside competitive profitability, albeit with room for improvement. The company faces challenges from intense competition, regulatory scrutiny, and rapid technological advancements. Alphabet's growth trajectory over the next three to five years is expected to be multifaceted and uncertain. Robust cloud service growth is driving revenue, while expansion plans target gaming and emerging markets such as Africa and India. Technological innovation remains a cornerstone, with developments in AI, gesture control, and holographic communication anticipated. However, challenges such as ChatGPT's impact on the search business, market competition, and macroeconomic factors may constrain growth. Despite optimistic stock predictions, Alphabet must navigate significant risks to sustain its competitive edge and achieve long-term success.

Keywords: Alphabet; Financial Performance; Risk Assessment; Valuation.

1. Introduction

Studying Alphabet is of great significance. From the perspective of research background, it has a prominent industry position, leads in technological innovation, has a unique business structure, and its investment value is closely watched. In terms of economic impact, it has a profound influence on the digital advertising and cloud computing markets, can reflect market changes, promote the application of cloud computing and the digital transformation of the economy, and also plays an active role in employment, economic growth, and investment in the technology sector [1]. Its novelty lies in deeply integrating artificial intelligence into its business, diversifying its innovative business layout, adopting a data-driven decision-making model, and actively addressing social and environmental challenges, providing valuable experience and reference for other companies.

Alphabet is the world's leading technology company, with an outstanding performance in search engines, advertising technology and artificial intelligence. Alphabet was developed from Google. The Alphabet group is formed through the continuous business expansion and restructuring.

Google's search engine dominates the global market and has generated huge advertising revenue. It has invested heavily in artificial intelligence and technology research and development, and has a number of leading technological achievements. It has many well-known products and services, such as Google Maps, Google cloud hard disk, etc.

Starting from the first half of 2022, influenced by factors such as the global economic downturn, the Federal Reserve's interest rate hikes, and high inflation in the United States, Alphabet's market value declined. In January 2023, they announced layoffs of about 12,000 people, representing 6% of the company's total staff; in March, their autonomous driving technology company Waymo laid off 137 people; in September, the global recruitment team laid off hundreds of people [2]. In 2024, they plan to invest an additional \$5 billion in their autonomous vehicle company Waymo; on June 18, they launched the AI chatbot Gemini mobile app in India; in July, they plan to acquire cybersecurity startup Wiz for about \$23 billion [3].

On April 26, 2024, Alphabet announced its first-ever dividend and stock buyback: Alphabet declared its first dividend and a stock repurchase plan of \$70 billion. This followed a quarter where sales, profits, and advertising revenue all exceeded expectations. Stimulated by this news, its stock

price surged 11.4% in pre-market trading on the U.S. stock market, setting a new historical high and increasing its total market value by \$220 billion [4].

Concerns about AI-related business progress in 2024: Investors are extremely interested in Alphabet's development in the field of artificial intelligence. There are reports that Google's flagship AI product performed poorly, causing its market value to evaporate by \$80 billion in a single day.

Strong growth in cloud business in 2024: In the second quarter of 2024, Google's cloud business revenue broke through \$10 billion for the first time, growing from \$8.031 billion in the same period of 2023 to \$10.347 billion, an increase of over 28% year-on-year. The rapid growth of the cloud business indicates that the company's investment and development in this field have achieved significant results, providing new momentum for the company's future performance growth and helping to enhance investors' confidence and stock price expectations.

2. Financial Performance

2.1. Liquidity

Table 1. Liquidity ratios of Alphabet and its competitors

	Alphabet	Apple	Microsoft
Current ratio	1.95	0.87	1.3
Quick ratio	2.417	0.641	1.803
Cash ratio	1.355	0.423	1.068

As Table 1 shown, Alphabet's current ratio stands at 1.95, close to 2, indicating that for every 1 dollar of current liabilities, the company has approximately 1.95 dollar of current assets to back it up. This suggests that the company has a relatively strong short-term debt-paying ability, with current assets sufficient to meet the debts that are due soon. Compared to Apple's 0.87 and Microsoft's 1.3, Alphabet's current ratio is at a higher level, demonstrating its advantage in liquidity management and a more robust performance in short-term debt-paying capability.

Alphabet's quick ratio is 2.417, significantly higher than 1. This indicates that, excluding inventory, the company's quick assets provide a high degree of coverage for its current liabilities. The assets that can be quickly converted into cash are more than sufficient to repay short-term debts. Compared to Apple's quick ratio of 0.641 and Microsoft's 1.803, Alphabet's quick ratio shows a clear advantage, further reflecting its strong liquidity and robust short-term debt-paying ability. The company's assets are highly liquid, demonstrating an extremely strong capacity to meet its short-term obligations.

Alphabet's cash ratio is 1.355, which is greater than 1. This means that the company has sufficient cash and cash equivalents on hand to repay its current liabilities. When compared to the other two companies with cash ratios of 0.423 and 1.068, Alphabet's high cash ratio shows its strength in terms of cash reserves, with strong direct debt repayment and abundant corporate liquidity.

Compared to Apple and Microsoft, Alphabet has performed well in terms of liquidity, and all indicators have shown its advantages in short-term solvency and asset liquidity, with sufficient liquid assets and cash reserves to meet short-term debt needs, and good liquidity position.

2.2. Solvency

Table 2. Solvency ratios of Alphabet and its competitors

	Alphabet	Apple	Microsoft
debt to equity	0.419	4.673	0.997
D/A	0.295	0.823	0.499
leverage ratio	1.419	5.673	1.997

As Table 2 shown, Alphabet's debt-to-equity ratio is 0.419, which means that for every 1 dollar of shareholder equity, there is 0.419 dollars of debt. Compared to Apple's 4.673 and Microsoft's 0.997,

Alphabet's debt-to-equity ratio is relatively low. A lower debt-to-equity ratio typically indicates that the company relies more on shareholder equity in its capital structure rather than debt financing, which may imply that the company has relatively lower financial risk and less debt repayment pressure.

Alphabet's debt-to-assets ratio is 0.295, meaning that the company's total liabilities account for 29.5% of its total assets. In comparison, Apple's debt-to-assets ratio is 0.823, and Microsoft's is 0.499. Alphabet's debt-to-assets ratio is lower than that of Apple and slightly lower than Microsoft, indicating that a relatively larger proportion of Alphabet's assets is financed by shareholder equity. This suggests that the company has a better long-term debt-paying ability, and its assets provide a higher degree of coverage for its debts.

Alphabet's leverage ratio is 1.419, a metric that measures the relationship between the company's assets and shareholder equity, reflecting the extent to which the company utilizes leverage. Apple's leverage ratio stands at 5.673, while Microsoft's is 1.997. Alphabet's leverage ratio is significantly lower than Apple's and slightly lower than Microsoft's, indicating that Alphabet is relatively more conservative in using debt financing to expand its asset base. This may result in the company having a stronger debt-paying ability and financial stability when facing economic fluctuations or operational difficulties, due to a lighter debt burden.

Overall, compared to Apple and Microsoft, Alphabet demonstrates a certain advantage in debt-paying ability. Indicators such as its debt-to-equity ratio, debt-to-asset ratio, and leverage ratio all show that the company has a relatively robust financing structure, with strong long-term debt-paying capabilities, lower financial risks, and a higher degree of asset coverage for its debts, placing it in a more favorable position in terms of debt repayment.

2.3. Profitability

Table 3. Profitability ratios of Alphabet and its competitors

	Alphabet	Apple	Microsoft
Gross Profit Margin	56.63%	44.13%	68.92%
net profit margin	24.01%	25.31%	34.15%
Return on Assets	16.48%	21.46%	14.59%
Return on Equity	32.10%	157.41%	35.60%

As Table 3 shown, Alphabet's gross margin is 56.63%, which means that for every 100 dollars of operating revenue the company earns, it retains 56.63 dollars as gross profit after deducting the direct costs. Compared to Apple's 44.13%, Alphabet's gross margin is higher, indicating that it performs well in controlling direct costs, and its products or services have a higher added value, allowing for a relatively substantial profit margin above costs. However, when compared to Microsoft's 68.92%, Alphabet's gross margin is slightly lower, suggesting that there may be differences in cost control or product pricing strategies between Alphabet and Microsoft, with Microsoft potentially having a stronger ability to generate gross profit.

Alphabet's net profit margin is 24.01%, meaning that for every 100 dollars of operating revenue, the company ultimately realizes a net profit of 24.01 dollars. This is close to Apple's 25.31%, indicating that both companies have a similar ability to generate net profit after all costs are deducted. However, compared to Microsoft's 34.15%, Alphabet's net profit margin is lower, which may suggest that Alphabet is less efficient than Microsoft in controlling operational costs, taxes, interest, and other expenses, or there may be differences in business structure and profit models that result in a relatively lower level of net profit.

Alphabet's Return on Assets is 16.48%, indicating that for every 100 dollars of assets the company has, it generates 16.48 dollars of net profit. Compared to Apple's 21.46%, Alphabet's asset utilization efficiency is relatively lower, with Apple demonstrating superior performance in using assets to generate profits. When compared to Microsoft's 14.59%, Alphabet's ROA is slightly higher, suggesting that Alphabet is somewhat better than Microsoft in asset operation and management.

However, there is still room for improvement in the overall profitability of its assets. Alphabet needs to further optimize asset allocation and enhance operational efficiency to achieve a higher return on assets.

Alphabet's Return on Equity is 32.10%, which means that for every 100 dollars of capital invested by shareholders, they receive a net profit return of 32.10 dollars. Compared to Apple's 157.41%, Alphabet's return on shareholders' equity is significantly lower, indicating that Apple excels at creating value for its shareholders, likely due to its efficient capital operations and profit model. When compared to Microsoft's 35.60%, Alphabet's ROE is slightly lower, suggesting that there is a gap between Alphabet and Microsoft in terms of generating profits from shareholders' equity. Alphabet needs to further enhance its profitability or optimize its capital structure to improve the return level on shareholders' equity.

Overall, Alphabet has certain advantages in profitability, such as a higher gross margin than Apple, and there are also commendable aspects when compared with Microsoft on some indicators. However, when compared with leading companies in the industry, there are still some gaps, especially in terms of net profit margin, ROE, and other indicators. There is a need for continuous improvement in cost control, asset operational efficiency, and optimization of profit models to enhance profitability and market competitiveness.

3. Risk Assessment & Forecast

The technology industry where Alphabet operates is confronted with multiple risks. These include competition risks, as it needs to contend with both established industry giants and emerging enterprises; technological risks, facing the pressure of technological innovation, uncertainties in application, and issues related to system security; privacy and data security risks, being subject to data regulations and facing challenges in privacy protection; legal and regulatory risks, under the pressure of antitrust regulations, intellectual property disputes, and content supervision; macroeconomic risks, being affected by economic recessions, exchange rate fluctuations, and policy changes; and talent risks, facing fierce competition for talent and having a reliance on key personnel [5]. All these risks may exert varying degrees of adverse impacts on its business development, financial situation, reputation, and so on.

Alphabet, as the parent company of Google, operates in a complex and volatile business environment, facing numerous severe business risks. In terms of competitive risks, the technology industry is exceptionally competitive. Alphabet faces challenges from rivals like Microsoft and Baidu in the search engine domain, competes with Amazon and Microsoft for market share in the cloud computing market, and is threatened by emerging technology companies that could potentially disrupt specific AI application scenarios, as well as by cross-industry giants like automobile manufacturers in the field of autonomous driving [6]. On the technological front, data security and privacy are significant concerns, subject to strict regulatory oversight and vulnerable to cyberattacks. Moreover, the rapid pace of technological change means that failing to keep up with trends such as innovations in artificial intelligence algorithms could undermine its advantages [7]. Additionally, the technical integration of its many businesses is challenging, involving compatibility, data transfer, and other issues. On the regulatory and policy risk front, due to its significant market share in search engines and advertising, Alphabet is susceptible to antitrust regulations, with the EU having previously imposed substantial fines [8]. Different business areas must also comply with industry-specific regulations, such as those in healthcare and finance. International politics and trade frictions can also have an impact, with trade barriers potentially increasing costs and limiting business expansion. Some countries' requirements for data storage also pose challenges to its global business strategy [9]. These risks impact the smooth operation of its business, the stability of its market leadership, and the health of its financial condition to varying degrees. Therefore, Alphabet needs to plan carefully and respond cautiously to ensure that the company can maintain stable development and continue to be competitive in a turbulent business environment.

In terms of stock price forecasting, analysts have a median 12-month price target of \$153.00, with a high of \$180.00 and a low of \$129.00, representing a median estimated increase of 11.70% from the current price; the average target price over 12 months is \$204.93, with a low of \$129 and a high of \$240, indicating an expected increase of 14.90% from the current stock price. Earnings forecast data shows that EPS for 2024 are expected to be \$8.25, and approximately \$9.23 for 2025, with an annual growth rate of about 11.89%. Revenue is projected to be \$360.55 billion in 2024 and to reach \$402.73 billion in 2025, with an annual growth rate of about 11.70%.

From the business growth forecast perspective, as one of the core segments, Google's advertising business achieved revenue of \$65.854 billion in the third quarter of 2024 with significant year-over-year growth. With the expansion of the global economy and the digital advertising market, although it will be disturbed by competition and other factors, it still has the potential for stable growth. Google Cloud's revenue was \$11.353 billion in the same period, with a significant year-over-year increase. Given the continuous rise in demand for cloud computing services by businesses, it is expected to become a key force in future revenue growth. YouTube's advertising business achieved revenue of \$8.921 billion in the quarter, showing a year-over-year growth trend [10]. Due to the continuous heating up of video content consumption and its own advantages in the field of video advertising, subsequent growth is worth looking forward to.

However, Alphabet also faces many risks. In the field of competitive risks, the competition in the technology industry is fierce. In terms of search engines, it faces competition from rivals such as Microsoft Bing. In the cloud computing market, it encounters challenges from Amazon AWS and Microsoft Azure. The advertising business is also squeezed by competition from multiple sides, which may lead to a decline in market share and price pressure, adversely affecting revenue and profits. In terms of regulatory and policy risks, it faces strict regulation in dimensions such as data privacy and antitrust. For example, recent risks of the Chrome and Android businesses facing the possibility of being split up by U.S. antitrust authorities will undoubtedly have a significant impact on the company's business operations and financial condition. On the technological risk front, the technology industry is characterized by rapid technological updates and upgrades. Alphabet needs to continuously invest substantial resources in research and development and innovation to maintain its technological leadership. If it fails to keep up with technological trends in a timely manner, the competitiveness of its products and services will decline, and business growth will inevitably be hindered.

4. Conclusion

Alphabet, as a leading global technology company, has achieved remarkable success in areas such as search engines and artificial intelligence. Since 2022, its market value has fluctuated due to various factors, and in 2024, it has made numerous business moves, including announcing its first dividend and share repurchase plan, which have affected its stock price. Financially, the company has performed well in liquidity and debt-paying ability indicators, and while its profitability has advantages, there is also room for improvement. The company faces risks from competition, technology, and regulation. Although Google's various businesses have shown significant revenue growth, risks still exist in terms of competition, regulation, and technological updates. Analysts have certain predictions for its stock price and business growth, and its future development needs to cautiously address risks to maintain competitiveness.

Over the next three to five years, Google's development is expected to be multifaceted and full of variables. In terms of business, cloud services are growing robustly, contributing to total revenue growth, with plans to expand into gaming, African, and Indian markets, and potentially launching innovative products such as gesture control technology and holographic video calling booths. On the technological front, AI technology is deeply applied and continues to drive the intelligent transformation of businesses, with the expectation that large models will be embedded in Android phones next year. Financially, revenue and net profit are showing growth trends; however, in

competition, there are also challenges, such as the search business being affected by ChatGPT. Although stock predictions have room for increase, they are subject to various factors, including market competition, technological breakthroughs, macroeconomic conditions, and policy regulations, making its actual development still uncertain.

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