THE IMPACT OF ESG ON THE FINANCIAL PERFORMANCE OF IT COMPANIES

Alina HAGIU[1], Anastasia PANDAS[2], Emilia CLIPICI[3]

[1] National University of Science and Technology Politehnica Bucharest, Faculty of Economics and Law, Romania, mariana_alina.hagiu@upb.ro
[2] Odessa State Academy of Civil Engineering and Architecture, Ukraine, anastasypandas@gmail.com
[3] National University of Science and Technology Politehnica Bucharest, Faculty of Economics and Law, Romania, emilia.clipici@upb.ro

Abstract: *The digital economy is transforming the IT industry into a key driver of global sustainability, and the integration of ESG (Environmental, Social, Governance) criteria is becoming essential. This paper analyses the mechanisms through which ESG influences the financial performance of IT companies, demonstrating that strategies such as reducing energy consumption, promoting diversity and ethical governance contribute to increased profitability and financial stability. The results indicate a positive correlation between ESG scores and financial indicators of companies in this sector.*

Key words*:* monetary policy, sustainability, inflation, emerging economies

JEL Classification Codes: E31, E52, E58

1. INTRODUCTION

In recent years, pressures related to the green and digital transition have increased simultaneously. IT companies, due to their size and infrastructure (data centers, cloud computing, artificial intelligence), have become both large energy consumers and providers of digital solutions for sustainability. Thus, globally, ESG (Environmental, Social, Governance) criteria have evolved from Corporate Social Responsibility (CSR) options to reporting standards and investment criteria (ESRS in the EU, SASB/GRI in the US and internationally). In turn, investment funds, banks, and stakeholders make financing decisions taking into account ESG scores, which directly affects companies' access to capital.

The term ESG first appeared in the report "Who Cares Wins" (UN Global Compact, 2004), suggesting that integrating ESG criteria leads to sustainable and superior financial performance. Corporate social responsibility (CSR) initially had a voluntary dimension, but ESG subsequently added the measurable and reportable component that is essential for investors.

ESG has three important dimensions, namely:

- ✓ Environment (E): companies' impact on the environment — emissions, energy efficiency, resource management.
- ✓ Social (S): employee relations, diversity and inclusion, human rights, impact on communities.
- ✓ Governance (G): transparency, board structure, risk management, ethical decision-making.

From our point of view, the demands of investors, regulators, and consumers regarding social and environmental responsibility are increasing, as is the importance of sound corporate governance. In this context, ESG (Environmental, Social, Governance) is no longer seen as a

mere cost or PR element, but as a potentially decisive factor in medium- and long-term financial performance.

Thus, in this article, we attempt to explore the ways in which ESG criteria influence the financial results of IT companies, highlighting recent empirical studies, transmission mechanisms, limitations, and practical implications.

Several theories underpin the link between ESG and financial performance. The most important are:

- ✓ Stakeholder theory (Freeman, 1984), according to which companies that respond to the needs of stakeholders (customers, employees, community, investors, government) are more resilient and profitable. In IT, diversity programs and AI ethics increase consumer confidence and attract talent.
- ✓ Signaling theory (Spence, 1973), according to which a high ESG score acts as a positive signal to investors, who perceive the company as well-managed and low-risk. In IT, ESG scores can improve stock market valuations and reduce the cost of capital.
- ✓ The cost of capital theory (Modigliani & Miller, adapted to the ESG context), according to which companies with good ESG are perceived as safer, obtaining cheaper financing (lower interest rates, lower bond spreads). In IT, Microsoft and Apple have issued green bonds with favorable financing costs.
- ✓ Resource-Based View (Barney, 1991) according to which ESG can be a strategic resource that is difficult to imitate (e.g., inclusive organizational culture, sustainable reputation), providing a sustainable competitive advantage.
- ✓ Agency theory, according to which sound corporate governance reduces conflicts of interest between managers and shareholders. In IT, privacy/data ethics scandals show the costs of weak governance.
- ✓ The agency theory, according to which strong corporate governance reduces conflicts of interest between managers and shareholders. In IT, privacy/data ethics scandals show the costs of weak governance.

We should also mention several important international empirical studies that highlight the conceptual link between ESG and financial performance, namely:

- ✓ The NYU Stern meta-analysis (2021), according to which 58% of studies show a positive relationship between ESG and financial performance; <10% indicate a negative relationship.
- ✓ Friede, Busch & Bassen (2015), which includes an analysis of 2,200 studies – 62% identified a positive correlation between ESG and CFP (corporate financial performance).
- ✓ Bai, H., & Kim, J. (2024), which addresses the relationship between ESG and financial performance through a meta-analysis and bibliometric analyses, focuses on studies from three cultural/linguistic regions (English, Chinese, Korean) and finds a moderate positive correlation in certain regions; in others (e.g., English) the effect is weaker/not significant.
- ✓ Aydoğmuş, M. (2022), which provides clear empirical evidence that ESG performance translates into company value and profitability.

IT is a unique sector because: it has massive energy consumption (data centers), is highly dependent on human capital and reputation as an employer (the importance of the "S" dimension), and is exposed to risks related to AI governance and data protection. Therefore, the analysis of ESG–financial performance in IT requires a theoretical framework adapted to its particularities.

2. THE PARTICULARITIES OF THE IT SECTOR IN RELATION TO ESG

Analyzing the particularities of the IT sector in relation to ESG involves highlighting several aspects, namely:

a. *The IT industry as a driver of the digital economy and sustainability.* From our point of view, the IT sector contributes significantly to global GDP, being among the largest employers and investors in innovation. It also has a dual role. On the one hand, it is a consumer of resources (data centers, hardware and device production involve high consumption of energy and raw materials) and, on the other hand, it is a provider of sustainable solutions (digitization, cloud computing, artificial intelligence, and big data enable the optimization of processes in other industries (transport, energy, agriculture)). In this context, as the "showcase" of the digital economy, IT companies are more visible to stakeholders, and their reputation is directly linked to how they manage ESG challenges.

b. The Environment dimension (E) manifests itself through:

- Energy consumption and carbon footprint - data centers are responsible for approximately 1–2% of global electricity consumption and nearly 1% of total CO_2 emissions (IEA, 2023). Major IT companies (Microsoft, Google, Amazon, Apple) report annually on their progress in transitioning to renewable energy.
- Sustainability initiatives: Microsoft aims to be "carbon negative" by 2030, Google aims to use 100% renewable energy for operations and investments in PPAs (Power Purchase Agreements), and Apple has developed a program for recycling and disposing of materials with high fluorinated gas emissions.
- Risks and opportunities. Risks include strict emissions and energy regulations (EU: Fit for 55, Carbon Border Adjustment Mechanism) and rising energy costs as an incentive for efficiency and innovation, while opportunities include the possibility of becoming providers of green solutions (e.g., renewable energy cloud).

c. Social Dimension (S) considers:

- Workforce. From our point of view, the IT sector depends heavily on human capital and attracting talent. Gender, ethnic, and cultural diversity is a key factor for innovation. Leading companies publish data on employee diversity and inclusion policies.
- Working conditions and work-life balance. We believe that the IT industry is prone to burnout (overtime, constant pressure). ESG requires health and wellness programs.
- Impact on communities. IT companies run social responsibility programs (digital education, support for local startups, internet access in disadvantaged areas). From our point of view, the social dimension plays a special role in reputation and in attracting millennials and Gen Z, who are sensitive to ethical values.
- Supply chain. In hardware, there are issues related to mining for rare metals for the production of various components and poor working conditions at suppliers. ESG requires traceability and social auditing of suppliers.

d. Governance (G) dimension, considering:

- Transparency and ethics. ESG reporting has become mandatory in the EU through CSRD and ESRS. Investors demand audited reports, not just "greenwashing."
- Artificial intelligence ethics (AI governance). This includes issues of algorithmic bias, privacy, and responsible use of data. IT companies have started to adopt ethical codes for AI (Google AI Principles, Microsoft Responsible AI Standard).
- Board structure and diversity. Studies show that boards that are diverse in terms of gender and expertise improve ESG performance. In IT, investor pressure is driving companies to add members with expertise in sustainability.

- Reputational and legal risks. Privacy scandals (Cambridge Analytica for Facebook, GDPR fines for Google) show how costly governance deficiencies can be. Implementing robust compliance mechanisms reduces the risk of litigation and fines.

Table 1. ESG - Challenges and opportunities for IT companies

ESG dimension	Challenges	Opportunities
Environment (E)	• High energy consumption in data centers • High costs for transitioning to renewable energy • Indirect emissions (Scope 3) from the hardware supply chain	• Cost reduction through energy efficiency • Access to green financing (bonds, PPAs) • Green cloud and AI for consumption optimization
Social (S)	• Burnout and pressure on employees • Low diversity in certain companies • Ethical issues in the supply chain (working conditions)	• Attracting and retaining talent through diversity and inclusion • Increased productivity and innovation • Positive global reputation
Governance (G)	• Reputational risks from privacy and data protection • Fines for non-compliance with GDPR/AI Act • Perception of greenwashing if reporting is not transparent	• Better access to capital through strong governance • Avoidance of costly litigation • Strengthening investor and customer confidence

Source: made by the authors

3. EMPIRICAL ANALYSIS OF THE IMPACT OF ESG ON FINANCIAL PERFORMANCE

In this part of the article, we have chosen to analyze three companies in the IT industry, namely Microsoft, Alphabet (Google), and Apple. The research is descriptive and explanatory, based on a comparative analysis between the three companies we have chosen to be the subject of the case study. In conducting the analysis, we used the companies' financial reports, sustainability and ESG reports (Microsoft Sustainability Report, Google Environmental Report, Apple Environment Progress Report), and ESG scores from specialized agencies (Sustainalytics, MSCI). Due to the lack of comparable data, we conducted the analysis for the year 2024, as most agencies (Sustainalytics, MSCI, Refinitiv) only provide current public data, which limited our longitudinal analysis. Another limitation of the analysis is that methodologies differ between providers, which reduces absolute comparability, and the analysis focused on IT giants, so the results may not be generalizable to medium-sized companies or startups.

Next, we will analyze the relationship between ESG and financial performance for each of the three companies.

1. Microsoft

Figure 1 shows that in fiscal year 2024, Microsoft reported total revenues of $245.1 billion, up from previous years, confirming the positive momentum of the cloud and AI segments. Operating profit reached $109.4 billion, representing nearly half of revenue, a remarkable performance for a company with a diversified product and service structure.

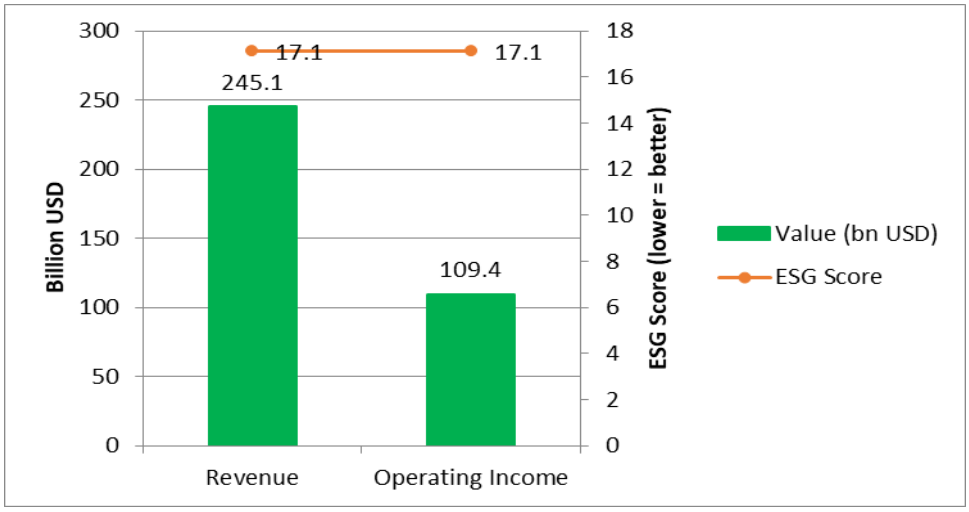

Figure no 1. ESG and financial performance analysis of Microsoft in 2024

Source: made by the authors using data from Microsoft FY2024 Financials – Microsoft Investor Relations, Macrotrends – Microsoft Operating Income and Sustainalytics – Microsoft ESG Rating

In terms of ESG, we note that Microsoft scored 17.1 (Low Risk/Negligible) according to Sustainalytics, suggesting low exposure to ESG risks and a solid capacity to manage them. This score reflects, in particular, consistent investments in renewable energy and ambitious commitments ("carbon negative 2030"), as well as transparency in corporate governance. Correlating these data, it can be concluded that ESG strategies have not only reduced reputational and regulatory risks, but have also contributed to financial stability, enabling the company to achieve high margins and advantageous access to capital.

2. Alphabet (Google)

According to Figure 2, Alphabet recorded revenues of approximately $350 billion in 2024, confirming its status as the global leader in digital advertising and cloud services. Operating profit was $112.4 billion, reflecting increased cost efficiency and the expansion of Google Cloud, which has become consistently profitable.

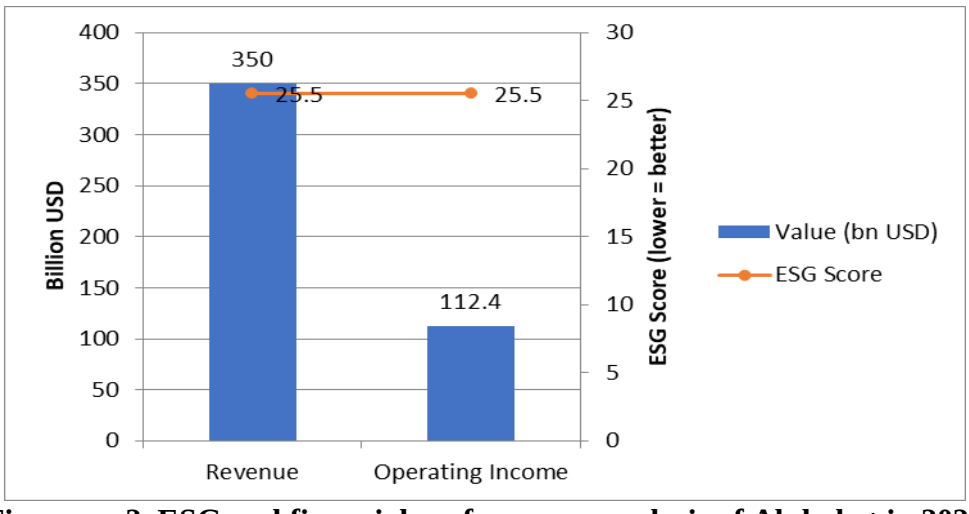

Figure no 2. ESG and financial performance analysis of Alphabet in 2024

Source: Source: made by the authors using data from Macrotrends – Alphabet Revenue, Macrotrends – Alphabet Operating Income and Sustainalytics – Alphabet ESG Rating

However, Figure 2 shows that Alphabet's ESG score, estimated at approximately 25.5 (Medium Risk), is less favorable than that of Microsoft and Apple. This reflects the company's vulnerabilities to social and governance risks, particularly related to AI ethics, data privacy, and monopoly litigation. From the interpretation of the data, we can conclude that although financial performance remains solid, the average ESG score indicates a possible increase in future costs, either due to fines and regulations or through the impact on reputation. Investors may perceive these risks as a factor of volatility, which may negatively influence stock market valuation and the cost of capital.

3. Apple

Figure 3 shows that Apple reported total revenues of $391 billion in 2024, the highest level among the three companies analyzed. Operating profit stood at $123.2 billion, confirming the high margins due to both the hardware segment (iPhone, Mac) and the continued growth of digital services (Apple Music, iCloud, App Store).

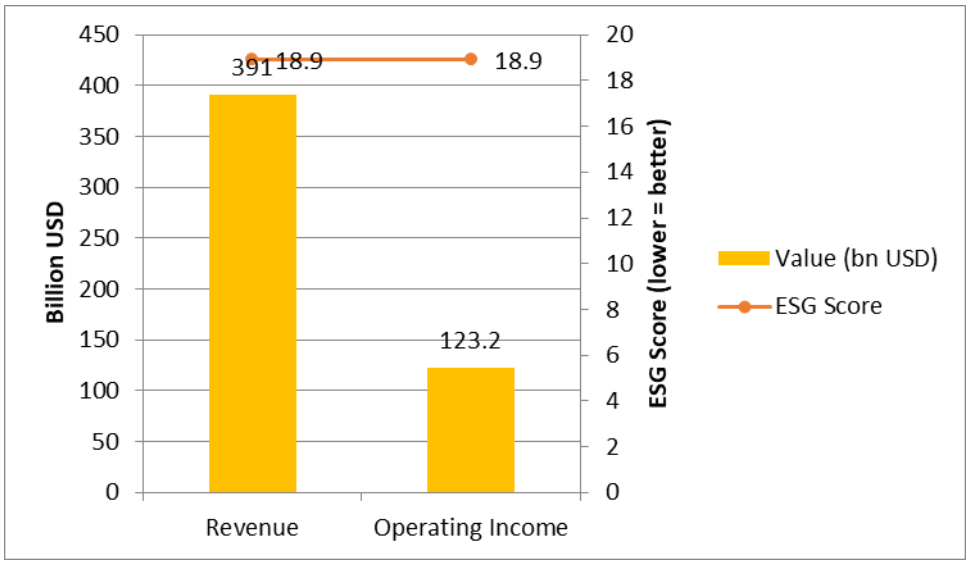

Figure no 3. ESG and financial performance analysis of Apple in 2024

Source: Source: made by the authors using data from Macrotrends – Apple Revenue, Macrotrends – Apple Operating Income and Yahoo Finance – Apple Sustainability

At the ESG level, we observe in Figure 3 that Apple achieved a score of 18.9 (Low Risk/Negligible), reflecting consistent efforts to reduce emissions (a decrease of over 60% compared to 2015) and extensive recycling and efficiency programs in the supply chain. In interpreting the data, we see that investments in sustainability have had a double effect: on the one hand, they have strengthened the company's reputation, and on the other hand, they have reduced vulnerability to climate regulation risks and supported profit margins.

We believe that Microsoft and Apple demonstrate that low ESG scores (indicating low risk) correlate with strong financial performance, both in terms of high revenues and high operating profits. Alphabet, on the other hand, while remaining financially competitive, has an average ESG score, which signals greater exposure to reputational and compliance risks.

Table 2. Comparative analysis between Microsoft, Apphabet, and Apple (2024)

Company	Revenue (USD billion)	Operating Income (USD billion)	ESG – Score (Sustainalytics)	The link between ESG and performance
Microsoft	281,7	128,5	16,9 – Negligible	Green energy, profitable AI cloud, low capital costs
Alphabet	350,0	112,4	25–26 – Medium	Profitable cloud, but social/AI risks increase costs
Apple	391,0	123,2	18,9 – Negligible	Green supply chain → high margins and stability

Source: made by the authors using data from Macrotrends, Sustainalytics and Yahoo Finance

In our opinion, this comparison shows that, in the IT industry, ESG dimensions influence not only investor perception but also financial results: the Environmental dimension optimizes costs, the Social dimension influences reputation and human capital, and the Governance dimension determines access to capital and long-term stability.

4. SUSTAINABILITY AND PROFITABILITY IN IT: ESG IMPLICATIONS AND RECOMMENDATIONS

The integration of ESG (Environmental, Social, Governance) criteria into business strategies is no longer an exercise in image or occasional compliance, but an essential condition for the long-term competitiveness of IT companies. The results of our empirical analysis of Microsoft, Alphabet, and Apple show that ESG dimensions directly influence financial performance, reputation, and innovation capacity. Below, we present the major implications for management, investors, and regulators, as well as concrete recommendations for integrating sustainability into IT companies' development plans.

a. Implications for IT company management

For management teams, ESG is becoming a strategic element, comparable in importance to technological innovation or expansion into new markets. In the case of Microsoft, ambitious goals to become "carbon negative" by 2030 have been integrated into the overall development strategy, which has reduced regulatory risks and increased the company's attractiveness to institutional investors. This integration has demonstrated that sustainability and profitability are not incompatible, but can be complementary.

In our opinion, IT companies must also pay greater attention to the social dimension. Alphabet, for example, faces challenges related to the ethics of AI use and data privacy. These issues are not just compliance issues, but critical factors that influence talent retention and public trust. Without an organizational culture focused on transparency and accountability, companies risk losing their long-term competitive advantage.

Last but not least, we believe that corporate governance plays a decisive role and that the establishment of ESG committees at the board level can contribute to increased transparency and reduced reputational risks. Apple, by expanding diversity at the board level and through strict supplier policies, has strengthened its credibility and reduced its exposure to criticism regarding working conditions in its supply chain.

b. Implications for investors and financial markets

From an investor perspective, ESG represents an additional dimension of risk assessment and financial stability. The data analyzed shows that Microsoft and Apple, with more favorable

ESG scores, achieved higher operating profits and lower volatility. In contrast, Alphabet, with an average ESG score, faces greater exposure to litigation and reputational pressures, which can generate short-term fluctuations.

Thus, we believe that for investors, ESG scores are becoming a proxy for resilience. Companies with a solid ESG profile are perceived as less risky and enjoy more favorable financing conditions, including green bonds and low-interest credit lines. At the same time, in our opinion, ESG contributes to reducing the risk of stock market volatility, as well-governed and responsible companies are better prepared to manage external crises, whether economic or reputational.

c. Implications for regulators and standard-setting bodies

A key finding of our analysis is that, in the absence of uniform standards, ESG scores can vary considerably between agencies. Microsoft, for example, may have a "Low Risk" score at Sustainalytics, but a different rating at MSCI or Refinitiv. This lack of consistency affects comparability and can create confusion among investors.

Regulators, such as the European Union through the CSRD (Corporate Sustainability Reporting Directive), are attempting to harmonize reporting by imposing clearer standards and external auditing. In our opinion, this trend should be extended globally to avoid fragmentation and ensure real transparency. In addition, the emergence of specific regulations for artificial intelligence (AI Act in the EU) shows that the dimension of digital governance is becoming an integral part of the ESG framework, especially for IT companies.

Below, we have summarized in Table 3 some recommendations for the companies that were the subject of the case study.

Table 3. ESG recommendations for IT companies

Company	Environmental Recommendations (E)	Social Recommendations (S)	Recommendations Governance (G)
Microsoft	Accelerate the 'carbon negative 2030' target; invest in renewable energy data centers; expand PPA partnerships.	Strengthen diversity and inclusion programs; retain talent in AI and cloud.	Establish an ESG committee at board level; strengthen Responsible AI policies.
Alphabet (Google)	Reduce energy intensity for AI and data centers; additional investments in renewable energy.	Increase transparency on AI privacy and ethics; support programs for employees and local communities.	Improve AI governance and reduce reputational risks; regular external ESG audit.
Apple	Expand recycling programs; achieve climate neutrality in the supply chain; strengthen material traceability.	Expand diversity programs; ensure ethical conditions in the global supply chain.	Increased transparency in ESG reporting; expand diversity on the board; strict ethical policies for suppliers.

Source: made by the authors

Our analysis shows that ESG integration is not a parallel effort to financial objectives, but a prerequisite for achieving them. ESG becomes a strategic vector for reducing risks, attracting capital, and strengthening reputation. IT companies that manage to combine technological innovation with sustainability are most likely to maintain their leadership position in a rapidly changing global economy.

5. CONCLUSIONS

Theoretical and empirical analysis has confirmed the positive correlation between ESG scores and the financial performance of IT companies. Companies with low ESG scores (low risk) – such as Microsoft and Apple – have recorded solid profitability, better access to capital, and reduced volatility. Alphabet, with a higher ESG score (medium risk), while still profitable, is more exposed to social and reputational risks, which is reflected in a higher cost of capital and investor perception.

In terms of ESG dimensions, the Environmental (E) dimension has the fastest impact by reducing energy costs, the Social (S) dimension influences labor market attractiveness and talent retention, with medium- to long-term effects on innovation and stability, and the Governance (G) dimension plays a critical role in ensuring transparency and stakeholder trust, reducing reputational and legal risks. We thus observe that ESG components are not equivalent in effect: governance and environment tend to have more visible effects in the medium term, while social aspects may be more difficult to quantify but contribute to organizational stability. We also consider that the context (country, regulation, company maturity, size, degree of digitization and innovation) plays an important moderating role.

REFERENCES

1. Samuelson P., Nordhaus W., *Economics*, Scientific bulletin, Economic Series no 7(13), University of Pitesti, pp. 56-58, 2008
2. Apple Inc. (2024). *Apple environmental progress report 2024*. Apple. Retrieved from https://www.apple.com/environment/pdf/Apple_Environmental_Progress_Report_2024.pdf
3. Apple Inc. (2024). *Form 10-K 2024: Annual report for the fiscal year ended September 28, 2024*. U.S. Securities and Exchange Commission. Retrieved from https://www.sec.gov/Archives/edgar/data/320193/000032019324000123/aapl-20240928.htm
4. Aydoğmuş, M. (2022). Impact of ESG performance on firm value and profitability. *Journal of Cleaner Production, 371*, 133649. https://doi.org/10.1016/j.jclepro.2022.133649
5. Bai, H., & Kim, J. (2024). Do ESG practices promote financial performance? Comparison of English, Chinese, and Korean papers through bibliometric and meta-analysis. *Sustainability, 16*(22), 9810. https://doi.org/10.3390/su16229810
6. Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17*(1), 99–120. https://doi.org/10.1177/014920639101700108
7. Friede, G., Busch, T., & Bassen, A. (2015). ESG and financial performance: Aggregated evidence from more than 2000 empirical studies. *Journal of Sustainable Finance & Investment, 5*(4), 210–233. https://doi.org/10.1080/20430795.2015.1118917
8. Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Boston: Pitman.
9. International Energy Agency. (2023). *Electricity 2023: Analysis and forecast to 2025*. Paris: IEA. Retrieved from https://www.iea.org/reports/electricity-2023
10. Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X
11. Macrotrends – Microsoft Operating Income – available at: https://www.macrotrends.net/stocks/charts/MSFT/microsoft/operating-income

12. Macrotrends – Alphabet Revenue– available at: https://www.macrotrends.net/stocks/charts/GOOG/alphabet/revenue
13. Macrotrends – Alphabet Operating Income – available at: https://www.macrotrends.net/stocks/charts/GOOG/alphabet/operating-income
14. Macrotrends – Apple Revenue – available at: https://www.macrotrends.net/stocks/charts/AAPL/apple/revenue
15. Macrotrends – Apple Operating Income – available at: https://www.macrotrends.net/stocks/charts/AAPL/apple/operating-income
16. Microsoft Corporation. (2024). *Microsoft earnings release FY24 Q4*. Microsoft Investor Relations. Retrieved from https://www.microsoft.com/en-us/investor/earnings/fy-2024-q4/press-release-webcast
17. Microsoft Corporation. (2024). *Microsoft environmental sustainability report 2024*. The Official Microsoft Blog. Retrieved from https://blogs.microsoft.com/on-the-issues/2024/05/15/microsoft-environmental-sustainability-report-2024
18. Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American Economic Review*, *48*(3), 261–297.
19. NYU Stern Center for Sustainable Business. (2021). *ESG and financial performance: Uncovering the relationship by aggregating evidence from 1,000+ studies published between 2015–2020*. New York University. Retrieved from https://www.stern.nyu.edu/experience-stern/about/departments-centers-initiatives/centers-of-research/center-sustainable-business/research/research
20. Spence, M. (1973). Job market signaling. *The Quarterly Journal of Economics*, *87*(3), 355–374. https://doi.org/10.2307/1882010
21. Sustainalytics. (2024). *Alphabet Inc. ESG risk rating*. Sustainalytics. Retrieved from https://www.sustainalytics.com/esg-rating/alphabet-inc/1007907342
22. Sustainalytics. (2024). *Microsoft Corp. ESG risk rating*. Sustainalytics. Retrieved from https://www.sustainalytics.com/esg-rating/microsoft-corp/1007900081
23. Yahoo Finance. (2024). *Apple Inc. sustainability profile*. Yahoo Finance. Retrieved from https://finance.yahoo.com/quote/AAPL/sustainability