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<b>Net ID</b>	<b>SXM230065</b>
Company Chosen	Google LLC & Apple Inc
Base Company	Google LLC
Google's Income Statement	<a href="https://finance.yahoo.com/quote/GOOG/financials">https://finance.yahoo.com/quote/GOOG/financials</a>
Google's Balance Sheet	<a href="https://finance.yahoo.com/quote/GOOG/balance-sheet">https://finance.yahoo.com/quote/GOOG/balance-sheet</a>
Google's cash Flow Statement	<a href="https://finance.yahoo.com/quote/GOOG/cash-flow">https://finance.yahoo.com/quote/GOOG/cash-flow</a>
Google's Share Price for Last 5 years	<a href="https://finance.yahoo.com/quote/GOOG/history?period1=1556938598&amp;period2=1714791395">https://finance.yahoo.com/quote/GOOG/history?period1=1556938598&amp;period2=1714791395</a>
Apple's Income Statement	<a href="https://finance.yahoo.com/quote/AAPL/financials">https://finance.yahoo.com/quote/AAPL/financials</a>
Apple's Balance Sheet	<a href="https://finance.yahoo.com/quote/AAPL/balance-sheet">https://finance.yahoo.com/quote/AAPL/balance-sheet</a>
Apple's cash Flow Statement	<a href="https://finance.yahoo.com/quote/AAPL/cash-flow">https://finance.yahoo.com/quote/AAPL/cash-flow</a>
Apple's Share Price for Last 5 years	<a href="https://finance.yahoo.com/quote/AAPL/history?period1=1556938798&amp;period2=1714791595">https://finance.yahoo.com/quote/AAPL/history?period1=1556938798&amp;period2=1714791595</a>

**Note** - I have meticulously prepared an Excel sheet where I consolidated all financial statements and conducted a detailed analysis, which includes various charts. Based on these visual representations, I have compiled a comprehensive report detailing my calculations and underlying assumptions. Additionally, I will provide an annual report highlighting relevant figures to further support the analysis.

For my project, the two companies which I have chosen are **Google** and **Apple**. Below is a brief overview of both companies, including their histories, stock tickers, and the sources of the financial data used in the analysis.

## **Google (Ticker: GOOGL)**



### **History and Overview:**

**Google LLC** is a multinational technology company that is a leader in Internet-related services and products, encompassing a range of sectors including online advertising technologies, search engine services, cloud computing, software, and hardware. Google was founded by Larry Page and Sergey Brin in September 1998 while they were Ph.D. students at Stanford University. They developed a new algorithm called PageRank, which was a new way to analyze the relationships between websites and became the foundation for Google's search engine.

Initially operating in a humble garage provided by a friend, the company has grown rapidly, becoming synonymous with Internet search and an integral part of everyday life for billions of users globally. Google is part of the Big Five technology companies in the U.S., which also includes Amazon, Apple, Microsoft, and Meta (formerly Facebook).

Google's innovations extend beyond software to hardware products like the Google Pixel series of smartphones, Google Home smart speakers, and the Google Nest line of home automation products. The company continues to lead in the development of AI and machine learning technologies, cloud services, and is pioneering efforts in areas like quantum computing and autonomous vehicles.

The company's approach to business with its famously unconventional corporate culture encourages creativity and innovation and remains a major part of its identity today. This includes famous principles like "You can make money without doing evil," "You can be serious without a suit," and "Work should be challenging, and the challenge should be fun."

These elements underscore Google's impact and its continued push towards expanding its technological horizons, consistently driving innovation across multiple sectors of the tech industry.

## Apple (Ticker: AAPL)



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### History and Overview:

**Apple Inc.** is an iconic American multinational technology company renowned for its innovative consumer electronics, software, and online services. Founded in April 1976 by Steve Jobs, Steve Wozniak, and Ronald Wayne in a garage in Los Altos, California, Apple was originally conceived to sell Wozniak's Apple I personal computer kit. These were hand-built by Wozniak and first showcased to the public at the Homebrew Computer Club. Apple was incorporated as Apple Computer, Inc., in 1977, after the introduction of the Apple II, one of the world's first highly successful mass-produced microcomputers.

Apple's software innovations are equally significant, with the development of macOS for its range of Mac computers, iOS for iPhones, iPadOS for iPads, watchOS for Apple Watches, and tvOS for Apple TV. Each of these platforms has fostered a rich ecosystem of applications and services tailored to deliver a seamless experience across Apple devices.

The company is also known for its dedicated approach to privacy and security, as well as its environmental efforts, such as running on 100% renewable energy for all its global facilities and ongoing initiatives to improve environmental sustainability.

Throughout its history, Apple has not only been a pioneer in technology but also in design, emphasizing aesthetic simplicity and a clean, minimalist look that has set industry standards. This philosophy, in conjunction with innovative technology, has made Apple one of the most valuable companies in the world, continuously influencing numerous sectors, including computing, mobile phones, music, and digital publishing.

## **Part 1 – Source of Data and Base Company**

### **Source of Data:**

The financial data for both Google and Apple used in this analysis has been extracted from the companies' most recent annual reports and supplemented with information from Yahoo Finance (YahooFinance.com). This ensures a comprehensive overview of their financial health and market performance, utilizing reliable and up-to-date sources.

### **Base Company: Google**

Google is the base company for the detailed financial analysis in this project. This decision enables a focused review of Google's strategies, financial outcomes, and market position, reflecting on how it maintains its leadership in the tech industry through innovation and expansion.

## Part 2 – Income Statement Analysis

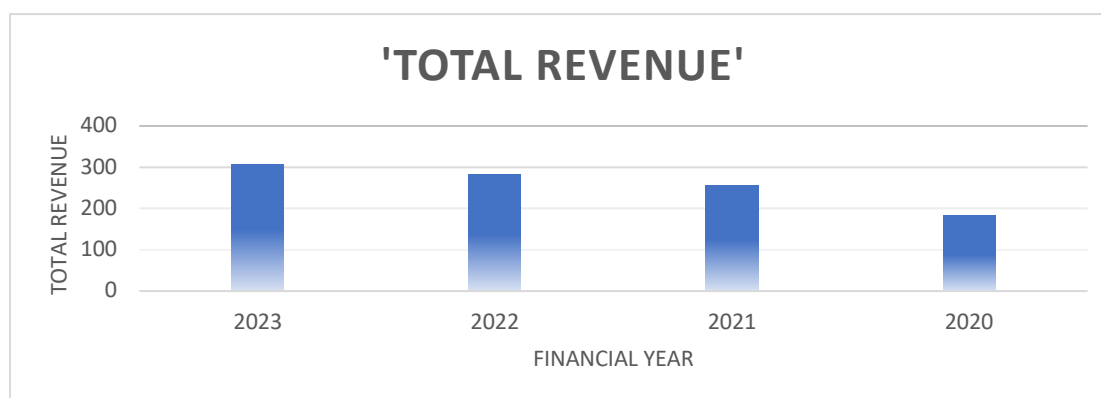
Analyzing Google's income statement for the fiscal years 2020 to 2023 provides insight into the company's financial performance over this period. We will focus on three key metrics: Total Revenue, Operating Income, and Net Income.

### A) Total Revenue

Total revenue is a key financial metric that represents the total amount of money generated by a company from its business activities, typically measured over a specific period, like a quarter or a year. For a company like Google, total revenue primarily comes from various sources such as advertising, cloud services, and sales of hardware and software products. Advertising, however, forms the largest portion of Google's revenue, stemming from its diverse range of platforms that include search, YouTube, and the Google Network Members' properties. The analysis of total revenue helps stakeholders understand the company's financial health and its ability to grow and generate profits over time.

Now, we will examine Google's total revenue from 2020 to 2023. Please note that these figures are sourced from Yahoo Finance and the annual financial statements of Google. (Figures in total revenue are in Thousands)

Google				
Financial Year	2023	2022	2021	2020
Total Revenue	307,394,000	282,836,000	257,637,000	182,527,000



#### Analysis:

From 2020 to 2023, Google's Total Revenue exhibited a robust upward trajectory, expanding from \$182.5 billion to \$307.4 billion. This growth represents a compound annual growth rate (CAGR) of approximately 18.5%, which is exceptional for a company of Google's size, operating in the mature tech sector. The surge in revenue in 2021, jumping nearly 41% from 2020, is particularly notable as it coincides with the global shift towards digital services amid the pandemic—highlighting Google's crucial role in digital advertising, cloud

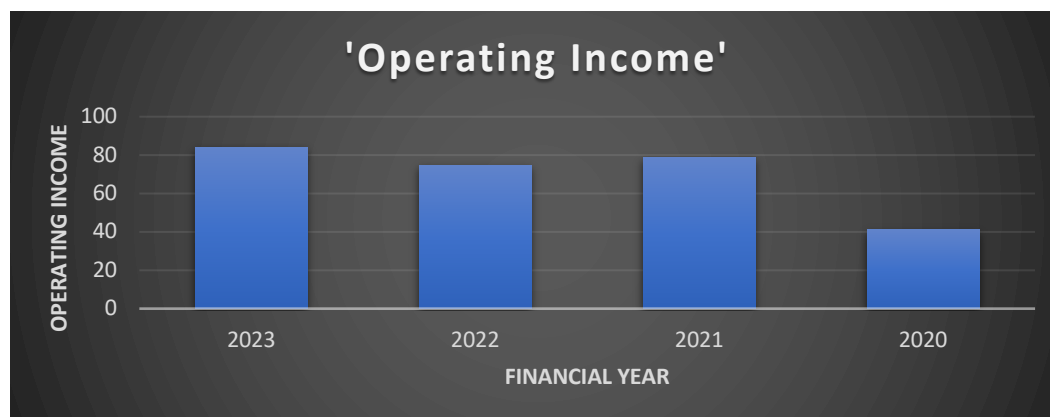
computing, and online content. The continued revenue growth in subsequent years suggests that Google has successfully retained the gains achieved during the pandemic and has effectively capitalized on the expansion of digital economies globally. This growth is not just a reflection of market conditions but also of Google's strategic initiatives such as expanding its cloud infrastructure, diversifying its advertising products, and enhancing its consumer and enterprise services.

## B) Operating Income

Operating income is a crucial financial metric that indicates the profit a company generates from its core business operations before subtracting interest and taxes. For a company like Google, operating income reflects the efficiency of its core operations, primarily its advertising and cloud businesses, after accounting for the associated costs and expenses. Analyzing Google's operating income provides insights into its operational effectiveness and profitability, showcasing how well it manages its core business activities relative to its revenues.

Now, we will examine Google's Operating Income from 2020 to 2023. Please note that these figures are sourced from Yahoo Finance and the annual financial statements of Google. (Figures in operating income are in Thousands)

Google				
Financial Year	2023	2022	2021	2020
Operating Income	84,293,000	74,842,000	78,714,000	41,224,000



### Analysis:

Google's Operating Income nearly doubled from \$41.2 billion in 2020 to \$84.3 billion in 2023, demonstrating significant improvements in operational efficiency and cost management. The increase in operating income, despite a dip in 2022, underscores Google's ability to manage its cost base even as it scales up operations. The dip in 2022 can be attributed to strategic investments in areas like artificial intelligence, quantum computing, and further expansion into cloud services. The rebound in 2023 indicates that these investments are beginning to bear fruit, enhancing Google's competitive edge and operational scalability. This suggests that Google's strategy is not only focused on

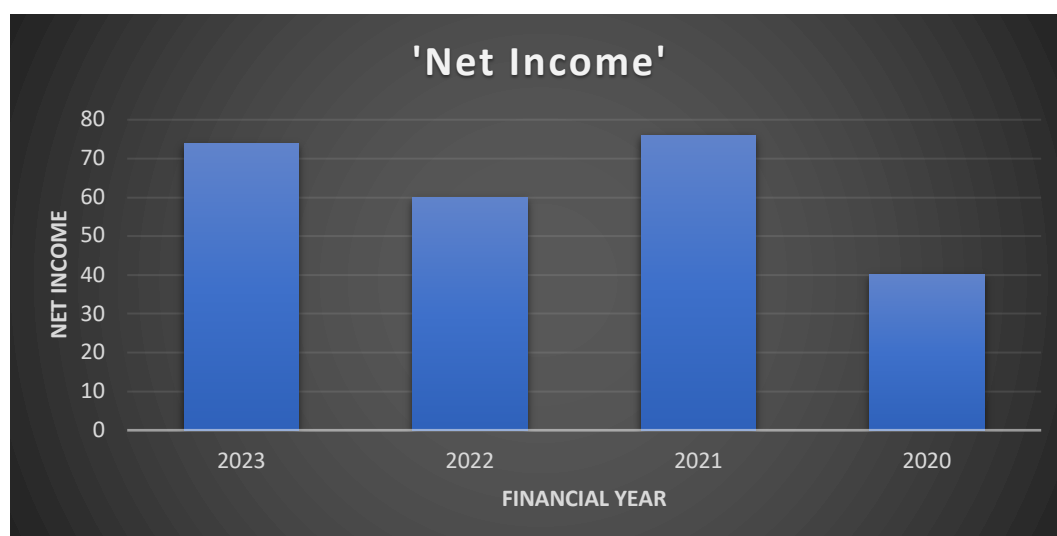
expansion but also on sustainability and long-term profitability, emphasizing strategic investments over short-term gains.

### C) Net Income

Net income is an essential financial metric that represents the total earnings of a company after all expenses, including taxes and interest, have been deducted from total revenue. For a company like Google, net income highlights the bottom-line profitability, showcasing the actual profit retained by the company after all operational, financial, and tax obligations have been met. It provides a clear picture of Google's financial health and efficiency, reflecting its ability to generate profit from its operations. Analyzing net income helps stakeholders understand the company's success in turning revenues into disposable earnings.

Now, we will examine Google's Net Income from 2020 to 2023. Please note that these figures are sourced from Yahoo Finance and the annual financial statements of Google. (Figures in Net Income are in Thousands)

Google				
Financial Year	2023	2022	2021	2020
Net Income	73,795,000	59,972,000	76,033,000	40,269,000



#### Analysis:

Net Income, the ultimate measure of profitability, presents a more nuanced view of Google's financial health. It rose from \$40.3 billion in 2020 to a high of \$76.0 billion in 2021, then experienced a drop in 2022 before recovering to \$73.8 billion in 2023. This fluctuation in net income reflects the impact of non-operating costs, including taxes and potential one-time charges or gains. The volatility in net income relative to the steady growth in revenue and operating income suggests that Google's financials might be sensitive to changes in tax regulations, currency fluctuations, and other external

economic factors. However, the overall upward trend in net income confirms that the core business remains exceedingly profitable and capable of sustaining profitability even amidst financial and economic shifts.

## **Conclusion**

Google's financial indicators from 2020 to 2023 demonstrate a company that is not only growing but also evolving. The company has effectively navigated global economic challenges, adapted to rapidly changing market demands, and strategically positioned itself for future growth. The financial data suggests that Google remains a dominant player in the tech industry, with a diversified business model that mitigates risks and capitalizes on new opportunities. Moving forward, stakeholders can likely expect continued growth, though it will be crucial for Google to maintain its innovative edge and adaptability in an increasingly competitive and regulated global market.



## Part 3 – Balance Sheet Analysis

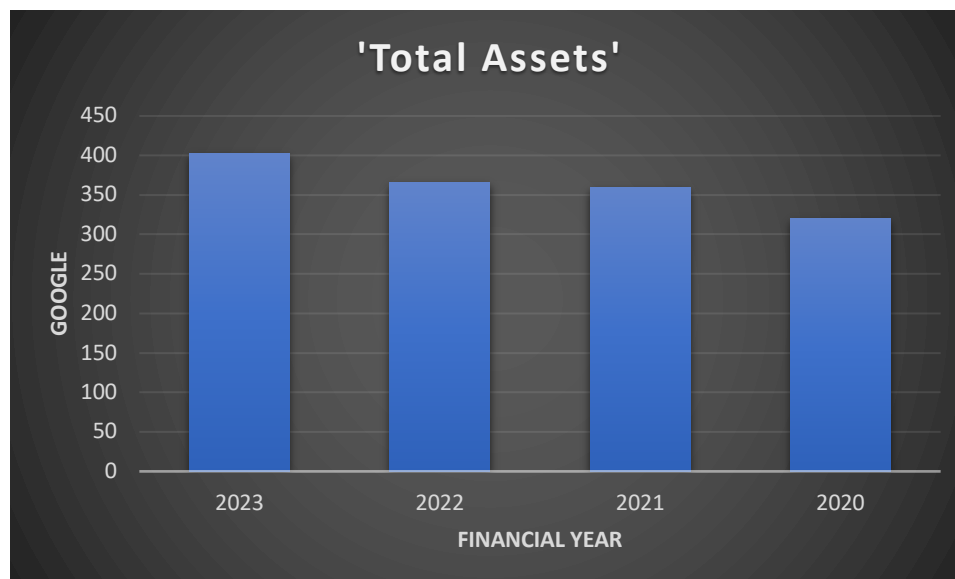
Analyzing Google's balance sheet for the fiscal years 2020 through 2023 provides valuable insights into its financial stability and growth. The key metrics for this analysis are Total Assets, Total Liabilities, and Shareholders' Equity. Here's a detailed look at each:

### A) Total Assets

Total assets represent the cumulative value of everything a company owns and can use to generate revenue. For a company like Google, total assets include physical assets like property and equipment, as well as intangible assets like intellectual property and goodwill. The total assets figure is a key component in understanding a company's size and financial strength, indicating the resources at its disposal to support operations, invest in new opportunities, and ensure long-term growth. Analyzing Google's total assets provides insight into the company's resource allocation and financial stability.

Now, we will examine Google's Total Assets from 2020 to 2023. Please note that these figures are sourced from Yahoo Finance and the annual financial statements of Google. (All Figures in are in Thousands)

Total Assets				
Financial Year	2023	2022	2021	2020
Google	402,392,000	365,264,000	359,268,000	319,616,000



### Analysis:

**Strategic Investments and Financial Health:** The data indicates a substantial investment phase in 2021 with a 12.42% increase in assets, reflecting Google's aggressive capital deployment into expanding its technological infrastructure and possibly

acquiring other strategic assets. This was likely driven by the acceleration of digital transformation trends during the COVID-19 pandemic, where Google saw opportunities to enhance its cloud computing capabilities, support remote work technologies, and expand its digital services. The more modest increase in 2022 (1.67%) suggests a period of consolidation, where Google might have focused on integrating its investments and improving operational efficiencies rather than acquiring new assets.

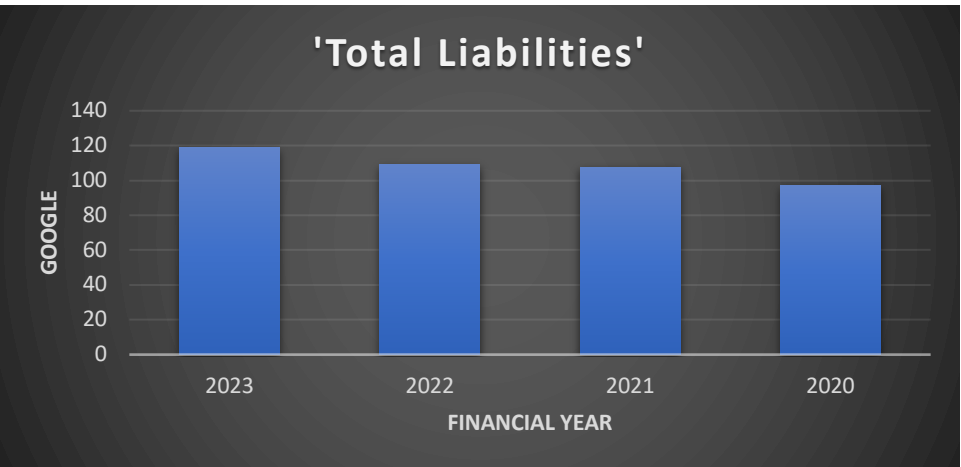
**Future Growth and Market Positioning:** The 2023 rebound in asset growth (10.16%) demonstrates a renewed commitment to aggressive expansion, potentially in response to emerging technological opportunities and market demands, such as advancements in AI, quantum computing, and possibly preparing for a post-pandemic economic recovery. This strategic accumulation of assets positions Google well for sustaining long-term growth, enabling the company to leverage its financial stability to take advantage of new business opportunities and maintain its leadership in the technology sector. The consistent increase in assets over the years not only bolsters Google’s market position but also enhances its ability to innovate and adapt to changing market conditions.

**B) Total Liabilities**

Total liabilities represent the cumulative obligations or debts a company owes and must settle. For a company like Google, total liabilities can include loans, accounts payable, deferred revenues, and other financial obligations. This figure is crucial for understanding the company's financial commitments and how these are managed in relation to its assets. Analyzing Google’s total liabilities helps assess the company's financial health, risk level, and its ability to meet financial obligations with its available resources.

Now, we will examine Google's Total Liabilities from 2020 to 2023. Please note that these figures are sourced from Yahoo Finance and the annual financial statements of Google. (All Figures in are in Thousands)

Total Liabilities				
Financial Year	2023	2022	2021	2020
Google	119,013,000	109,120,000	107,633,000	97,072,000



## **Analysis:**

### **1. Growth in Liabilities:**

- The liabilities grew by approximately \$10.6 billion from 2020 to 2021, which might be indicative of increased operational activities and possibly the accrual of obligations associated with expansion strategies like acquisitions or infrastructure development. This growth continued, though at a slower pace, through 2022 and 2023 with increments of about \$1.5 billion and \$9.9 billion, respectively.
- The increase in liabilities is consistent but not excessive, showing that Google manages its debt levels carefully, aligning them with its expansion goals and the acquisition of new assets.

### **2. Financial Strategy and Risk Management:**

- The steady rise in liabilities, when viewed in conjunction with the more substantial increase in assets, indicates a controlled approach to leveraging. Google is utilizing debt as a strategic tool to fuel growth without compromising its financial stability. The total liabilities in 2023 account for a significant sum, but when set against the backdrop of Google's total assets for the same year (\$402,392,000,000), the liabilities-to-assets ratio reflects a healthy balance, suggesting effective financial management and lower risk exposure.
- This measured increase in liabilities also demonstrates Google's ability to sustainably manage its financial commitments while investing in areas that promise high returns. It ensures that the company remains agile, able to respond to opportunities in the market, and secure in its ability to handle its obligations.

Google's approach to managing its liabilities is indicative of a well-orchestrated financial strategy that supports its long-term growth objectives while maintaining a strong balance sheet. The increasing liabilities are balanced by even greater asset growth, ensuring the company's continued financial health and its capability to meet future financial obligations. This strategic financial management positions Google favorably for ongoing innovation and market expansion, keeping its risk levels manageable despite its aggressive growth strategies.

## C) Shareholders' Equity

Shareholders' equity, also known as net assets, represents the residual interest in a company's assets after deducting its liabilities. For a company like Google, shareholders' equity consists of capital contributed by the owners plus retained earnings and other reserves. This metric is crucial for understanding the company's financial health, as it reflects the total value that shareholders would theoretically receive if all assets were liquidated, and all debts were paid. Analyzing Google's shareholders' equity helps assess the company's financial stability and efficiency in generating value for its shareholders.

Now, we will examine Google's Shareholders Equity from 2020 to 2023. Please note that these figures are sourced from Yahoo Finance and the annual financial statements of Google. (All Figures are in Thousands)

Shareholders' Equity				
Financial Year	2023	2022	2021	2020
Google	283,379,000	256,144,000	251,635,000	222,544,000



### Analysis:

These figures indicate a positive and steady growth in Google's shareholders' equity over the four-year period, suggesting a strong financial foundation and an increasing intrinsic value of the company.

### Detailed Analysis:

#### 1. Yearly Growth Overview:

- From 2020 to 2021, shareholders' equity increased by \$29.1 billion, marking a significant rise that can be attributed to the

company's robust earnings and possibly conservative dividend policies which allow more profits to be retained. This period likely reflects a strong recovery and growth post the initial impacts of the COVID-19 pandemic, showcasing effective management and operational efficiency.

- The growth from 2021 to 2022 was more modest, with an increase of about \$4.5 billion. This slower pace might reflect a period of stabilization or significant reinvestments back into the company which tempered the net increase in equity.
- The substantial increase in 2023 by \$27.2 billion suggests strong financial performance and potentially high retained earnings, indicative of Google's strategic expansions and possibly successful product and service launches, reflecting well on its operational initiatives and market strategies.

## **2. Implications and Strategic Insights:**

- The consistent increase in shareholders' equity is a positive sign for investors and stakeholders, suggesting that Google is not only growing but also maintaining a healthy balance between profitability and reinvestment. A rising shareholders' equity indicates that the company is effectively generating value and managing its resources in a way that enhances the wealth of its owners.
- This growth supports the notion that Google is successfully navigating market challenges and seizing opportunities for expansion and innovation, particularly in areas like artificial intelligence, cloud computing, and other tech-driven sectors. The increase in equity also implies that Google has sufficient financial flexibility to sustain its operations, explore new ventures, and withstand economic fluctuations without compromising its financial health.

Overall, the increase in Google's shareholders' equity from 2020 to 2023 reflects a company that is robustly positioned in terms of financial stability and capable of sustaining growth. This trend is indicative of Google's strong operational performance and strategic foresight in capital allocation, ensuring ongoing value creation for its shareholders.

## Part 4 – Investing and Financing Activities Analysis

### A) Investing Activities

For Google, the two largest investing activities in the most recent year seem to be Maturities and sales of marketable securities and Purchases of non-marketable securities:

(Figures are in Millions)

Description	2021	2022	2023
Maturities and sales of marketable securities	128,294	97,822	86,672
Purchases of non-marketable securities	-2,838	-2,531	-3,027

1. **Maturities and sales of marketable securities:** This activity involves Google selling or cashing in on its investments in marketable securities. In the most recent year, this amounted to \$86,672 million.
2. **Purchases of non-marketable securities:** Google also made investments in non-marketable securities, although it seems to be reducing these investments as indicated by negative values. In the most recent year, this activity amounted to - \$3,027 million, implying a reduction in such investments.

The investment activities of Google, as detailed in the figures for maturities and sales of marketable securities and purchases of non-marketable securities, reflect a strategic approach to portfolio management that could be viewed favorably for several reasons:

1. **Optimizing Liquidity and Returns:** The significant activity in maturities and sales of marketable securities, totaling \$86,672 million in the most recent year, suggests Google is actively managing its liquidity. This could indicate a strategy to optimize returns on idle cash or reallocate resources to higher-yielding opportunities. It shows prudence, especially in a potentially volatile market environment, by ensuring that the company is not overly exposed to market fluctuations and has sufficient liquidity available for operational needs or new opportunities.
2. **Strategic Long-term Investments:** The data on purchases of non-marketable securities, although showing a reduction (reflected by the negative figure of - \$3,027 million), indicates ongoing interest in long-term strategic investments. This suggests that Google is selective in its long-term investments, possibly focusing on opportunities that align closely with its core business objectives and future growth areas. This cautious approach to long-term investments is prudent, especially if Google is aiming to enhance its technological edge or enter new markets.

## Opinion on Google's Investment Activities:

Based on the above analysis, I would **agree** with Google's current investment activities. The strategy demonstrates a balanced approach between maintaining liquidity through marketable securities and pursuing growth through strategic long-term investments. This balance is crucial for sustaining business operations while also investing in future growth, which could potentially offer higher returns. Moreover, the careful management of non-marketable securities indicates a focus on quality over quantity in long-term investments, which can be more beneficial in the long run.

In conclusion, Google's investment activities appear to be well-structured and thoughtfully aligned with both its immediate financial health and long-term strategic goals. This approach should inspire confidence in its ability to manage resources effectively amidst changing economic conditions.

## B) Financing Activities

For Google, the two largest Financing activities in the most recent year seem to be Maturities and sales of Repurchases of stock and Purchases of non-marketable securities:

(Figures in are in Millions)

Description	2021	2022	2023
Repurchases of stock	-50,274	-59,296	-61,504
Repayment of Debt	- 21,435	- 54,068	- 11,550

## Analysis of Financing Activities

- Stock Repurchases:** Stock repurchases have increased consistently from \$50,274 million in 2021 to \$61,504 million in 2023. This indicates Google's confidence in its own financial health and future prospects, suggesting that the company believes its stock is undervalued or that it is seeking to return wealth to shareholders in a way that might also enhance earnings per share. Repurchasing stock can reduce the total number of outstanding shares, potentially boosting the share price and earnings per share, which benefits remaining shareholders.
- Debt Repayment:** The significant repayment of debt in 2022 (\$54,068 million), followed by a smaller amount in 2023 (\$11,550 million), reflects a strategic management of debt levels. This decision could be motivated by a desire to reduce

interest expense and leverage, enhancing financial stability and reducing risk. The large repayment in 2022 may also suggest that Google took advantage of favorable market conditions or specific financial strategies such as refinancing to manage its debt more effectively.

## **Opinion on Google's Investing and Financing Strategies**

The combination of aggressive stock repurchases, and substantial debt repayments indicates a proactive approach to managing both its capital structure and shareholder returns. This strategy suggests several positive attributes:

- **Strong Cash Flow Management:** Google is utilizing its substantial cash reserves to fund both stock repurchases and debt repayments, which demonstrates strong liquidity and cash flow management.
- **Shareholder Value Focus:** By repurchasing shares, Google is potentially enhancing shareholder value through higher earnings per share and possibly higher stock prices, which can make it more attractive to investors.
- **Risk Management:** Reducing debt, especially after a year of large debt repayment, can decrease financial risk and improve the company's credit rating, making future borrowing less expensive if needed.

**Conclusion:** I would **agree** with Google's current investing and financing strategies. These actions indicate a well-considered approach to capital management that seeks to balance risk with opportunities to enhance shareholder value. This strategy not only reflects confidence in the company's ongoing profitability and operational efficiency but also aligns with ensuring long-term sustainability and growth in shareholder wealth.



## Part 5 – Analyzing items beyond Financial Statement

When considering whether to invest in a company like Google or Apple, financial statements provide a wealth of data, but they don't tell the whole story. Investors often need to look beyond traditional financial metrics to make informed decisions. Here are two critical items not directly derived from financial statements that would be important to consider:

### 1. Market Trends and Industry Position

- **Reasoning:** Understanding the broader market trends and the company's position within the industry can provide insights into potential growth opportunities or risks that are not immediately apparent from financial statements alone. For example, Google and Apple operate in highly competitive and rapidly evolving industries. Knowing how these companies are positioned in terms of market share, their role in emerging technologies (like AI or health tech), and how they adapt to regulatory changes can significantly impact an investor's perception of their future profitability and sustainability.

- **Example:** Google's leadership in search and advertising and its ventures into cloud computing and consumer hardware could be seen as strengths, whereas regulatory scrutiny in multiple countries could pose risks. Similarly, Apple's dominant position in consumer electronics and its growing services sector (like Apple Music and Apple Pay) bolster its outlook, but market saturation in smartphones could be a concern.

### 2. Research and Development (R&D) Spend

- **Reasoning:** The amount a company invests in R&D can indicate its commitment to innovation and long-term growth. This is especially crucial in technology industries, where rapid innovation is key to maintaining competitive advantages. Financial statements do show R&D expenses but analyzing these numbers in relation to the company's innovation output (like patents filed, new products launched) can provide deeper insights.

- **Example:** Apple's consistent investment in R&D has led to the development of proprietary chips and new product categories such as wearable technology, which might predict future revenue streams not currently reflected in financial metrics. Google's investments in areas like artificial intelligence and quantum computing could secure its leadership in these fields, affecting long-term profitability.

These elements, while not directly derived from financial statements, are crucial for providing a more comprehensive view of a company's potential for growth and stability, supplementing traditional metrics like Return on Equity (ROE) and Price-to-Earnings (P/E) ratios. For instance, Google's relatively stable and improving ROE and P/E ratios suggest efficiency and market confidence, respectively, but evaluating their R&D and market position offers insights into whether these trends might continue. Similarly, Apple's high ROE and P/E indicate strong market performance and investor expectations, which must be balanced with understanding its innovation cycle and market saturation risks.

Further we will also discuss Return on Equity (ROE) and Price-to-Earnings (P/E) ratios for both Google and Apple.

## Return on Equity (ROE)

**Return on Equity (ROE)** measures a company's profitability by revealing how much profit a company generates with the money shareholders have invested. It's a direct reflection of the company's efficiency in using equity to generate profits.

### ROE Data

- **Google:**
  - 2023: 26.04%
  - 2022: 23.41%
  - 2021: 30.22%
  - 2020: 18.09%
- **Apple:**
  - 2023: 156.08%
  - 2022: 196.96%
  - 2021: 150.07%
  - 2020: 87.87%

### Analysis:

- Apple consistently shows a significantly higher ROE compared to Google, indicating a more efficient use of shareholder equity to generate profits. This suggests Apple's operations and asset management are highly effective, albeit also reflecting its capital structure that might involve lower equity levels compared to total capital.
- Google's ROE is lower than Apple's but shows a healthy upward trend from 2020 to 2023, except for a peak in 2021. This indicates improving efficiency and profitability over time.

## Price-to-Earnings (P/E) Ratio

**Price-to-Earnings (P/E) Ratio** is a measure of the price paid for a share relative to the annual net income or profit earned by the firm per share. A high P/E ratio could mean that a company's stock price is high relative to earnings and possibly overvalued.

### P/E Ratio Data

- **Google:**
  - 2023: 24.13
  - 2022: 19.33
  - 2021: 25.66
  - 2020: 29.59
- **Apple:**
  - 2023: 27.72
  - 2022: 22.28
  - 2021: 24.61
  - 2020: 34.28

**Analysis:**

- Both companies show fluctuations in their P/E ratios over the years, which reflects changing market expectations about future earnings growth and general market conditions.
- Apple typically has a higher P/E ratio compared to Google, suggesting that investors are willing to pay a premium for Apple's earnings, possibly due to its strong brand, consistent product demand, and robust financial performance.
- Google's P/E ratio, while lower than Apple's, suggests a more conservatively valued stock which might be attractive to investors looking for growth at a reasonable price, especially given its leadership in essential digital services and advertising.

**Investment Consideration**

- **Apple's high ROE and P/E ratio** signal strong market confidence and operational efficiency, but the high valuation might also pose risks of overvaluation, especially in volatile markets.
- **Google's slightly lower ROE and more conservative P/E ratio** suggest a potentially safer investment from a valuation standpoint, with solid growth prospects given its expansive market influence and innovation capabilities.

Investors should consider these metrics in the context of their investment strategy and risk tolerance. Apple might appeal to those seeking growth and are comfortable with high valuation, while Google might attract those looking for a stable investment with reasonable growth prospects.

## Part 6 – Analyzing Financial Statement

After analyzing the latest annual reports of Apple and Google, including their financial statements, here are the insights and comparisons based on the financial metrics and broader company assessments:

### Earnings Per Share (EPS)

- **Apple:** The diluted EPS for Apple in 2023 was \$6.13.
- **Google:** The diluted EPS for Google in 2023 was \$5.80.

Apple shows a higher EPS, indicating more earnings per share compared to Google, which is often a favorable indicator for investors as it suggests the company is generating more profit per share of stock held.

### Debt-to-Equity Ratio

This ratio measures a company's financial leverage, calculated by dividing its total liabilities by its shareholders' equity. It's a measure of the degree to which a company is financing its operations through debt versus wholly-owned funds.

- **Apple:** Apple's total debt was reported at \$106,572 million with shareholders' equity at \$62,146 million, leading to a debt-to-equity ratio of approximately 1.71.
- **Google:** Google's total debt was significantly lower at \$14,746 million with a much higher shareholders' equity of \$222,527 million, giving a debt-to-equity ratio of about 0.07.

Google has a much lower debt-to-equity ratio compared to Apple, indicating a less aggressive use of debt in financing its growth, which generally represents a lower risk to shareholders.

### Investment Decision

Based on the financial analysis:

- **Apple** demonstrates strong profitability as shown by its higher EPS. However, its higher debt-to-equity ratio could be seen as a riskier investment, which might not be preferable for risk-averse investors.
- **Google** shows slightly lower profitability in terms of EPS but has a much stronger balance sheet with a lower debt-to-equity ratio, indicating a conservative approach to leverage and potentially lower financial risk.

## **Additional Considerations Beyond Financials:**

### **1. Market Position and Innovation:**

**Google:** Invests heavily in future technologies like artificial intelligence, cloud computing, and autonomous vehicles, potentially opening up new markets and revenue streams.

**Apple:** Known for its innovation in consumer electronics, with strong product ecosystems around the iPhone, iPad, and Mac, fostering high customer retention and loyalty.

### **2. Revenue Streams:**

**Google:** Benefits from diverse revenue sources, including digital advertising, cloud services, and hardware, with a significant portion coming from its search engine business.

**Apple:** Relies heavily on its hardware sales, particularly the iPhone, but has been expanding its services division, which includes Apple Music, iCloud, and Apple Pay, contributing to more stable revenue flows.

### **3. Regulatory Risks:**

**Google:** Faces more significant regulatory challenges, particularly concerning data privacy, use of consumer data, and its dominant position in search and advertising.

**Apple:** Encounters regulatory scrutiny primarily around app store practices and competitive behavior, with increasing focus on consumer privacy protections.

### **4. Global Supply Chain:**

**Google:** Less dependent on hardware supply chains compared to Apple, which may reduce vulnerability to global logistics disruptions.

**Apple:** Heavily dependent on manufacturing in China and other parts of Asia, making its supply chain susceptible to disruptions from tariffs, trade wars, and pandemics.

### **5. Sustainability and Corporate Social Responsibility (CSR):**

**Google:** Strong focus on sustainability, aiming to operate on carbon-free energy 24/7 by 2030, and significant investments in renewable energy.

**Apple:** Committed to becoming 100% carbon neutral across its entire business, manufacturing supply chain, and product life cycle by 2030.

## 6. Customer Base:

**Google:** Broad and diverse customer base through its services like Google Search, YouTube, and Google Cloud, appealing to individual consumers, small businesses, and large enterprises.

**Apple:** Maintains a premium brand image that appeals to a wealthier demographic, ensuring strong profit margins even with a more limited customer base.

## 7. Brand Strength and Loyalty:

**Google:** Strong brand associated with innovation and accessibility in technology, pivotal in maintaining its leadership in search and growing its presence in other sectors.

**Apple:** Exceptional brand loyalty, attributed to its integrated product ecosystem and reputation for quality and design, encouraging consistent customer spending on new products and services.

## Conclusion

Both companies present strong cases for investment based on different criteria. Google's broader approach to revenue diversification and investment in future technologies may appeal to those looking for growth and innovation, while Apple's strong brand loyalty, premium market positioning, and expanding services sector provide a more stable investment with reliable returns. The choice between the two could depend on the individual investor's risk tolerance, market outlook, and specific financial goals.