UNIVERSITY OF PATRAS
ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΑΤΡΩΝ

Business Financial Analysis

Proffesor: Tzelepis Dimitris

BUSINESS ANALYSIS PROJECT

Androutsos Christos

Panou Panagiotis

Alphabet

Contents:

Introduction

Alphabet Inc. is a global American technology holding company with headquarters in Mountain View, California. It was founded on October 2, 2015 through a restructuring of Google and became the parent company of Google and numerous previous Google subsidiaries (some of the most recognizable brands in the world, such as Google Chrome, Google Drive, Google Maps, YouTube, Android, and many more). Alphabet is the third-largest technology corporation in the world by revenue and one of the most valuable companies in the world. With Amazon, Apple, Meta, and Microsoft, it is one of the Big Five U.S. information technology corporations. The formation of Alphabet Inc. was motivated by a desire to make Google's core business "cleaner and more accountable" while granting greater autonomy to subsidiaries that operate in industries other than Internet services.

Section 1. The company Alphabet INC.

1. Historical review

Regarding the company Alphabet INC. making a historical review we notice initially that in August 10, 2015 Google announces plans to create a new public holding company called Alphabet Inc., which would restructure Google by moving some of its subsidiaries to Alphabet. Then in October 2, 2015 the restructuring process is completed, with Alphabet becoming the owner of Google instead of the other way around. Alphabet retains Google's stock price history and ticker symbols. Afterward in December 3, 2019 Larry Page and Sergey Brin announce they will step down from their respective roles at Alphabet, with Sundar Pichai becoming the CEO of both Alphabet and Google. In Mid-2022: Alphabet completes a stock split. And finally in January 20, 2023 Pichai announces that Alphabet will be laying off about 12,000 jobs, or 6% of its global workforce, due to a change in economic reality.

2.Industry Analysis

Porter's Five Forces is a framework for examining an industry's competitive environment. There are five forces:

Threat of New Entrants:

Threat of New Entrants: This factor examines the ease or difficulty of market entry for new rivals. Due to the enormous capital requirements and the necessity to invest extensively in development and research, the technology industry has high entry barriers. In this aspect, Alphabet Inc. has a competitive advantage because it has already established itself as a dominating competitor in multiple markets, making it difficult for new entrants to compete.

Bargaining Power of Suppliers:

Suppliers have bargaining power when their relative size, experience, or other factors give them significant clout over firms. There are several suppliers of components and software in the technology business, which weakens the bargaining strength of any individual source. In addition, due to its size and market position, Alphabet Inc. has substantial bargaining power, allowing it to negotiate favorable terms with its suppliers.

Bargaining Power of Buyers:

Buyers have bargaining power when they have the ability to influence prices or quality. In the technology industry, buyers are typically fragmented and have limited bargaining power. However, Alphabet Inc. faces some bargaining power from advertisers, who may negotiate prices and demand quality assurance for ad placements.

Threat of Substitutes:

The threat of substitutes takes into account the ease with which customers can move to other products or services. There are several alternatives in the technology business, including rival search engines, video sharing sites, and social media networks. Yet, Alphabet Inc. has established great brand recognition and customer loyalty, which makes it difficult for customers to migrate to competitors.

Rivalry Among Existing Competitors:

Due to the vast number of companies and the rapid rate of innovation, the level of competition among current competitors in the technology business is intense. Alphabet Inc. has built up a dominant position in a number of areas, including search engines, internet advertising, and autonomous driving.

Alphabet Inc. confronts a moderate level of threat from new entrants and negotiating power from advertising, but it has substantial bargaining power with suppliers and a great competitive advantage in existing areas. The threat of substitutes is rather strong, but Alphabet Inc. is protected by customer loyalty and brand familiarity. Existing competitors engage in intense competition, but Alphabet Inc. has established itself as a dominating player in multiple areas.

3.Competitive Strategy Analysis

Alphabet Inc. employs a strategy of differentiation in the internet advertising business. Google provides advertising that is highly targeted and customised based on user data and search history. Many research project and acquisitions in emerging technologies such as artificial intelligence, virtual reality, and quantum computing demonstrate Alphabet Inc.'s commitment to innovation. Investments in innovation have helped the company to remain at the forefront of the technology industry and consistently deliver new goods and services to the market.

4.Corporate Strategy Analysis

Companies with multiple business segments require an analysis of how the individual segments are managed within the corporate governance structure. Factors to be analyzed include transaction costs and special benefits of operating under a corporate 'umbrella'.

Alphabet Inc. is a holding company that owns several subsidiaries, including Google LLC. Google provides a wide range of internet-related services and products, including these referred bellow. Moreover, in addition to Google, Alphabet also owns several other companies. The main Alphabet's companies and Google services are the following which are active in different sectors as presented.

- Search Engine (Technology) – Google. Google is one of Alphabet's largest subsidiaries and is primarily focused on internet-related services and products, such as search, advertising, and various applications and platforms like Google Maps, YouTube, and Android. Google's search engine is its flagship product and is one of the most widely used search engines in the world. Google's search engine uses advanced algorithms and machine learning to provide highly relevant search results to users.
- Cloud Computing (Technology) - Google Cloud. Google Cloud provides cloud computing services to businesses, including infrastructure, data analytics, and machine learning tools. Google Cloud's services are designed to help businesses scale their operations and improve efficiency by providing access to powerful computing resources and advanced data analytics tools. Google Cloud is one of the top cloud computing providers in the world.
- Advertising (Marketing) - Google Ads. Google Ads is Google's advertising platform that allows businesses to create and display ads on Google's search engine and other platforms. Google Ads uses sophisticated targeting and bidding algorithms to ensure that businesses' ads are displayed to the most relevant audiences and generate maximum ROI. Google Ads is one of the largest and most successful online advertising platforms in the world.
- Smart Home Devices (Hardware) – Nest. Nest is Alphabet's smart home devices subsidiary, which offers a range of products, including smart thermostats, security cameras, and smoke detectors. Nest's products are designed to make homes more comfortable, secure, and energy-efficient by leveraging advanced technology and data analytics.
- Self-Driving Cars (Automotive) – Waymo. Waymo is Alphabet's self-driving car subsidiary, which is focused on developing autonomous vehicle technology and transportation services. Waymo's technology uses advanced sensors, machine learning, and AI algorithms to enable vehicles to navigate roads and highways without human intervention. Waymo is considered again one of the leaders in the autonomous vehicle industry.

- E-commerce (Retail) - Google Shopping. Google Shopping is Google's e-commerce platform that allows businesses to list and sell their products directly to consumers. Google Shopping uses advanced product matching algorithms to display relevant products to users based on their search queries and interests. Google Shopping allows businesses to reach a large audience of potential customers and increase their online sales when allows users to search for products on online shopping websites and compare prices between different vendors.
- Online Video (Entertainment) – YouTube. YouTube is Google's online video platform, which allows users to upload, share, and view videos. YouTube is one of the largest online video platforms in the world, with billions of users and millions of videos uploaded every day. YouTube's algorithms use advanced machine learning to recommend videos to users based on their viewing history and interests.
- Mobile Operating Systems (Technology) – Android. Android is Google's mobile operating system that powers a wide range of mobile devices, including smartphones and tablets. Android is an open-source operating system, which means that anyone can use and modify its source code. Android's open-source nature has led to its widespread adoption among device manufacturers, making it the most popular mobile operating system in the world.
- Artificial Intelligence (Technology) – DeepMind. DeepMind is Alphabet's artificial intelligence (AI) research subsidiary, which is focused on developing advanced AI algorithms and systems. DeepMind's research is focused on various areas of AI, including machine learning, computer vision, natural language processing, and robotics.
- Life Sciences (Healthcare) – Verily. Verily is Alphabet's life sciences subsidiary, which is focused on developing technology and products for healthcare and medical research. Verily's products and services include wearables, diagnostics, clinical tools, and data analytics solutions. Verily's focus is on leveraging advanced technology and data analytics to improve people's health and wellbeing.
- Autonomous Drones (Technology) – Wing. Wing is Alphabet's subsidiary that is focused on developing autonomous drone technology and services. Wing's drones are designed to deliver goods and products to consumers and businesses quickly and efficiently. Wing's technology uses advanced algorithms and sensors to navigate obstacles and ensure safe and reliable delivery of packages.
- Virtual Assistant (Technology) - Google Assistant. Google Assistant is Google's virtual assistant that uses voice recognition and natural language processing to understand and respond to users' commands and queries. Google Assistant is available on various devices, including smartphones, smart speakers, and smart home devices. Google Assistant's advanced AI algorithms enable it to provide personalized and context-aware responses to users' queries.
- Healthcare Technology (Healthcare) – Calico. Calico is Alphabet's subsidiary that is focused on developing technology and products for the healthcare industry, with a particular focus on aging-related diseases. Calico's research is focused on

understanding the biology of aging and developing interventions to extend human lifespan and improve health. Calico is working with various partners, including pharmaceutical companies and academic institutions, to bring its products and services to market.

- High-Speed Internet (Technology) - Google Fiber. Google Fiber is Google's subsidiary that provides high-speed internet services to consumers and businesses. Google Fiber's services are designed to provide faster and more reliable internet access to users, particularly in areas where traditional internet providers are not available or offer slow and unreliable service. Google Fiber is currently available in select cities across the United States.
- Renewable Energy (Energy) - Google Energy. Google Energy is Alphabet's subsidiary that is focused on investing in and developing renewable energy projects. Google Energy's projects include wind, solar, and geothermal energy, as well as energy storage solutions. Google Energy's focus on renewable energy reflects Alphabet's commitment to sustainability and reducing its carbon footprint.

In conclusion, Alphabet is a highly diversified company that operates in a wide range of sectors, including technology, healthcare, energy, e-commerce, automotive, retail and more. Alphabet's flagship business, Google, dominates the search engine and advertising markets, while its subsidiaries and ventures are developing innovative technologies and products that have the potential to revolutionize industries and improve people's lives. We conclude that Alphabet's corporate strategy is focused most on leveraging its data and technology to provide innovative products and services. Alphabet's focus on sustainability, innovation, and impact makes it a unique leader in the corporate world, and its diverse portfolio of businesses allows it to explore new opportunities for growth and impact across various industries.

Section 2 – Accounting analysis

The purpose of accounting analysis is to evaluate the degree to which a firm’s accounting captures its underlying business reality. By identifying places where there is accounting flexibility, and by evaluating the appropriateness of the firm’s accounting policies and estimates, analysts can assess the degree of distortion in a firm’s accounting numbers. So and in this case reference will be made to the accounting policies followed by the company in terms of depreciation, intangible assets and the valuation of its stocks and the opinions of the company's auditors will also be mentioned.

In general, for all three years 2019, 2020, 2021, we observe that Alphabet carries out acquisitions and purchases of intangible assets net of cash acquired. These acquisitions generally enhance the breadth and depth of its offerings and expand its expertise in engineering and other functional areas. The pro forma results of operations for these acquisitions have not been presented because they are not material to the consolidated results of operations, either individually or in the aggregate. For all intangible assets acquired and purchased patents and developed technology are worth mentioning as having a weighted average useful life of 4.1 years, customer relationships have a weighted average useful life of 4.7 years and trade names and others have a weighted average useful life of 4.6 years.

1.Reports of Chartered Accountants

As is well known, all businesses are subject to both internal and external audits. Each year the company must present an audit report by an independent chartered accountant regarding its activity and this is included in the annual financial report. Regarding these reports for the Alphabet. INC company, regarding the opinion of the auditors (report of Ernst & Young) on the Financial Statements, the following are mentioned. Having reviewed the attached consolidated balance sheets of Alphabet Inc. as at 31 December 2019 2020 and 2021 the relevant consolidated statements of income, comprehensive income, equity and cash flows for each of the three years and the related notes and schedule of financial statements referred to present fairly, in all material respects, the financial position of the Company and its results of operations and cash flows for each of the three years in the period that according to the U.S. accepted accounting principles.

As for the loss contingencies they mentioned that the company is regularly subject to claims, lawsuits and government investigations involving competition, intellectual property, privacy, consumer protection, taxation, labor and employment, commercial disputes, content generated by its users, goods and services offered by advertisers or publishers using their platforms, and others issues. Such demands could have adverse consequences. Management's audit and disclosure of loss contingencies from these matters involved the auditor's questioning and subjective judgment in evaluating the Company's assessment of the likelihood of loss and the estimated amount or range of loss. No serious observations were found in general.

Section 3 - Profitability Analysis

All presented results are sown analytically in the last page of our this section where is the excel table, and from where we have extracted our results.

Financial ratios, which are the most prevalent method for interpreting a company's financial data, can be utilized to conduct a financial analysis. This evaluation is known as ratio analysis. The indicators provide information regarding the business's performance and the correctness as well as effectiveness of its management's policies. In general, a ratio refers to the ratio of one size of a company's accounting statements to another size of the same statements. The outcome of this division is a percentage that may be compared to the equivalent percentages of other companies in the same industry. Indicators are important because they are the only way that allows:

a) The management of economic efficiency in all its manifestations, including formation of business assets and commercial activities.

b) The comparison of economic efficiency in its various forms, both between different (in any case comparable) companies at the same point in time and thereby demonstrating the relative position of each, and within the same company at different points in time and demonstrating the evolution of economic efficiency in its various forms, over time. Managers can employ four levers to achieve a company's development and profit objectives, and hence, ratio analysis attempts to evaluate the company's performance in these areas: operating management, investment management, financing strategy and dividend policy. Hence, the findings of the analysis of financial indicators allow us to evaluate the position-performance of an economic unit, identify problems requiring attention, and forecast its future course. These are the index categories:

• Liquidity Ratios

• Activity Indicators regarding liquidity

• Performance Indicators

• Debt or Leverage Ratios

1.Return On Equity Index (ROE)

The return on equity ratio is a financial indicator that expresses a company's earnings utilization efficiency as a percentage. It is one of the primary metrics used to determine a company's efficiency, i.e., how much profit it can make with the resources invested by its shareholders (equity) and its reserves. Typically, investors seek out organizations having a high and rising return on equity. As defined below:

$$ROE = \frac{Profit\ or\ loss}{Shareholders'\ equity}$$

In this instance and for the company Alphabet, the ROE ratio for 2019 is 17.05 percent, which indicates that the company generated a 17.05 percent return on equity (funds that shareholders invested in the company). The return for the year 2020 is 18.09%, while the return for the year 2021 is 30.22%. Specifically, the corporation had a return on investment of 17,05, 18,09, and 30,22 dollars every $100 invested in 2019, 2020, and 2021, respectively. We observe that in 2019 the index reaches its lowest value, which suggests that investors - shareholders - will have to contribute more in order to finance the company's growth.

2.Decomposing Profitability: Traditional And Alternative Approach

There are two ways to dissect a company's profitability: the traditional and the alternative.

Return on Equity, using the traditional approach, can reveal whether the recent improvements in the company's financial picture are due to an increase in debt or to more effective management. It is defined as the product of the Return on Assets (ROA) and the financial leverage or Equity Multiplier.

$$ROE = ROA * Equity\ multiplier = \frac{Profit\ or\ Loss}{Total\ assets} * \frac{Total\ assets}{Equity}$$

In the alternative ROE approach, the following formula is used:

$$ROE = Return\ on\ Bussiness\ Assets + Spread * Financial\ leverage$$

3.Net profit margin index

This ratio relates the net profit to the company's sales and is an indicator of the company's operating profitability. Net earnings are earnings after taxes and before dividends on preferred and common stock. In conclusion, the net profit margin ratio demonstrates the business's prudent management and organization. It provides us with information regarding the operating profit. The greater the net profit margin, the more profitable the organization.

In 2019, the aforementioned ratio equals 21.2%, indicating that dollars in sales yield 21.2% in terms of earnings. The following year, the index increased to 22.1%, causing the earnings yield to increase as well. In 2021, the index will increase again, reaching 29.5%.

4.Assets turnover index

This index indicates the effectiveness of a company's asset management in increasing sales. It is an indicator that gauges the efficiency of the business's investments in terms of sales. The greater the ratio, the greater the company's usage of its assets for sales. Otherwise, the corporation uses its assets to a lesser extent, so liquidating a portion of its assets might be a solution.

In 2019, this indicator is equal to 0.59 for our company, meaning that every dollar spent in assets generates 0.59 dollars in revenue. In 2020, it falls to 0.57, and in 2021, it rises to 0.72, making all three years quite high.

5.Return on assets

This ratio evaluates a company's return on all invested capital. It depends on the profit margin and turnover of assets. In 2020 and 2021, the index increases to 13% and 21%, respectively, from its 2019 value of 12%. In all three instances, we note that the indicator readings are fairly high.

6.Financial Leverage Ratio

The financial leverage ratio assesses the impact of foreign borrowed funds on an economic unit's profits. When the spread is positive, it is beneficial for the corporation because its profitability surpasses the amount borrowed. When the indicator is larger than one, the economic unit benefits from the usage of foreign capital. When it equals one, the effect of foreign capital on the economic unit's profits is zero. In this instance, the indicators are less than one, and for 2019, 2020, and 2021, they are 0.02, 0.06, and 0.06, respectively.

7.Net Operating Profit Margin

This percentage indicates how much profit is earned at a specific sales percentage. This ratio assesses the efficiency with which a business manages its expenses in relation to its net revenues. In 2019, the index equals 18.3%, in 2020, it reaches 18.92% and in 2021, it reaches 25.6%, which is excellent and a result of strong net profits and net sales. It says that a high percentage of the index indicates that expenses are minimal, implying that they are effectively managed by management.

	FY 2021	FY 2020	FY 2019
Net profit	$ 76,033	$ 40,269	$ 34,343
Effective tax rate	16.2%	16.2%	13.3%
Net interest expense after tax	$ 137	$ 183	$ 145
Interest income	$ 1,499	$ 1,865	$ 2,427
Net interest expense and investment income after tax	$ 90,871	$ 48,265	$ 39,770
Net operating profit after tax (NOPAT)	$ 65,961	$ 34,525.38	$ 29,668
Net investment profit after tax (NIPAT)	$ 90,734	$ 48,082	$ 39,625
Sales	$ 257,637	$ 182,527	$ 161,857
Operating income	$ 78,714	$ 41,224	$ 34,231
Non Operating income net	$ 12.02	$ 6.86	$ 5.39
Excess cash and marketable securities @ 8 percent of sales	$ 334.0	$ 6,342.8	$ 7,996.4
Operating Working capital	$ 88,127	$ 77,065	$ 84,305
Non-current operating assets	$ 139,423	$ -1,877	$ -1,893
Investment assets	$ 334.04	$ 6,342.84	$ 7,996.44
Business assets	$ 227,884	$ 81,531	$ 90,408
Debt	$ 14,817	$ 13,932	$ 4,554
Group equity	$ 251,635	$ 222,544	$ 201,442
Capital	$ 266,452	$ 236,476	$ 205,996
The items can also be reported on a "net" basis. We use these "net" items below:			
Operating Working capital	$ 88,127	$ 77,065	$ 84,305
Non-current operating assets	$ 139,423	$ -1,877	$ -1,893
Net operating assets	$ 227,550	$ 75,188	$ 82,412
Net debt	$ -6,128	$ -12,533	$ -13,944
Group equity	$ 251,635	$ 222,544	$ 201,442
Net capital	$ 245,507	$ 210,011	$ 187,498
Ratio			
Return on equity	30.2%	18.1%	17.0%
Ratio			
Net profit margin (ROS)	29.5%	22.1%	21.2%
× Asset turnover	$0.72	$0.57	$0.59
= Return on assets (ROA)	21%	13%	12%
× Equity Multiplier	1.43	1.44	1.37
= Return on equity (ROE)	30.22%	18.09%	17.05%
	2021	2020	2019
Net operating profit margin	25.6%	18.92%	18.3%
× Operating asset turnover	1.13	2.43	1.96
= Return on Operating Assets	28.99%	45.92%	36.00%
Return on Operating Assets	28.99%	45.92%	36.00%
x (Operating Assets/Business Assets)	0.99853	0.92220	0.91155
+ Return on Investment Assets	0.424948162	7.580515983	4.955330122
x (Investment Assets/Business Assets)	0.00147	0.07780	0.08845
= Return on Business Assets	21.16331%	12.59918%	12.44722%
Spread	20.24%	11.29%	9.27%
× Financial leverage	0.06	0.06	0.02
= Financial leverage gain	1.2%	0.7%	0.2%
ROE = Return on Business Assets + Financial leverage gain	30.22%	18.09%	17.05%

Section 4 - Operating Management Analysis

All presented results are sown analytically in the last page of this section where is the excel table, and from where we have extracted our results.

In the past, company valuation methods were applied which were based exclusively on accounting profits. But the weaknesses of these methods have led companies and analysts to other more comprehensive approaches, where the question is now financial profit.

The concept of efficiency refers to the ability and choices of a business to generate profits from all of its activities. It is basically the efficiency in terms of profitability or non-profitability displayed by an economic unit in proportion to the funds it has and manages. The results of efficiency indicators are indicative of a company's long-term profit presentation, which is inextricably linked to its long-term sustainability, while significantly influencing the opinion of all groups related and interested in the company, such as shareholders, employees, credit institutions, customers etc.

Before starting our analysis, we convert the data into percentages of sales assuming that we have 100% of total net sales. We notice that in 2019 sales are reduced by 34.97% due to expenses, while the corresponding percentages for 2020 and 2021 are 30.99% and 26.35% respectively. So we notice that over the years the expenses affect the sales to a lesser extent. In addition, net profit before taxes in 2019 is -13.26% of sales, increasing but still having a loss of 8.41% and then becomes profit and reaches the 4.20% in 2020 and 2021 respectively. Moreover, calculating the other income expenses for alphabet in 2019 starts with a 3.33% when this price increases in 2020 and becomes 3.76% and finally for 2021 is 4.67%.

We then calculate interest expense which in 2019 increases the percentage of sales by 0.06%, in 2020 by 0.07% and in 2021 by 0.13%. So we notice that there isn't a fluctuation in sales percentages, affecting the company's net profits. Thus, the company's net profit after tax is 21.2% in 2019, 22.1% in 2020 and 29.5% in 2021. Therefore, we see a gradual increase in net profit as a consequence of the increase in sales. Tax expense reaches the 24.48%, 26.34% and 35.22% respectively for the years 2019,2020 and 2021.

We can also say that the administrative expenses of the company increases sales with small percentage which decreases in 2020 while increasing again in 2021. More specifically, in 2019 this percentage is equal to 4.5%, in 2020 is almost zero and more specifically 0.1% while in 2021 as we mentioned increases and becomes 0.4%. The cost of materials for alphabet are 44.4% for 2019, 46.4% for 2020 and finally 43.1% for 2021.

Finally, for the year 2019 the percentage of cost of sales on sales shows a significant decrease, which decreases in 2020 and by extension 2021. In 2019, that is, we have a decrease of 78.9% on sales, while in 2020 and 2021 these percentages are 77.4% and 69.4% respectively.

1.Gross Profit margin index

A business's gross profit equals net sales minus cost of goods sold. The gross profit margin ratio is calculated as follows:

Gross Profit margin= (Revenue-Cost of Sales)/Revenue

This ratio expresses the relationship between gross profits and sales. In particular, it shows in percentage the Gross Profit Margin with which the company sells the produced product, the efficiency of the operation and the way the company determines the price of the product. It indirectly demonstrates the intensity of competition.

The calculation of this index is quite important as it shows the profitability of the company. The higher the percentage, the higher the profit made by the concern from each unit sold. A fairly high percentage of gross profit is considered a very favorable indicator for the course of the company, since it has the ability to cover its operating and other expenses, while at the same time it has a satisfactory net profit remaining, always in relation to its sales and the equity that concerns. In the case of a low indicator, it can be an indication that the company has made investments, which, however, are not justified by the amount of its sales, which may cause increased production costs of its products. Gross profit margin is also useful for comparing two companies or for comparing the past and current performance of the company.

In this particular case, the Alphabets company for 2019 has a Gross Profit Margin Index equal to 55.6%, while in 2020 decreases and reach the 53.6% and 2021 it increases again and equals to 56.9%. We notice that the indicator shows relatively low results, which are due to the small size of sales in relation to the large size of sales costs. For the price of the index to increase, sales should increase at a lower cost than what it has.

2. EBITDA margin (Earnings Before Interest, Tax, Depreciation, and Amortization)

EBITDA is one of the most well-known and used financial indicators to analyse a company's profitability, in order to obtain an approximate measure of operation. That is, having the real knowledge of what is gained or lost in the business. For this reason, EBITDA is applied to measure a company's ability to generate benefits from a productive activity without taking into account in its calculations all costs.

The calculation is carried out in a simple way and from the final result of the company's production, without taking into account the expenses for interest, taxes or depreciation. This is because the interest rates vary depending on the interest rates applicable in a given period and depending on the entity to which it is to be paid. Its formula is equal to:

EBITDA margin= (Earnings before interest,taxes,depreciation and amortization)/Revenue

The usefulness of calculating the EBITDA index lies in the fact of providing financial information to capital or future investors, regarding the operating result of the entity obtained at the end of a period, directly linked to cash outflows (operating expenses) and free from financial costs , as well as from the final tax burden. In this sense, it is estimated that depreciation is not linked to direct cash outflows and is therefore not taken into account in operating expenses.

For our company we notice that in 2019 the index had the value of 28.4%, which low value is due to the large size of the expenses that the company had that year. In 2020 and 2021 the index increased to 30.1% and 35.4% which is a big increase among these years. In a more general context, the results of the index are not so satisfactory and should increase the profits and reduce the operating expenses of the financial unit.

3.NOPAT margin (Net Operating Profit After Tax)

NOPAT, i.e. the net operating profit ratio, is calculated by eliminating tax effects from operating profit. NOPAT provides an accurate picture of the operating profit that the company's shareholders would earn if the company had no debt.

NOPAT, or net operating profit after tax, as its name suggests, removes the effect of tax from the equation and offers an accurate look at earnings if the company had no debt. NOPAT offers a clear look at the operating efficiency of unmeasured businesses, as it does not include the company's tax savings. Firms with no debt have no interest expense and therefore NOPAT is equal to net profit. In other words, NOPAT is the amount of operating profit that would be available to shareholders after taxes if the company had zero debt.

In the Alphabet company, in 2019 the ratio was 21.15%, while in 2020 reaches to 22.59%, a very small increase. In 2021 the index still increases but this time much more and reaches the 30.55%. The company in general present satisfactory values for this indicator but mainly for the year of 2021.

4. Net Profit margin

This ratio relates the net profit to the company's sales and is an indicator of the company's operating profitability. Net earnings are earnings after taxes and before dividends on preferred and common stock. In summary, the net profit margin ratio shows the good and prudent management and organization of the business. It informs us about the profit it has for our operational activities. The higher the net profit ratio, the more profitable the financial unit.

For the Alphabet company, we observe very satisfactory indicators with the price for the year 2019 equalling 21.22% and the following year taking a small increase and reaching the 22.06%, while in 2021 increasing again almost 7% and reaches the 29.51%. The prementioned prices are due to the fact that the net profits of the business are good enough compared to the volume of sales of the financial unit. The company should keep reducing its operating expenses in order to increase more its net profits and thus increase the percentage of this indicator.

Common-sized income statement and profitability ratios	FY 2021	FY 2020	FY 2019
Line items as a percent of sales			
Sales	100%	100%	100%
Net operating expense	26.35%	30.99%	34.97%
Other income/expense	4.67%	3.76%	3.33%
Net operating profit before tax	4.20%	-8.41%	-13.26%
Investment income	1.1%	1.5%	1.5%
Net interest expense	0.13%	0.07%	0.06%
Tax expense	35.22%	26.34%	24.48%
Net profit	29.5%	22.1%	21.2%
Personnel expense	0.4%	0.1%	0.4%
Cost of materials	43.1%	46.4%	44.4%
Depreciation and amortization	4.8%	7.5%	7.3%
Other operating income/expense	0	0	0
Operating expense line items as a percent of sales (by function)			
Cost of sales (loss)	69.4%	77.4%	78.9%
Selling, general, and administrative expense (loss)	4.5%	7.2%	6.9%
Key profitability ratios			
Gross profit margin	56.9%	53.6%	55.6%
EBITDA margin	35.4%	30.1%	28.4%
NOPAT margin	30.55%	22.59%	21.15%
Net profit margin	29.51%	22.06%	21.22%

Section 5 - Investment management Analysis

In the following table we see the results of the investment management analysis for the company Alphabet in the years 2019, 2020, 2021.

Asset management ratios	2021	2020	2019
Operating working capital/Sales	34,21%	42,22%	52,09%
Net non-current assets/Sales	54,25%	67,70%	65,33%
PP&E/Sales	54,12%	64,23%	60,39%
Operating working capital turnover	2,92	2,37	1,92
Net non-current asset turnover	1,84	1,48	1,53
PP&E turnover	1,85	1,56	1,66
Trade receivables turnover	6,55	5,90	6,39
Days' receivables	54,92	61,00	56,33
Inventories turnover	-	-	-
Days' inventories	-	-	-
Trade payables turnover	3,55	2,96	3,12
Days' payables	101,36	121,64	115,50

1.Operating working capital turnover

This ratio measures how effective a business is at generating sales for each dollar of working capital used. A higher working capital turnover ratio is better and indicates that a company is able to generate a greater amount of sales. In our case the index has positive values for all years and for 2019 it equals 1.92 in 2020 it increases and equals 2.37 and in 2021 it increases again and reaches the value of 2.92. When working capital is positive, so is the working capital turnover ratio, as in our case where all three years have positive working capital. Because a company's sales cannot be negative, only negative working capital makes the working capital turnover ratio negative. A positive working capital turnover ratio is usually significant and can be compared across companies. In conclusion, Alphabet company is able to generate more sales volume.

2.Net non-current asset turnover

The non-current asset turnover ratio determines how efficiently a business uses its non-current assets to generate revenue for the business. A low value may indicate that the firm is not using its assets efficiently, while a high value implies that the firm is more efficient in using its non-current assets. For 2019 the index takes the value of 1.53 which means that for every 1 dollar invested in non-current assets, the company earns a return of 1.53. In the years 2020 and 2021 it has values of 1.48 and 1.84 respectively, i.e. it initially decreases and then increases.

3.PP&E turnover

The PPE turnover ratio, or fixed asset turnover, shows how many sales in dollars the company receives for every dollar invested in property, plant and equipment (PPE). The higher the ratio, the more fixed assets are used by the economic unit in relation to the amount of sales it makes. In 2019 the index is equal to 1.66 and in the two following years it initially decreases for 2020 where it reaches the value of 1.56 and for the year 2021 it increases to 1.85.

4.Trade receivables turnover

The receivables turnover ratio measures the efficiency with which a company is able to collect on its receivables or the credit it extends to customers. The ratio also measures how many times a company's receipts are converted into cash over a certain period of time. In 2019 the index had a value of 6.39 and in 2020 it decreased to 5.90 while in 2021 it reached the highest value of 6.55 in three years.

5.Days' receivables

This ratio shows the length of time the business must wait after making a sale to collect the cash. This also shows the efficiency of the company's management. Specifically, for the Alphabet Inc. in 2019, the price was 56.33, i.e. on average the company collects every 56.33 days. For the years 2020 and 2021 these days become 61 and 54.92 respectively.

6.Trade payables turnover

This ratio shows how many times the company repays its creditors or suppliers in an accounting period. In 2019, it takes a value of 3.12, while in the next two years it initially decreases for 2020 and takes the value of 2.96, while in the year 2021 it increases and is equal to 3.55.

7.Days' payables

This indicator shows how many days on average the company pays its suppliers. It basically shows how much the suppliers are funding it. In 2019 it has a price of 115.50 while the following year it increases to 121.64 days and then decreases to 101.36 days.

No value is defined for the Inventories turnover indicator as inventories are 0, which are the denominator of the indicator. Consequently, no value is set for the Days' inventories index either, since the denominator is inventories turnover. This indicator measures how many days on average inventory remains in the company. When there is a reduction in price, then there is improvement/efficiency.

Section 6 - Financial Management Analysis

The table below shows the liquidity ratios, i.e. how liquid an asset is, for our study company Alphabet for the financial years 2019, 2020 and 2021. These define a company's short-term financial condition and its ability to meet short-term obligations her. The first three indicators are static, while the last one is more dynamic.

Short-term Liquidity Analysis			
	FY 2021	**FY 2020**	**FY 2019**
Current ratio	2,93	3,07	3,37
Quick ratio	2,79	2,95	3,21
Cash ratio	2,17	2,41	2,65
Operating cash flow ratio	1,43	1,15	1,21

The current ration index for 2019 it equals 3.37, in 2020 with 3.07 and in 2021 with 2.93 values which are considered quite good, since an index value close to 2 is considered a good indication of the company's liquidity. We can say that the company can cover 3.37 times, 3.07 times and 2.93 times its short-term liabilities by liquidating its assets in the years 2019, 2020 and 2021 respectively. This shows that the company is able to pay off its short-term obligations and is able to liquidate its assets very easily and quickly.

The quick ratio index for 2019 it is equal to 3.21, in 2020 to 2.95 and in 2021 to 2.79. We notice that over the years the ratio decreases but remains well above unity, which means that the company's reserves are fully financed by the working capital generated by the company.

More specifically, we can say that in 2019 the company was able to cover 3.21 times its short-term liabilities from its rapidly liquid assets. In 2020 by 2.95 times and in 2021 by 2.79 times.

The cash ratio index equal for the financial years 2019, 2020 and 2021 to 2.65, 2.41 and 2.17 respectively. So, we understand that in 2019 the company was able to cover 2.65 times its current and short-term liabilities with its available assets, in 2020 where it decreased to 2.41 times while in 2021 it decreased even more to 2.17 times. In general, we can say that the above results of the liquidity ratio show that the company's assets cover its overdue obligations to a very satisfactory degree.

The operating cash flow ratio for the years 2019, 2020 and 2021 it is equal to 1.21, 1.15 and 1.43. This means that the company's current liabilities are covered 1.21 times in 2019, 1.15 times in 2020 and 1.43 times in 2021 by the cash flows generated by its activities. A ratio higher than unity is considered positive and is favored by investors and creditors, as it shows that the company is strong enough to pay its current obligations, which is the case for our company. We find that we have a high cash flow ratio, so our business can be considered as one of the strongest businesses.

The following table shows the debt or leverage ratios for the company for the financial years 2019, 2020 and 2021. The debt or leverage ratios show how a company finances its total investments, i.e. its assets.

Debt and Long-term solvency Analysis			
	FY 2021	**FY 2020**	**FY 2019**
Liabilities-to-equity	0,428	0,436	0,370
Debt-to-equity	0,059	0,063	0,023
Debt-to invested capital	0,056	0,059	0,022
Interest coverage (earnings based)	665,26	264,20	274,67
Interest coverage (cash-flow based)	779,61	400,25	414,03

The Liabilities to Equity ratio for the years 2019, 2020 and 2021 is equal to 0.37, 0.44 and 0.43 respectively, values which are below the unit. This means that the company is using equity rather than dept financing for it's operations.

The Debt-to-Equity ratio for the years 2019, 2020 and 2021 is equal to 0.02, 0.06 and 0.06, respectively. As these results are not near enough to unity, we can conclude that the shareholders are able to cover the company's remaining debts in the event of a business downturn. In general, we can say that the lower the ratio, the more equity there is to satisfy creditors in case of bankruptcy of the company.

The Dept to Capital ratio for the years 2019, 2020 and 2021 is equal to 0.22, 0.06 and 0.06, respectively. The greater the ratio, the higher the risk for lenders and investors. The above results are significantly less than one, indicating that the company's debt levels are manageable and that it poses a lower risk for investment or loan.

The Interest coverage, based on earnings, for the years 2019, 2020 and 2021 is equal to 274.65, 246.20 and 665.26 respectively. The ratio for 2019 and 2020 is comparable, but the ratio for 2021 is significantly greater. In general, the ratio for the past three years is very high, indicating that the company can pay off its debts with relative ease.

The Interest coverage, based on cash flow, for the years 2019, 2020 and 2021 is equal to 414.3, 400.25 and 779.61 respectively. In general, the ratio for the previous three years is quite high, indicating that the company can pay off its debts with relative ease using its cash flows.

Section 7 - Sustainable Growth Rate Analysis

The table below shows the Return on Equity - ROE, the Dividend payout ratio and the Sustainable growth rate for the Alphabet company in the financial years 2019, 2020 and 2021.

Sustainable Growth Rate Analysis			
	FY 2021	**FY 2020**	**FY 2019**
ROE	30,22%	18,09%	17,05%
Dividend payout ratio	0%	0%	0%
Sustainable growth rate	30,22%	18,09%	17,05%

1.Return On Equity Index

For the company Alphabet, the ROE ratio for the year 2019 is equal to 17.05%, which means that the company achieved a 17.05% return on equity (funds that shareholders invested in the company). This high percentage is due to the high size of the company's net profits in relation to the amount of equity that the financial unit has. For the year 2020 the index increases and equals 18.09%, while for the year 2021 we have a 30.22% return. More specifically, for every 100 euros of investment, the company had a profitability of 17.05, 18.09 and 30.22 euros for the years 2019, 2020 and 2021 respectively. We notice that in 2019 the index takes the lowest value.

2.Dividend Payout Ratio

The ratio equals the ratio of dividends to net earnings. However, in the case of our company Alphabet due to the policy which has always been in place we know that it has never declared or paid a cash dividend on our share or equity capital. The main use of capital continues to be to invest in the long-term growth of the business. So this ratio equals to zero for years 2019,2020 and 2021.

3.Sustainable Growth Rate

It is difficult for companies to maintain a high rate of growth as they have to make investments to grow. Also, this rate is useful for evaluating the company's development path. The sustainable growth rate for the financial year 2019 is equal to the roe ratio in our case for the reason we explained which above (as Dividend Payout Ratio=0) and is equal to 17,05% which means the company can safely grow at a rate of 17,05% using its current resources and revenues without incurring additional debt or issuing equity to finance growth. In 2020 the rate increases to 18,09% which probably means that the company's financing has increased, while in 2021 it increases again and reaches 30,22%.

Section 8 - Cash Flow Analysis

1.Operating Activities

The following table presents the cash flows from the operational activities of the Alphabet company for the financial years 2019, 2020 and 2021.

	Year Ended December 31		
	2021	2020	2019
Operating activities			
Net income	$76.033	$40.269	$34.343
Adjustments:			
Depreciation and impairment of property and equipment	$11.555	$12.905	$10.856
Amortization and impairment of intangible assets	$886	$792	$925
Stockbased compensation expense	$15.376	$12.991	$10.794
Deferred income taxes	$1.808	$1.390	$173
Gain on debt and equity securities net	-$12.270	-$6.317	-$2.798
Other	-$213	$1.267	-$592
Changes in assets and liabilities net of effects of acquisitions:			
Accounts receivable	-$9.095	-$6.524	-$4.340
Income taxes net	-$625	-$1.209	-$3.128
Other assets	-$1.846	-$1.330	-$621
Accounts payable	$283	$694	$428
Accrued expenses and other liabilities	$7.304	$5.504	$7.170
Accrued revenue share	$1.682	$1.639	$1.273
Deferred revenue	$774	$635	$37
Net cash provided by operating activities	$91.652	$65.124	$54.520

For the year ended December 31, 2021, Alphabet generated $91.652 million in operating cash flow, compared to $65.124 million in 2020 and $54.520 million in 2019. This shows that Alphabet's cash flow from operations has been steadily increasing in recent years. years a positive sign for investors.

Alphabet is widely regarded as a highly profitable, cash-generating business. We see a very sharp increase in revenue from 2020 to 2021 of almost 30 million, while the corresponding increase in 2019 and 2020 is about 10 million. Alphabet's cash flow generation is largely driven by ad revenue generated by Google's various platforms, including search, YouTube and mobile apps. These platforms have a huge user base, which makes them particularly attractive to advertisers, and Alphabet has been able to leverage this position to generate significant cash flow over time.

The increase in stock-based compensation expense and depreciation and amortization of property and equipment in 2021 compared to 2020 is likely due to the growth of Alphabet's operations as it continues to invest in new products and services. Net profit from debt and equity securities decreased significantly in 2021 compared to 2020, which may indicate a decrease in the company's investment activities during the year.

Changes in assets and liabilities, including changes in accounts receivable, income taxes, other assets, accounts payable and accrued expenses and other liabilities, also affected Alphabet's operating cash flows. Overall, positive operating cash flow indicates that Alphabet is generating sufficient cash from its core operations to fund investments, dividends and other cash needs.

2.Investing Activities

The following table shows Alphabet's cash flows from investing activities for fiscal years 2019, 2020 and 2021.

	Year Ended December 31		
Investing activities	2021	2020	2019
Purchases of property and equipment	-$24.640	-$22.281	-$23.548
Purchases of marketable securities	-$135.196	-$136.576	-$100.315
Maturities and sales of marketable securities	$128.294	$132.906	$97.825
Purchases of nonmarketable investments	-$2.838	-$7.175	-$1.932
Maturities and sales of nonmarketable investments	$934	$1.023	$405
Acquisitions net of cash acquired and purchases of intangible assets	-$2.618	-$738	-$2.515
Other investing activities	$541	$68	$589
Net cash used in investing activities	-$35.523	-$32.773	-$29.491

The company's cash flows from investing activities for the years 2019, 2020 and 2021 are equal to -29,491, -32,773 and -35,523 million dollars respectively. We notice that all three years the cash flows are negative, a fact that does not seem to be a concern for the company as a financial unit as they provide us with information on the degree of expansion of the business, for example for the purchase or investment in assets that are expected to create future returns such as property and equipment.

We can see that Alphabet spent a significant amount of cash on real estate and equipment purchases. In 2021, the company spent $24.640 million on property and equipment, up from $22.281 million in 2020 and $23.548 million in 2019.

In addition to real estate and equipment, Alphabet also invested heavily in marketable securities, which are financial instruments. In 2021, the company spent $135.196 million on the purchase of marketable securities, which was slightly less than the $136.576 billion it spent in 2020, while in 2019 this amount stands at $100.315 million.

Alphabet also made several acquisitions during the years presented, which involved the purchase of other companies or their assets. The company spent a net -$2.618 billion on acquisitions in 2021, which was up from -$738 million in 2020 and up from -$2.515 billion in 2019.

Overall, Alphabet's net cash used in investing activities represents a significant amount of cash outflows, which is consistent with the company's strategy to invest heavily in its business and future growth opportunities. However, it's worth noting that the company has historically generated strong operating cash flow, which has allowed it to fund these investments without having to rely on external financing or diluting shareholder value.

3. Financing activities

The following table shows the results of cash flows from financing activities for the years 2019, 2020 and 2021.

	Year Ended December 31		
	2021	2020	2019
Financing activities			
Net payments related to stockbased award activities	-$10.162	-$5.720	-$4.765
Repurchases of capital stock	-$50.274	-$31.149	-$18.396
Proceeds from issuance of debt net of costs	$20.199	$11.761	$317
Repayments of debt	-$21.435	-$2.100	-$585
Proceeds from sale of interest in consolidated entities net	$310	$2.800	$220
Net cash used in financing activities	-$61.362	-$24.408	-$23.209
Effect of exchange rate changes on cash and cash equivalents	-$287	$24	-$23
Net increase in cash and cash equivalents	-$5.520	$7.967	$1.797
Cash and cash equivalents at beginning of period	$26.465	$18.498	$16.701
Cash and cash equivalents at end of period	$20.945	$26.465	$18.498
Supplemental disclosures of cash flow information			
Cash paid for taxes net of refunds	$13.412	$4.990	$8.203

First we note that net cash used in financing activities for Alphabet in 2021, 2020 and 2019 were -$61.362 million, -$24.408 million and -$23.209 million, respectively. This figure represents the net cash flow used to fund the company's financing activities, which includes payments related to stock-based vesting activities, stock repurchases, debt issuances and repayments, and proceeds from the sale of interests in consolidated entities.

The company's cash and cash equivalents at the end of 2021 were 20.945 million dollars, which was a decrease from the previous year 2020 where they reached the 26.465 milion dollars and for the year 2019 were 18.498 milion dollars.

We also note that Alphabet spent a significant amount of cash on capital share repurchases. In 2021, the company spent $50.274 billion on share repurchases, up from $31.149 million spent in 2020 and $18.396 million in 2019. These repurchases typically result in a reduction in the number of shares outstanding and an increase in of earnings per share for the remaining shares.

In terms of the amount of cash in payments related to the company's stock-based award activities in 2021, the company spent $10.162 million on these activities, up from $5.720 million in 2020 and $4.765 million in 2019.

Alphabet's net cash used in financing activities represents an amount of cash outflows, which is consistent with the company's strategy of returning cash to shareholders through share repurchases and investing in the business through equity awards and debt issuances.

Section 9 - Prospective Analysis: Forecasting

The following tables show the growth rate of the indicators Revenue growth rate and NOPAT margin for the 10 years 2022-2031 for the company Alphabet. Regarding the Revenue growth rate indicator, we consider that in 2022 the percentage is stable and equal to 41.15%, while in the following years we assume that there are fluctuations. In the last year, the price of the index equals to 25% and this is because this indicator for the period 2019-2020 was equal to 12% while due to covid in the period 2020-2021 it jumped to 41.15%. So under normal conditions we consider an increase in revenues but not to the extent that existed during the covid period. In general, companies with above-average or below-average sales growth rates tend to return over time to a "normal" level within three to ten years. As for the NOPAT margin ratio, which shows how well a company performed through its core operations before taxes, we see 2022 as equal to the ratio for 2021, which is 30,55%. For the following years we assume that it decreases and from 2027 to 2031 it remains constant and equal to 24%.

Forecast year			2022	2023	2024
Revenue			$363.655	$492.752	$648.955
Revenue growth rate			41,15%	35,50%	31,70%
NOPAT margin			30,55%	25,40%	25,20%

2025	2026	2027	2028	2029	2030	2031	2032
$837.801	$1.072.385	$1.405.896	$1.806.577	$2.341.324	$2.961.774	$3.642.983	$4.561.014
29,10%	28,00%	31,10%	28,50%	30%	26,50%	23,0%	25%
25%	24,80%	24%	24,00%	24,00%	24,00%	24,00%	24,00%

And the following Tables show the company's projected after-tax profits from 2022 to 2031, as well as cash flows to equity and cash flows from operating activities.

Income statement (Million Dollars)			2022	2023	2024
Revenue			$363.654,82	$478.933,40	$618.303,02
Net operating profit after tax			$111.104,87	$121.649,08	$155.812,36
+ Net investment profit after tax			$471,50	$574,72	$741,96
= Net business profit after tax			$111.576,37	$122.223,80	$156.554,32
- Net Interest expense after tax			$124,30	$113,11	$102,93
= Net profit or loss			$111.452,07	$122.110,69	$156.451,39
ROBA (%)			48,91%	26,84%	23,90%
ROE (%)			30,2%	47,21%	58,16%
BV of equity growth rate			0	0,03	0,04

2025	2026	2027	2028	2029	2030	2031	2032
$791.427,87	$1.037.561,93	$1.333.267,08	$1.727.914,14	$2.185.811,39	$2.688.548,01	$3.366.062,11	$3.366.062,11
$197.856,97	$257.315,36	$319.984,10	$414.699,39	$524.594,73	$645.251,52	$807.854,91	$807.854,91
$949,71	$1.245,07	$1.599,92	$2.073,50	$2.622,97	$3.226,26	$4.039,27	$4.039,27
$198.806,68	$258.560,43	$321.584,02	$416.772,89	$527.217,71	$648.477,78	$811.894,18	$811.894,18
$93,67	$85,24	$77,57	$70,59	$64,23	$58,45	$53,19	$48,40
$198.713,01	$258.475,19	$321.506,45	$416.702,30	$527.153,47	$648.419,33	$811.840,99	$811.845,78
23,19%	23,76%	22,86%	22,78%	22,32%	21,35%	21,51%	17,37%
70,21%	86,97%	104,02%	129,63%	157,69%	186,50%	224,52%	215,89%
0,05	0,05	0,04	0,04	0,04	0,04	0,04	0,04

			2022	2023	2024
Net profit			$111.452,07	$122.110,69	$156.451,39
Change in net working capital			-$51.296,00	$80.887,03	$54.875,36
Change in net non-current operating assets			$0,00	$145.971,17	$144.778,58
Change in investment assets			$0,00	$137,46	$119,81
Change in debt			-$148,17	$586,75	$610,22
Free cash flow to equity			$60.007,90	$349.693,10	$356.835,35
Net operating profit after tax			$111.104,87	$169.014,03	$223.889,39
Change in net working capital			-$51.296,00	$80.887,03	$54.875,36
Change in net non-current operating assets			$0,00	$145.971,17	$144.778,58
Free cash flow from operations			$59.808,87	$395.872,24	$423.543,33

2025	2026	2027	2028	2029	2030	2031	2032
$198.713,01	$258.475,19	$321.506,45	$416.702,30	$527.153,47	$648.419,33	$811.840,99	$811.845,78
$67.665,21	$84.852,44	$118.468,49	$146.459,26	$192.176,42	$229.765,80	$251.839,68	$345.092,45
$134.417,90	$145.864,26	$199.999,76	$276.121,92	$339.980,90	$444.837,04	$483.916,48	$553.792,58
$187,44	$226,62	$281,50	$400,21	$480,82	$641,70	$744,54	$817,45
$634,63	$660,02	$686,42	$713,87	$742,43	$772,13	$803,01	$835,13
$401.618,20	$490.078,53	$640.942,62	$840.397,57	$1.060.534,05	$1.324.435,99	$1.549.144,70	$1.712.383,39
$291.554,61	$376.407,05	$494.875,54	$641.334,80	$833.511,22	$1.063.277,02	$1.315.116,70	$1.660.209,15
$67.665,21	$84.852,44	$118.468,49	$146.459,26	$192.176,42	$229.765,80	$251.839,68	$345.092,45
$134.417,90	$145.864,26	$199.999,76	$276.121,92	$339.980,90	$444.837,04	$483.916,48	$553.792,58
$493.637,72	$607.123,76	$813.343,79	$1.063.915,98	$1.365.668,55	$1.737.879,86	$2.050.872,86	$2.559.094,19

We notice that based on the assumptions we have considered for the prediction of the financial situation of the Alphabets company in the next 10 years, the company's net corporate income is predicted to increase at a constant rate, increasing its profits to a very large extent. Equity cash flows are projected at the end of fiscal year 2031 to have increased by more than 100% compared to their value in the year 2021.

The net business profit after tax reflects the overall profitability of the company. It represents the profit generated by the business after considering operating and investment activities. Looking at the forecasted numbers, the net business profit after tax is expected to increase significantly over the years, indicating a positive trend in the company's profitability. This growth suggests that the company's operations and investments are projected to generate higher profits in the future.

Moreover, from the forecast, the free cash flow from operations shows a consistent growth pattern, indicating the company's improving operational efficiency and cash generation capabilities. This positive trend suggests that the company is effectively managing its working capital, controlling costs, and generating healthy cash flows from its day-to-day operations.

Cash flows from the company's operating activities are projected to grow rapidly over the next 10 years.

Overall, based on the provided forecast, the company is expected to experience strong profitability, with increasing net business profit after tax. Additionally, the company's ability to generate positive free cash flow to equity and free cash flow from operations indicates its capacity to reward shareholders and reinvest in the business. These positive financial indicators suggest a healthy financial position, potential for growth, and the ability to generate value for its stakeholders.

Section 10 - Valuation Implementation

We approach the valuation of the value of Alphabet's company following four scenarios and with two methods. The first is based on the company's capital (equity valuation) and the second on its net assets (asset valuation). We observed different results for firm value with both methods. For the equity valuation method, we calculated the risk-free rate as the rate of return of Alphabet's medium-term government bonds. In addition, we found that the market risk premium is equal to 5%. In addition, from yahoo finance we got the information that the $beta_{equity}$ for our company is equal to 1,10. These data were necessary to calculate the cost of capital (cost of equity) of the business which is equal to 0.095. Evaluating the value of the company with the equity value method we find that its value is 2.005.519.259.746,94 dollars. (2+ trillion)

Equity Value	Beginning book value	Capitalized NP2021	Value between 2021 and 2031	Terminal value	Total value	Total value with AE = 0 beyond terminal year	
Abnormal earnings	222186,939	0	1783332,321	-1865028,078	$140.491,18	2005519	$2.005.519.259.746,94
Abnormal ROE	222186,939	0	1783332,321	-1865028,078	$140.491,18	2005519	$2.005.519.259.746,94
Free Cash flows to equity	0	0	821397,9545	-859110,4237	-$37.712,47	2005519	$2.005.519.259.746,94
Abnormal earnings growth	0	1552410,864	2914932,915	-4326852,597	$140.491,18	2005519	$2.005.519.259.746,94

With the asset valuation method, we assessed the value of the company and found that its value is 2.061.162.475.036,83 dollars. (2+ trillion)

Asset Value	Beginning book value	Capitalized NP2021	Value between 2021 and 2031	Terminal value	Total value	Total value with AE = 0 beyond terminal year	
Abnormal NOPAT	227550	0	1833612,475	-1946351,659	$114.810,82	2061162	$2.061.162.475.036,83
Abnormal ROA	227550	0	1833612,475	-1946351,659	$114.810,82	2061162	$2.061.162.475.036,83
Free Cash flows from operations	0	0	846321,165	-914307,5743	-$67.986,41	2061162	$2.061.162.475.036,83
Abnormal NOPAT growth	0	1576137,841	3056644,39	-4517971,414	$114.810,82	2061162	$2.061.162.475.036,83

In conclusion the four scenarios in each method are the same, i.e. the value of the business is the same but between these two methods the result differs.

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