Valuation of Visa Inc. Using Selected Valuation Methods

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Zásady pro vypracování

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Define the objectives and the application methods used in the Master thesis.
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- Prepare a comprehensive literature review in the field of business valuation.

II. Practical part

- Conduct the strategic and financial analyses of the selected company.
- Determine the value of the company using the selected valuation methods.
- Based on the result of the analyses and valuation, formulate practical recommendations for the stakeholders.

Conclusion

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ABSTRAKT

Cílem diplomové práce je určit vnitřní hodnotu jedné z největších veřejně obchodovaných společnosti na NYSE – Visa Inc. pomocí vybraných oceňovacích metod. Práce je rozdělena na teoretickou a praktickou (analytickou a projektovou) část. Teoretická část obsahuje komplexní literární rešerši relevantní k oblasti oceňování podniku, zaměřenou mimo jiné na proces tvorby hodnoty, klíčové valuační faktory, klasifikaci a deskripci stávajících oceňovacích přístupů a metod. V praktické části je realizována strategická a finanční analýza oceňovaného podniku a následně je kvantifikována jeho vnitřní hodnota pomocí metod oceňování diskontovaných peněžních toků a diskontovaného ekonomického zisku. Na základě výsledků analýz a ocenění dává autor praktická doporučení pro stakeholdery. Výsledkem diplomové práce je strategická analýza a ocenění společnosti Visa Inc. jenž mohou využít interní i externí zainteresované strany k podpoře svých finančních, strategických nebo investičních rozhodnutí.

Klíčová slova: hodnota, hodnotové faktory, oceňovací přístup, proces ocenění, DCF.

ABSTRACT

The purpose of the Master's thesis is to determine the value of one of the largest capitalized publicly traded companies on the NYSE – Visa Inc. using selected valuation methods. The thesis is divided into theoretical and analytical (project) parts. The author conducts a comprehensive literature review in the field of business valuation, focusing on the premises of value, the process of value creation, and its fundamental drivers, as well as presenting the classification of the existing valuation approaches and methods and describing selected valuation methods in detail in the first part of the thesis. In the second practical part, the author carries out the strategic and financial analyses of the target company and then estimates its value using discounted cash flow and discounted economic profit valuation methods. Based on the result of the analyses and valuation, the author gives practical recommendations for the stakeholders. The result of the Master's thesis is the in-depth analysis and value estimate of Visa Inc. that can be employed by internal and external stakeholders to support their financing, strategic, or investment decisions.

Keywords: value, value drivers, valuation approach, valuation method, valuation process, DCF valuation.

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CONTENTS

INTRODUCTION

"The purpose of a company is to engage all its stakeholders in shared and sustained value creation. In creating such value, a company serves not only its shareholders but all its stakeholders – employees, customers, suppliers, local communities, and society at large." (Schwab, 2019).

The essence of valuation lies in the very core of the business establishment. It is both the journey and the end goal for a business to create long-term value for all its stakeholders to everyone involved in or affected by its activity.

Koller, Goedhart and Wessels (2020) argue that public confidence in large corporations has been sapped. The accelerating trends of globalization, climate crisis and extreme weather events, economic recession, social crisis, inequality, growing social divides, and the burgeoning power of technology giants have not received a proper response from the large corporations, whose activities define the health of our global economy nowadays. Commitment to providing well-paid jobs with growth opportunities, ensuring inclusion and utmost respect in the working environment, and offering high-quality and sustainable goods and services, as regards taking care of the social and natural environment – these are the long-term value creation strategy that has a power of a domino-effect, that improves the global welfare but is not still yet adopted.

More than ever now, it is necessary to highlight that it is the "value" that should determine the destination of any activity on the geopolitical level. All for-profit organizations must devote themselves to value creation over the long term to respond to the challenges and crises the whole world is facing now. Global warming, ecosystem collapse, pandemics, food insecurity, and full-scale war cannot be put on hold. Political and business leaders could resolve cost-of-living crises, rising inflation, geopolitical confrontation, and trade wars with the right vision and direction. All for-profit organizations must *"lead the companies for the benefit of all stakeholders – customers, employees, suppliers, communities, and shareholders"* (Statement on the Purpose of a Corporation, 2023).

The author aims to present an extensive literature review in business valuation, examine the notion of value, study the value drivers, and go through the valuation process in this thesis. The outcome of the research will be the intrinsic value of the company, estimated using selected valuation methods and compared to its market value.

The author will express the opinion on whether Visa Inc. is fairly evaluated, effectively creates value, and what is room for improvement upon the carried-out analyses and valuation. Finally, based on the strategic and financial analyses and the valuation results, the author will produce recommendations for the stakeholders.

OBJECTIVES AND METHODS OF MASTER THESIS PROCESSING

The objective of the Master's thesis is to do the valuation of Visa Inc. – a public company traded on the New York Stock Exchange (NYSE), applying selected valuation methods, namely discounted cash flow and discounted economic profit valuation.

The author will carry out a comprehensive literature review in the field of business valuation, starting by studying the notions of value and presenting fundamental value drivers, continuing with outlining the determinants of value creation. Finally, the author will explain the valuation process, present a classification of valuation approaches mentioned in the academic literature and describe selected valuation methods.

The strategic and financial analyses of Visa will be performed as an essential step in the valuation process. The author will do a complex analysis of the company, the industry, and the macroenvironment. The overview of the company, including its business description, business strategy, and corporate governance, will be presented. With the help of statistical data, macroeconomic and industry analyses will be carried out. Visa's main competitors and its competitive positioning will be determined, enabling the author to conduct a situation analysis and make SWOT, PESTLE, and Porter's Five Force analyses. The financial analysis of the balance sheet and income statement will be performed, and the risk matrix will be developed by the author for Visa as a part of the risk analysis.

One of the parts of the financial analysis will be revenue prediction using a simple linear regression method, and based on it, the author will forecast Visa's financial statements (balance sheet and income statement).

The discounted cash flow and discounted economic profit valuation methods will be used for the evaluation of Visa. The obtained estimated value of Visa will be then compared to its market capitalization. In accordance with the results of the analyses and valuation, practical recommendations for the stakeholders will be given, and conclusions will be drawn.

The limitations of the study the author will face will be formulated thereupon the performed valuation.

I. THEORY

1 TOPICALITY OF CORPORATE VALUATION

It is reasonable to approach corporate valuation with the understanding of why the businesses are operating worldwide and what vision they transmit. It is necessary to identify the values for which for-profit organizations stand before estimating their corporate value.

Supported and signed by 181 US CEOs, the business roundtable's statement on the purpose of a corporation says that *"we commit to deliver value to all of them, for the future success of our companies, our communities, and our country [USA]"* (Statement on the Purpose of a Corporation, 2023).

Although top business and world leaders have identified and confirmed that long-term value creation is the purpose of the business establishments, the evidence shows that out of 400 chief financial officers, 80 percent of them agree to reduce non-mandatory spending *"on potentially value-creating activities to meet their short-term earnings targets"* (Koller, Goedhart and Wessels, 2020, p.7).

McKinsey's Corporate Horizon Index from 1999 to 2017 indicates that managers tend to set goals to meet performance metrics in the short term rather than create value in the long run (Koller, Goedhart and Wessels, 2020).

Klaus Schwab, Founder and Executive Chairman of the World Economic Forum, urges the leaders to switch to long-term value creation over the short-term goals of increasing profits and sees it as the only possible way to overcome the significant distress happening worldwide now (Schwab, 2019).

Ciulla (2020) emphasizes that leaders are vital for value-driven activities and business development. A company needs to have and convey a certain vision formed and explained by values. The vision is a joint element for the company's performance and value creation, and the leaders are responsible for developing the vision based on the value they hold.

Koller, Goedhart and Wessels (2020) see the management and the board demonstrating bravery to switch to the fundamental activity of long-term value creation, despite the short-term consequences, now and in the future.

Increasing and delivering value to all stakeholders, in the long term, should be seen as an exclusive goal of every business entity. The pillars that sharpen global prosperity and attain the goal of a company are in figure 1.

Customers	Employees	Suppliers	Communities	Shareholders
• delivering a value that amply fulfils the customer's needs	• investing in employees, providing training and education to them • treating them respectfully •inclusion and diversity cultivation	• working with them as true business partners with a high sense of fairness and ethic	•contributing to the communities in which they work as well as supporting them.	• rewarding the capital providers for the company's growth, investments, and innovation with a long-term value generation.

Figure 1. Value creation of a for-profit organization through interaction with its stakeholders (*Source*: Own elaboration based on Statement on the Purpose of a Corporation, 2023 and Schwab, 2019).

Value is represented by the unidirectional interaction between the company and its customers, where the value creation for customers fosters in return for economic value for the company (Freudenreich, Lüdeke-Freund and Schaltegger, 2020).

1.1 The notions of value

"What gets measured gets managed."

Peter Drucker

To ensure value creation, there is a need to define and estimate the value.

"In accounting terms, the value is the worth of an asset, business entity, goods sold, services rendered, or liability or obligation acquired expressed in the monetary units, and it is the sum of all the benefits and rights arising from the ownership, in economic terms" (Corporate Finance Institute, 2023).

The Corporate Finance Institute defines valuation as an analytical process determining a company or asset's current or projected value. Determining valuation may involve many aspects, including capital structure, business management, market value, and the prospect of future earnings, and is often required in situations as follows: *"business reorganizations, shareholder disputes, employee stock or share option plans, mergers, and acquisitions, and expropriations"* (Corporate Finance Institute, 2023).

There are more precise definitions of "value," which are presented in table 1.

Table 1. The definitions of "value" are based on the model of determining the value

	Definition and Application
Stand-alone Value	*"Stand-alone value is the **value estimated based on the results obtained by the management** and the opportunities for growth that the company could reasonably expect, relying upon the technological, marketing, and organizational resources available to it".*
	"Refers to the controlling interest level, namely the value calculated from the perspective of existing shareholders (or the company's management). The basis for calculating value is the business plan realized by the management (or by an external analyst) without taking into account any interventions that could be made by a potential (strategic) buyer in case a transfer of control takes place".
Acquisition Value (Investment Value)	*"Acquisition value is the **value** of a company **determined from the point of** view of a **specific acquiring company**. The elements that constitute the acquisition value:* *- the stand-alone value of the target company;* *- the value of merger synergies that generate incremental cash flow in the target company;* *- the value of merger synergies that could be obtained in other businesses led by the controlling shareholders and any other private benefits accruing to controlling shareholders".*
	"The investment value includes the benefits related to merger synergies that the buyer expects to obtain as a result of the integration of the activities of the target company and the company that carries out the acquisition".
Fair Market Value	*"Fair market value is **the likely market price** that implies exchange value. It indicates the value that can be attributed to a business considering the valuations formulated by the generic potential buyers interested in acquiring the business. Fair market value is a sort of consensus value that can be assigned to a company by a group of potential buyers as a function of the nature and dimensions of the merger synergies expected in the scope of a particular area of business".*
	"If the expert performs the valuation using the DCF method, the basis for calculating the likely market price is the business plan of the target company modified by the merger synergies that can be shared in relation to the characteristics and motivations of the group of potential buyers".
Fair Value	*"The notion of fair value was initially developed in the legal field in order to define a **standard of value** to protect the interests of minority shareholders, and this notion of fair value is similar to fair market value".*
	"The definition of fair value by identifying a use value also incorporates the value of the synergies for a specific strategic investor".
Intrinsic Value	*"The intrinsic value indicates a generic definition of a **value obtained by** the generally accepted techniques of **fundamental analysis".***
	*"Intrinsic value is usually a **benchmark**: the research on listed securities issued by merchant and investment banks often compares the intrinsic value with the market value of a company in order to find evidence of its under- or overvaluation".*

Source: Massari, Gianfrate and Zanetti (2016), p.361-363

Stand-alone and intrinsic values are those numerical figures that result from mathematical calculations and estimations; acquisition or investment values include expected benefits expressed mathematically, which are added to the stand-alone value (Massari, Gianfrate and Zanetti, 2016).

Intrinsic value, which is a result of fundamental analysis, is one of the most important values needed for the valuation, as it serves as a "reference" point. Another fundamental value in the valuation process is the fair market value, as the companies are much relying on that "price" that the buyers are ready to pay for an asset offered by a company (Massari, Gianfrate and Zanetti, 2016).

Fair market value or fair value incorporates the behavior of buyers and their willingness and readiness to conduct the transaction at a particular market price at a particular moment, and that complicates the precise determination of those values in advance; however, the fair market value or fair value is widely used as a standard of value for the valuation purposes (Massari, Gianfrate and Zanetti, 2016).

Therefore, a reliable framework is required for fair market value estimation. Massari, Gianfrate and Zanetti (2016) offer three different approaches to achieve so:

1. Deal multiples: analyzing the multiples that refer to transactions where the controlling stake or the entire equity of comparable companies has been sold.

2. Stock market multiples: analyzing the multiples of comparable companies while also considering the premium of acquisition to diminish the difference between the market prices and strategic values estimated from the perspective of financial investors and acquirers, respectively.

3. Empirical valuation: develop methods that establish a connection between value drivers and value (Massari, Gianfrate and Zanetti, 2016).

The fair market value will not be fair unless there is reasonable confidence in deals analyzed data. Certain conditions qualify the assumption that the new transactions will be made at the historical prices, incorporating the following: firstly, the presence of active willing buyers in the segment of the market where the deal is concluding and the acknowledged existence of motivation for external growth. Secondly, the level of expectations has not changed dramatically. Thirdly, the strategic importance of the business being evaluated is comparable to the deals that took place in the past (Massari, Gianfrate and Zanetti, 2016).

The positioning of fair market value based on the condition of the presence of a group of active willing buyers can be explained visually in figure 2.

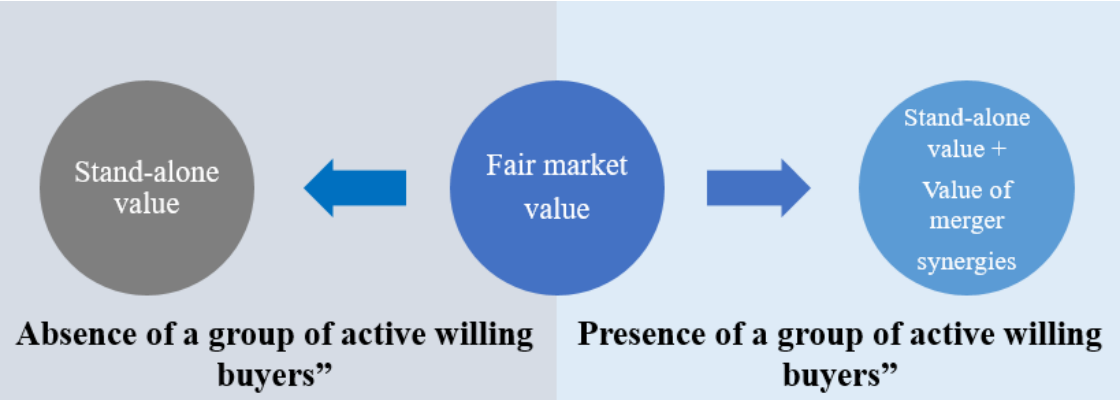


Figure 2. Positioning of fair market value (*Source*: Own elaboration based on Massari, Gianfrate and Zanetti, 2016)

The fair market value and intrinsic value are the main categories in the valuation process, as a comparison between the fair market value and the estimate of the intrinsic value creates certain expectations of the company's performance, and the investors' return ties in with these expectations, and not company's performance itself (Koller, Goedhart and Wessels, 2020).

To perform valuation, two more essential notions of values, namely terminal and liquidation values, are required. The need to assess the company value after the forecasted valuation period creates the terminal value. Damodaran (2018) gives three approaches to estimating the terminal value:

1) Getting terminal value as a result of applying a multiple to the earnings expected in the terminal year. Arguably, this approach is inconsistent with intrinsic valuation, as the multiples are usually obtained by observing the comparable companies trading in the market at the present moment, which incorporates a relative valuation rather than a DCF valuation.

2) Estimate a liquidation value for the firm's assets by assuming that the assets sold in the terminal year.

This approach is based on the assumption that the business ends in the terminal year, with its assets being liquidated. The proceeds from this liquidation are the so-called liquidation value. A few approaches may be used for estimating the liquidation value, and one is to use the book value of the assets (as it appears on the balance sheet) as a standpoint: employ assets' estimated book value to get an estimation of the liquidation value based on the book value.

3) Estimate a going concern or a terminal value.

Treat the firm as a going concern (supposing the business has sufficient resources to continue operating indefinitely until otherwise stated) at the end of the estimation period. Under this assumption, the value of going concern is obtained by the premise that cash flows will grow at a steady rate continuously. However, three key constraints: capping the growth rate, using mature company risk characteristics, and reinvestment and excess-return assumptions should be imposed on its estimation, as even minor changes in inputs could make a massive difference in the result (Damodaran, 2018).

1.2 Value Creation

The author has analyzed the different definitions of values and approached the stage of investigation of the principles underlying value creation. The terminology describing value and value creation will be carefully used onward because even such a fundamental notion of value sometimes gets misinterpreted in the business world: top management, boards, and media tend to equalize accounting earnings with value and look for an increase in earnings as a source of the rise of value (Koller, Goedhart and Wessels, 2020).

Koller, Goedhart and Wessels (2020) argue that although earnings and cash flows frequently tie in, earnings cannot describe value creation fully, whereas setting on earnings growth too much may deviate a company from value-creation.

1.2.1 Fundamentals of value creation

A company that grows *"creates value by earning a return on the invested capital greater than the opportunity cost of capital*" (Koller, Goedhart and Wessels, 2020, p.25).

To add and assess the value to the company, it takes four measures: return on invested capital (ROIC), revenue growth, cash flows, and cost of capital, with the last being a reference point. The relationship between the measures is in figure 3.

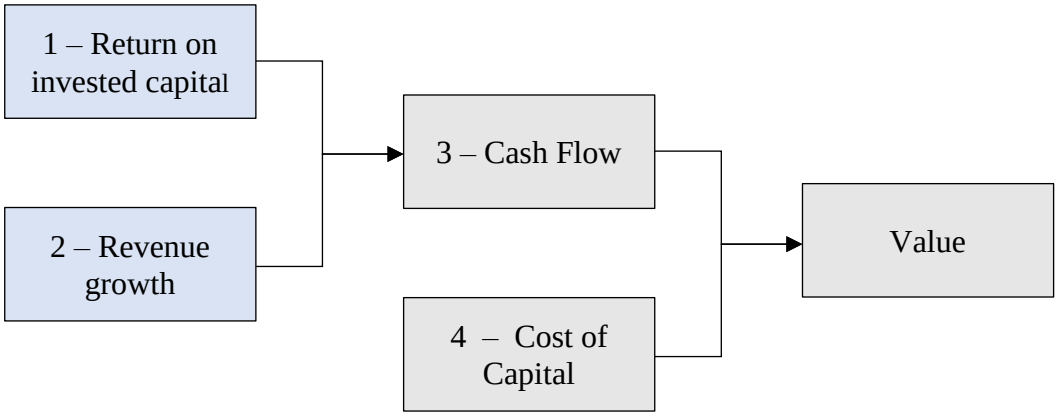


Figure 3. Growth and ROIC drive value (*Source*: Koller, Goedhart and Wessels, 2020)

Fundamental principles of value creation according to Koller, Goedhart and Wessels (2020):

1 – Value is created as a result of investments at returns higher than the cost of capital;

2 – Value is created by the revenue growth only on the condition that ROIC exceeds the cost of capital;

3 – Value is created by investments of cash at the present moment in order to generate more cash flows in the future;

4 – Cost of capital serves as a benchmark for assessing investment decisions and is used as a discount rate for discounting future expected cash flows, as it reflects the investors' expectations – the cost of their capital, as the investments being made.

5 – *Value is the sum of the present values of future expected cash flows – a point-in-time measure, and value creation is the change in value due to company performance (changes in growth and ROIC)"* (Koller, Goedhart and Wessels, 2020, p. 27).

Value can be expressed mathematically with the discounted cash flow (DCF) valuation formula (which a central method for intrinsic valuation) (Damodaran, 2018):

$$\text{Value} = \sum_{t=1}^{N} \frac{E(CF_t)}{(1+r)^t} \quad (1),$$

Where $E(CF_t)$ – is the expected cash flow in period t, r is the risk-adjusted discount rate for the cash flow, and N is the life of the asset.

Carefully examination of figure 3 gives evidence that the *"amount of value a company creates is governed by its ROIC, revenue growth, and ability to sustain both over time",* while the source of value creation is a strategy of maximizing *"the present value of future expected cash flows or economic profit"* (Koller, Goedhart and Wessels, 2020, p. 27).

1.2.2 Mathematics of value creation

It is required to begin with the correspondence of definitions with their mathematical expressions to arrive at the value driver formula. Some essential terminology is given by Koller, Goedhart and Wessels (2020), p. 49-50:

- ***"Net operating profit after taxes (NOPAT)** represents the profits generated from the company's core operations after subtracting the income taxes related to those core operations".*
- ***"Invested capital** represents the cumulative amount the business has invested in its core operations—primarily property, plant, equipment, and working capital".*
- ***"Net investment** is the increase in invested capital from one year to the next"*:

$$\text{Net Investment} = \text{Invested Capital}_{t+1} - \text{Invested Capital}_{t} \quad (2),$$

- ***"Free cash flow (FCF)** is the cash flow generated by the core operations of the business after deducting investments in new capital":*

$$\text{FCF} = \text{NOPAT} - \text{Net Investment} \quad (3),$$

- ***"Return on invested capital (ROIC)** is the return the company earns on each monetary unit invested in the business":*

$$\text{ROIC} = \frac{\text{NOPAT}}{\text{Invested Capital}} \quad (4),$$

  ROIC can be defined in two ways: as the return on all capital or as the return on new or incremental capital.

- ***"Investment rate (IR)** is the portion of NOPAT invested back into the business"*:

$$\text{IR} = \frac{\text{Invested Capital}}{\text{NOPAT}} \quad (5),$$

- ***"The weighted average cost of capital (WACC)** is the rate of return investors expect to earn from investing in the company and, therefore, the appropriate discount rate for the free cash flow".*

  The weighted average cost of capital equals the weighted average of the after-tax cost of debt and cost of equity:

$$\text{WACC} = \frac{\text{D}}{\text{V}}\text{k}_\text{d}(1 - \text{T}_\text{m}) + \frac{\text{E}}{\text{V}}\text{k}_\text{e} \quad (6),$$

  where,

D/V–target level of debt to value using market-based values,

E/V – target level of equity to value using market-based values,

k_d – the cost of debt,

k_e– the cost of equity,

T_m – company's marginal tax rate on income.

- ***"Growth (g)*** *is the rate at which the company's NOPAT and cash flow grow each year".*

$$g = ROIC \times IR \quad (7),$$

where ROIC is the return on new or incremental capital (Koller, Goedhart and Wessels, 2020, p.49-50).

Getting the value driver formula is possible under certain conditions: the assumption that the company's revenues, NOPAT, and free cash flows grow at a constant rate (the last condition is achieved through investment of the same proportion of the NOPAT in the business each year). According to the assumption the company's cash flows are growing at a constant rate, the cash-flow perpetuity formula could be used to express the value of the company (Koller, Goedhart and Wessels, 2020):

$$\text{Value} = \frac{FCF_{t=1}}{WACC-g} \quad (8),$$

Application of formulas (2), (3), (5), and (7) transforms formula (8) into the key value driver formula, as follows:

$$\text{Value} = \frac{NOPAT_{t=1}(1-\frac{g}{ROIC})}{WACC-g} \quad (9).$$

While in formula (9), the return on new or incremental capital should be used; for the reason of simplicity, the assumption that the ROIC and incremental ROIC are equal was set. Another assumption is that the ROIC and RONIC are the same; however, the return on new invested capital (RONIC) and not the company's return on all invested capital (ROIC) should be used in practice (Koller, Goedhart and Wessels, 2020).

Equation (9) captures the essence of valuation and perfectly reflects key value drivers – ROIC and growth – even though it is rarely used in practice as the model is extremely restrictive (sets a perpetual growth and ROIC going forward) while enterprises require more flexible valuation models, which take into account changing ROIC and the growth level.

Nevertheless, the formula is useful at illustrating the elements that affect the value: ROIC is always positively correlated with value, as it changes the investment required for growth; the growth is ambiguous, as it appears in both the numerator and the denominator and increases in growth increases value only when ROIC exceeds the cost of capital (Koller, Goedhart and Wessels, 2020).

The key value driver formula can also prove that ROIC and growth determine the multiples, such as market-to-book and price-to-earnings ratios often used to examine company valuation.

Division of both sides of equation (9) by NOPAT gives equation (10), which expresses that *"a company's earnings multiple is driven by both its expected growth and its return on invested capital"* (Koller, Goedhart and Wessels, 2020, p. 52).

$$\frac{\text{Value}}{\text{NOPAT}_{t=1}} = \frac{(1-\frac{g}{\text{ROIC}})}{\text{WACC}-g} \quad (10),$$

Transforming (10) into a value-to-invested-capital formula by using (4) formula:

$$\frac{\text{Value}}{\text{Invested Capital}} = \text{ROIC} \times \frac{(1-\frac{g}{\text{ROIC}})}{\text{WACC}-g} \quad (11),$$

In case the total ROIC and incremental ROIC are not equal, then equation (11) becomes:

$$\frac{\text{Value}}{\text{Invested Capital}} = \text{ROIC} \times \frac{(1-\frac{g}{\text{RONIC}})}{\text{WACC}-g} \quad (12).$$

1.2.3 Determinants of value creation

Mathematical formulas perfectly outline the value drivers: expected cash flows, discounted at the cost of capital, are the main source of value creation. And cash flow, in turn, is driven by expected returns on invested capital and revenue growth. Particularly for higher-ROIC companies, growth is a more robust value driver. On the contrary, for lower-ROIC companies, the ROIC serves as a stronger value-creation driver. Last but not least, a company can increase value exclusively when ROIC is higher than the cost of capital (Koller, Goedhart and Wessels, 2020).

A corollary of the fundamental determinants of value creation: *"anything that does not increase cash flows does not create value*" (Koller, Goedhart and Wessels, 2020, p. 53).

Damodaran (2018) shares the logic of value creation explained by Koller, Goedhart and Wessels, (2020) and raises four fundamental questions to consider before evaluating a company, as answers to these questions correspond to the determinants of value creation:

1. *"What are the cash flows that the existing investments of the company will generate?*

2. *How much value, if any, will be added by future growth?*

3. *How risky are the expected cash flows from existing and growth investments, and what is the cost of funding them?*

4. *When will the firm become a stable growth firm, making the estimation of a terminal value possible"* (Damodaran, 2018, p. 30)?

Answers may not be easy and fast for the different companies, especially considering the turbulent and uncertain macroeconomic environment that provides basic inputs for the valuation: the risk-free rate, the equity risk premium, and overall economic growth, which can be volatile and makes it challenging to estimate the value of a company.

Nevertheless, Damodaran (2018) also developed a universal framework suitable for valuing any company, presented in figure 4.

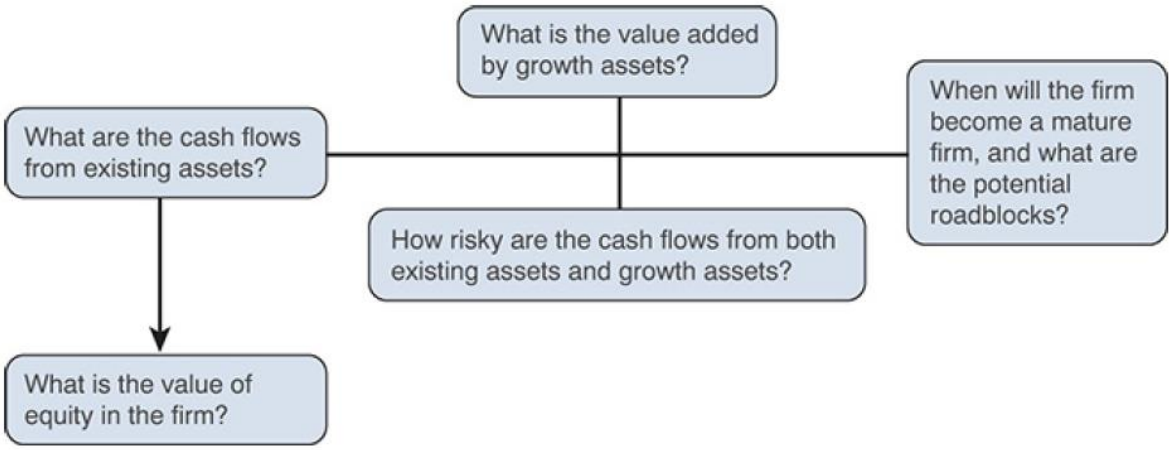


Figure 4. The fundamental questions in valuation (*Source*: Damodaran, 2018)

The same questions are considered while evaluating any business, and the same fundamental drivers create the company's value. However, different approaches, methodologies, and techniques could be applied to perform the valuation.

2 FRAMEWORKS FOR VALUATION

In this chapter, the author will study the issues that affect the valuation process, outline the required analytical steps prior to the valuation, present the most common valuation approaches and methodologies in the academic literature and explain in detail selected valuation methods.

2.1 The valuation process

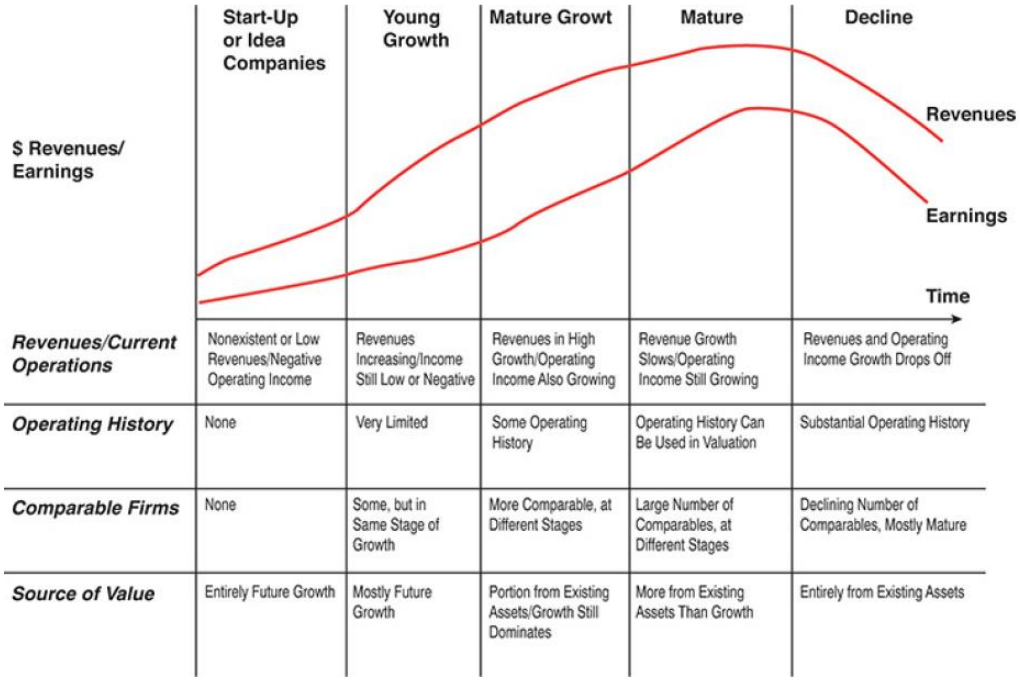
Having studied the notions of value, its determinants, and fundamentals, as well as the set of questions that explain value creation, now it is clear that it is not possible to jump directly into the formulas and get the value as a result of mathematical calculations exclusively as some inputs are not given. To correctly perform the valuation, a look at the broader picture of the company's standings is needed. Not only the issues that change the value but also those that affect the valuation process itself have to be considered. Damodaran (2018) recognizes the valuation across time, across the business spectrum, and across the life cycle, with each having its own characteristics and impact on the valuation outcome.

The time issue of the valuation is represented by the dynamic system of interest rates, market risk premiums, and macroeconomic indicators, which add to uncertainty and question the accuracy of the estimations.

The lifecycle stage also has an impact on the valuation as a whole. Application of the valuation framework created by Aswath Damodaran (figure 4) may be differently challenging as the companies at each stage of the lifecycle share dissimilar characteristics, namely the growth level, current operations, the breadth of operating history, the existence of relevant comparable firms and the prevailing source of value creation (figure 5). Easiness and precision in estimating cash flows, growth rates, risk, and maturity differ across the company’s life cycle (Damodaran, 2018).

The business spectrum in which a company operates may also make the valuation more difficult and complex for some businesses. Damodaran (2018) distinguishes six groups of companies for which exists the particular perplexity of valuation, so-called “financial services firms (banks, investments banks, and insurance companies), cyclical and commodity companies, businesses with intangible assets (human capital, patents, technology), emerging-market companies facing political risk, multi-business and global companies, user-, subscriber-, and customer-based companies”. If the evaluated company

belongs to one of the above-mentioned business spectrums, Damodaran (2018) has worth-considering advice on how to perform the valuation the most accurately.



Revenues/Current Operations	Nonexistent or Low Revenues/Negative Operating Income	Revenues Increasing/Income Still Low or Negative	Revenues in High Growth/Operating Income Also Growing	Revenue Growth Slows/Operating Income Still Growing	Revenues and Operating Income Growth Drops Off
Operating History	None	Very Limited	Some Operating History	Operating History Can Be Used in Valuation	Substantial Operating History
Comparable Firms	None	Some, but in Same Stage of Growth	More Comparable, at Different Stages	Large Number of Comparables, at Different Stages	Declining Number of Comparables, Mostly Mature
Source of Value	Entirely Future Growth	Mostly Future Growth	Portion from Existing Assets/Growth Still Dominates	More from Existing Assets Than Growth	Entirely from Existing Assets

Figure 5. Valuation issues across the life cycle (*Source*: Damodaran, 2018)

Massari, Gianfrate and Zanetti (2016) also agree on the complexity of the macro environment and the time issue of valuation, given that the input data into the valuation process are an area of uncertainty and are considering the following approach to be the most appropriate in organizing the analysis which enables the valuation subsequently (figure 6).

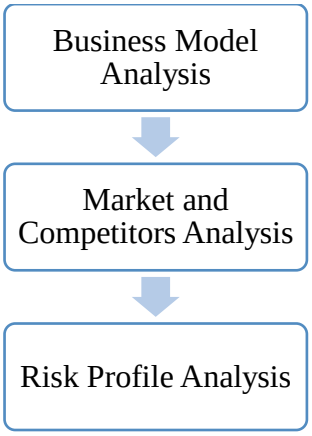


Figure 6. Uncertainty analysis (*Source*: Massari, Gianfrate and Zanett, 2016)

The uncertainty analysis consists of three essential steps: a business model analysis, market and competitors analysis, and risk profile analysis (Massari, Gianfrate and Zanetti, 2016).

Understanding how the company adds, delivers, and captures value in a broad sense, assesses the features of the goods or services offered, identifies target markets and marketing choices, and studies the business process and production decisions is the result of the investigation of the company's business model (Massari, Gianfrate and Zanetti, 2016).

At the market and competitors analysis stage, the firm's external environment, expressly the industry and the competitors, is examined. The study of the competitive pressure, the threat of substitutes, and barriers to entry as well as identification of the company's market positioning in relation to rivals, hence its the possibility of growth and profit, are the objectives of that analysis. Focusing the analysis on the business lifecycle is particularly important at this stage (Massari, Gianfrate and Zanetti, 2016).

Creating the risk profile implies a SWOT analysis of the environment and the competitors, as well as the examination of the possible changes in the firm's operations and performance caused by the risk factors, as well as the probability of the occurrence (Massari, Gianfrate and Zanetti, 2016)

The researchers and professionals in the field of corporate valuation acknowledge the need for a preliminary analysis of the company, the industry in which it operates, and the overall macroeconomic environment before evaluating it. And this could be achieved by carrying out a so-called strategic analysis of the company, which is a study of its external and internal environment (Corporate Finance Institute, 2023).

The strategic analysis consists of business model, macroeconomic, industry, and situational (incorporating SWOT, PESTLE, and Porter's Five Forces) analyses.

The strategic analysis, as well as financial and risk analyses of the company, are required prior to the valuation processes. Only after careful consideration of all the factors that affect the company's performance the appropriate valuation approach and corresponding method could be chosen (Massari, Gianfrate and Zanetti, 2016).

2.2 Classification of the valuation approaches

Massari, Gianfrate and Zanetti (2016) divide existing valuation methodologies into four groups of fundamental approaches based on the link between corporate value and the value driver (figure 7):

1. Income approach
2. Economic profit approach

3. Market approach

4. Net asset approach (Massari, Gianfrate and Zanetti, 2016)

The income approach assumes the value of a company, an investment, or, broadly speaking, an asset as a function of the expected returns it generates (Massari, Gianfrate and Zanetti, 2016). The method of discounted cash flow (DCF) valuation fits best into this approach.

Under the economic profit approach, the value of a company is defined by two elements: net asset value and earnings that exceed the "normal" return of the assets; thus, economic profit is the difference – unless negative – between realized returns and "normal" industry returns (Massari, Gianfrate and Zanetti, 2016). Excess earnings and economic value added (EVA) are the main methodologies commonly used in the economic profit approach.

The market approach is an empirical valuation that is done by weighing up assets with comparable ones traded on the market (Massari, Gianfrate and Zanetti, 2016).

The net asset approach is based on the idea that value derives from the net invested capital of the firm, so a company's value is a value estimate of the assets net of the liabilities (Massari, Gianfrate and Zanetti, 2016).

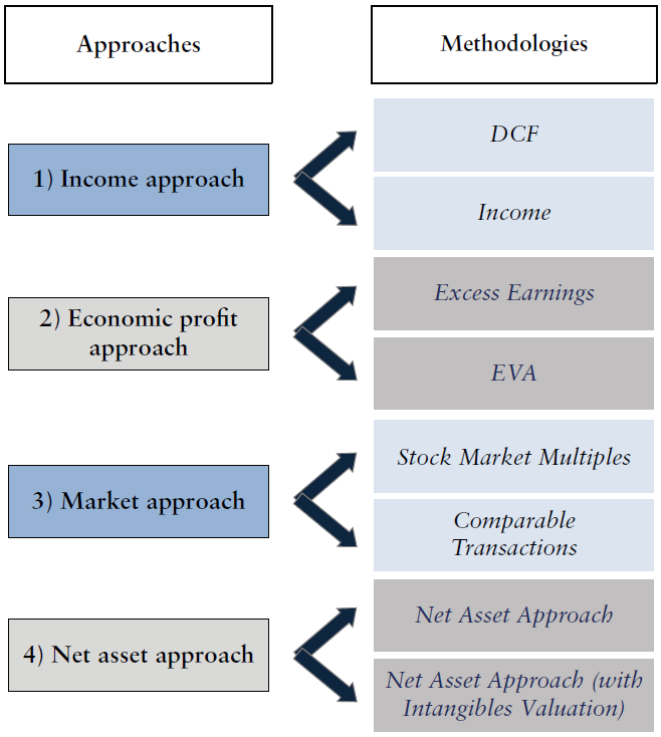


Figure 7. An overview of the main valuation approaches and methodologies (*Source*: Massari, Gianfrate and Zanetti, 2016)

Damodaran (2018) developed a different classification of the valuation approaches based on the nature of the corresponding valuation methodologies (table 2).

Table 2. Valuation approaches and methodologies

	Approaches		
	Intrinsic Valuation	**Probabilistic Valuation**	**Relative Valuation/Pricing**
Methodologies	1. Discounted Cash Flow Valuation. Variations on DCF: 1.1. Certainty-Adjusted Cash Flow Models; 1.2. Adjusted Present-Value Models; 1.3. Excess-Return Models.	1. Scenario Analysis; 2. Decision Trees; 3. Simulations.	1. Standardized Values and Multiples; 2. Earnings Multiples; 3. Book Value or Replacement Value Multiples; 4. Revenue Multiples; 5. Sector-Specific Multiples.

Source: Own elaboration based on Damodaran, 2018

The intrinsic valuation approach is based on estimating an asset's intrinsic value by looking at the asset's fundamentals and is comprised of the DCF method and its variations. The idea behind this approach is that an intrinsic value of an asset that generates cash flows (which is the condition for value creation) reflects both its cash flow potential and its risk, and the task is to determine that value. The probabilistic approach is a set of methodologies that could provide a value of an asset under different outcomes and not only under specified in advance expected risk-free rate, equity risk premium, and real and nominal risks. The relative valuation has the same sense as the market approached by Massari, Gianfrate and Zanetti (2016) and is a bunch of the methods of multiples.

2.3 Selected valuation methods – DCF valuation

The author will present in detail the DCF valuation method, which is a part of the income valuation approach. The selected company – Visa Incorporation – will be evaluated using the described intrinsic valuation approach in the project part of the thesis.

2.3.1 Frameworks for discounted cash flow valuation

Koller, Goedhart and Wessels (2020) offer an extensive classification of DCF-based valuation, with each having its measure, discount factor, and peculiarity (figure 8).

Model	Measure	Discount factor	Assessment
Enterprise discounted cash flow	Free cash flow	Weighted average cost of capital	Works best for projects, business units, and companies that manage their capital structure to a target level.
Discounted economic profit	Economic profit	Weighted average cost of capital	Explicitly highlights when a company creates value.
Adjusted present value	Free cash flow	Unlevered cost of equity	Incorporates changing capital structure more easily than WACC-based models.
Capital cash flow	Capital cash flow	Unlevered cost of equity	Combines free cash flow and the interest tax shield in one number, making it difficult to compare operating performance among companies and over time.
Equity cash flow	Cash flow to equity	Levered cost of equity	Difficult to implement correctly because capital structure is embedded within the cash flow. Best used when valuing financial institutions.

Figure 8. Frameworks for DCF-based valuation (*Source*: Koller, Goedhart and Wessels, 2020)

The enterprise discounted cash flow model perhaps is one of the most favorite among practitioners and academics. It is based on discounting the free cash flow to the firm at the weighted average cost of capital in order to obtain the present value of the cash flow. Notably, the proper application of both the enterprise DCF and the discounted economic profit models will give exactly the same results, however different yet complementary benefits. The professionals recommended applying both the enterprise DCF and the discounted economic profit while evaluating a company to obtain exhaustive results, as the economic profit model will indicate if a firm earns its cost of capital and appraise the value created annually (Koller, Goedhart and Wessels, 2020).

The adjusted present value (APV) valuation discounts the same cash flows as the enterprise DCF model, although at the unlevered cost of equity rate, implying no tax benefit from debt. The evaluated tax benefits arising from debt afterward are added to the equity value to obtain the total value of the enterprise. Proper application of the APV models gives the same results of value as the enterprise DCF model (Koller, Goedhart and Wessels, 2020).

The capital cash flow and equity cash flow models arguably are difficult to implement correctly. Capital cash flow consolidates the free cash flows and the interest tax shield disabling relevant comparison of the operating performance over peer companies and time. The discounting of cash flows to equity is happening at the levered cost of equity and not the WACC; however, the capital structure is embedded in the cash flow, which makes forecasting particularly problematic. Due to the high probability of error occurrence, these

models are not recommended to use as the initial valuation models (Koller, Goedhart and Wessels, 2020)

Damodaran (2018) promotes the use of the enterprise DCF model, namely enterprise (firm) valuation while valuing the whole enterprise, with both its existing and growth assets (figure 9) and equity cash flow model referred to as equity valuation for valuing only the equity stake of the firm (figure 10).

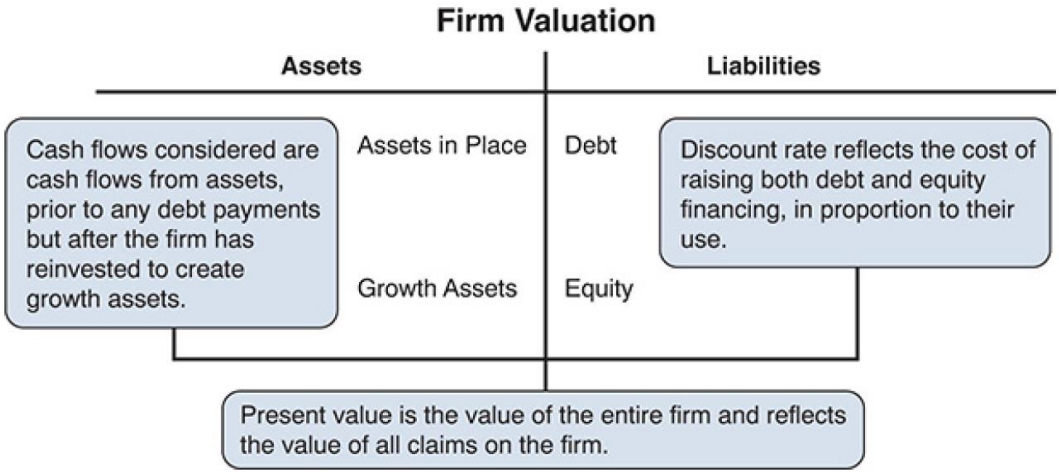


Figure 9. Valuing an enterprise (*Source*: Damodaran, 2018)

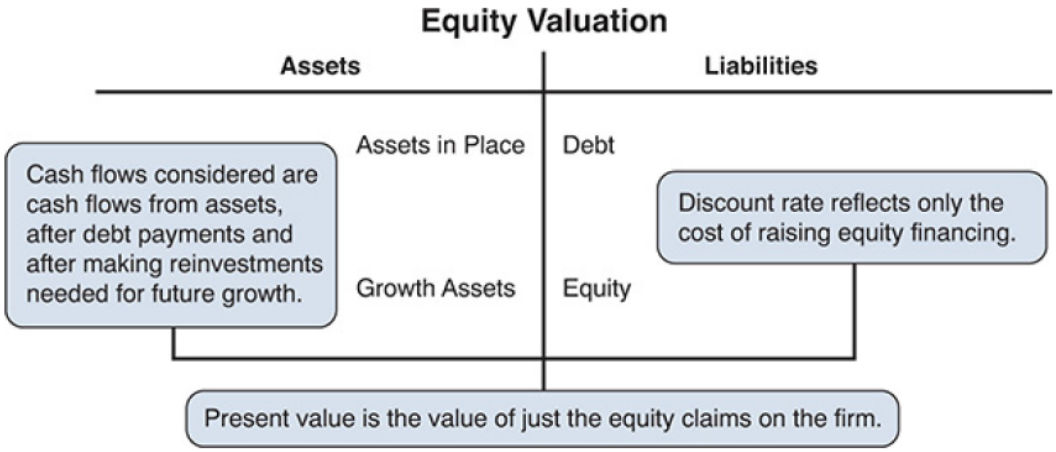


Figure 10. Valuing equity **(***Source*: Damodaran, 2018)

For the valuation of the whole company, the models of the enterprise DCF and the discounted economic profit will be applied, as advised by professionals and academics.

Approaching the valuation, four inputs into the process have to be figured out (figure 11):

a) the current cash flows,

b) the growth level,

c) the length of the growth period, incorporating the terminal value,

d) the cost of financing (WACC in the case of enterprise DCF and the discounted economic profit valuation models).

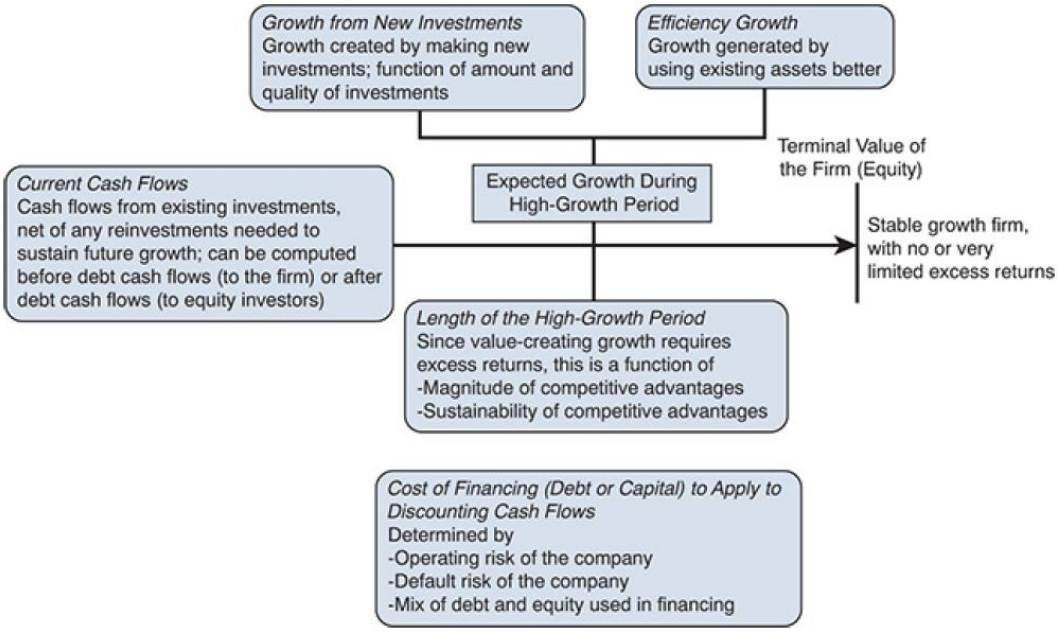


Figure 11. Determinants of value (*Source*: Damodaran, 2018)

2.3.2 Enterprise discounted cash flow

Free cash flows to the firm

Mathematical formulas (13) and (14) present two ways of estimating free cash flows to the firm (Damodaran, 2018):

$$\text{Free Cash Flow to Firm (FCFF)} = \text{After-Tax Operating Income} - \text{Reinvestment} = \text{After-Tax Operating Income} - (\text{Capital Expenditures} - \text{Depreciation} + \text{Change in Non Cash Working Capital}) \quad (13), \text{ or}$$

$$\text{FCFF} = \text{EBIT} \times (1 - \text{t}) \times (1 - \text{Reinvestment Rate}) \quad (14),$$

where

EBIT – earnings before interest and taxes,

t – tax rate,

and the reinvestment rate is calculated as follows:

$$\text{Reinvestment Rate} = \frac{(\text{Capital Expenditures} - \text{Depreciation} + \Delta - \text{Working Capital})}{\text{After-Tax Operating Income}} \quad (15).$$

Net present value

To get the present value of the future cash flows – to discount them at the given rate, there is a need to the use formula of the Net Present Value (NPV) of a cash flow as follows (Ross et al., 2018):

$$\text{NPV} = -C_0 + \frac{C_1}{1+r} + \frac{C_2}{(1+r)^2} + \cdots + \frac{C_T}{(1+r)^T} = -C_0 + \sum_{i=1}^{T} \frac{C_i}{(1+r)^i} \quad (16),$$

where

C_0 – the initial flow,

C_i – the cash flow in the period i,

r – the discount rate,

T – time period of the project.

The weighted average cost of capital

As the free cash flows are available to all investors, the discount rate ought to represent the risk faced by all investors; the weighted blend of the returns by debt and equity holders makes the WACC the appropriate rate for the enterprise DCF valuation. What is more, the interest tax shield also has value to the shareholders, and the WACC formula incorporates the after-tax cost of debt in itself (Brealey, Myers and Allen, 2020).

The discount rate is the weighted average cost of capital, previously discussed (formula 6):

$$\text{WACC} = \frac{D}{V} k_d (1 - T_m) + \frac{E}{V} k_e \, .$$

The cost of debt represents the interest rate on the company's borrowings (debt). In contrast, the cost of equity reflects the expected rate of return required by the company's common stock investors, which poses a real challenge to estimating the coefficient correctly. The capital asset pricing model (CAPM) is widely used in cost of equity calculation as it states that *"the expected rate of return equals the risk-free rate plus a risk premium that depends on beta and the market risk premium"* (Brealey, Myers and Allen, 2020, p. 228). Mathematically, the expected return on the stock (the cost of equity) under CAPM is written as follows:

$$R_S = R_f + \beta \times (R_M - R_f) \quad (17),$$

where

R_S – the expected return on the stock (cost of equity),

R_M – the expected return on the market portfolio,

R_f – the risk-free rate,

β – the systematic risk (market risk).

The cost of equity computation comes down to the appraisal of three input data into the CAPM formula (17), namely the risk-free rate R_f, the market risk premium ($R_M - R_f$), and the stock beta β, and the accuracy of these data estimation results in the preciseness of the cost of equity value.

Ross et al. (2018) advise using the U.S. Treasury bills or bonds yields as the risk-free rate to identify the market risk premium by employing one of the following methods: using historical data or the dividend discount model. Beta estimation remains an open question in corporate valuation, with many techniques available. However, professionals and scholars are actively investigating the topic to answer which method for a beta estimation results in the most accurate value. Ross et al. (2018) state that the company's beta is a function of different factors, with the three being the most important: the cyclicality of revenues, the operating leverage, and the financial leverage.

Brealey, Myers and Allen (2020) suggest taking betas from financial websites, such as Yahoo! Finance and Bloomberg; however, the authors admit that these betas are liable to statistical errors.

Berk and DeMarzo (2020) advocate CAPM over other methods of cost of equity estimation as it is seen to be the most reliable model, with possibly occurring errors being less significant than in other approaches, e.g., use of average historical returns.

Growth rate

The estimation of the growth rate could be achieved in two ways, namely, the internal and sustainable growth rates.

If there is no external financing of any kind, *"the maximum growth rate that a company can achieve is called* ***the internal growth rate****"* and is calculated as follows (Ross et al., 2018, p. 69):

$$\text{Internal Growth Rate} = \frac{\text{ROA} \times \text{b}}{1 - \text{ROA} \times \text{b}} \qquad (18),$$

where

ROA = Returns on Assets = $\text{Net Income}/\text{Total Assets}$,

b = Plowback (retention) ratio = $\text{Addition to Retained Earnings}/\text{Net Income}$.

Brealey, Myers and Allen (2020) define certain conditions enabling a company to achieve the internal growth rate: firstly, it plows back a high proportion of its earnings; secondly, it has a high return on equity (ROE); and thirdly it has a low debt-to-asset ratio, however, mention that calculation of the internal growth rate may be tricky as ROE depends on the growth rate.

The highest growth rate the firm can achieve *"with no external equity financing while maintaining a constant debt-equity ratio"* (without increasing its financial leverage) is the sustainable growth rate, and it is obtained as follows (Ross et al., 2018, p. 70):

$$\text{Sustainable Growth rate} = \frac{\text{ROE} \times \text{b}}{1 - \text{ROE} \times \text{b}} \qquad (19),$$

where

ROE = Return on Equity = $\text{Net Income}/\text{Total Equity}$,

b = Plowback (retention) ratio = $\text{Addition to Retained Earnings}/\text{Net Income}$.

Brealey, Myers and Allen (2020) admit that the estimation of sustainable growth is even more challenging as not only ROE depends on the growth, but the equation has to be solved for both the return on equity and the growth rate that leaves leverage unchanged.

Ross et al (2018) emphasize that ROE also affects growth, as the growth level determines the ROE. The ROE could be presented as a product of three:

$$\text{ROE} = \text{Profit margin} \times \text{Total asset turnover} \times \text{Equity multiplier} \qquad (20).$$

The observation of sustainable growth expression (19) gives evidence that everything that increases ROE will increase the sustainable growth rate, and the same applies to the plowback ratio.

The components of the ROE (20) explicitly explain what affects the change of ROE (Ross et al., 2018):

a) Profit margin, which represents the company's ability to generate funds and therefore contribute towards its sustainable growth.

b) Dividend policy as the fraction of net income paid out as dividends and the retention ratio are negatively correlated.

c) Financial policy from the financial leverage perspective: an increase in the debt-to-equity ratio leads to an increase in the sustainable growth rate as additional debt financing becomes available.

d) Total asset turnover as an opposite to capital intensity: an increase in the total asset turnover increases the sustainable growth rate, as it reduces the need for new assets (Ross et al., 2018).

Terminal value

The terminal value, or in other words continuing value, could be obtained with the following formula (Koller, Goedhart and Wessels, 2020):

$$\text{Continuing Value}_t = \frac{\text{NOPAT}_{t+1}(1-\frac{g}{\text{RONIC}})}{\text{WACC}-g} \qquad (21),$$

where

g – terminal growth rate,

RONIC – return on new invested capital,

t+1 – terminal period.

The terminal growth rate represents the rate at which the cash flow is projected to grow without reinvestment in incremental capital (Mercer and Harms, 2021).

"The terminal value is the present value at the horizon (terminal year) of all subsequent cash flows", and its estimation requires scrutiny as, in most cases, *"it accounts for the majority of the enterprise value"* (Brealey, Myers and Allen, 2020, p. 512). As for the estimation length – the commonly used forecast period is a medium-term horizon (Brealey, Myers and Allen, 2020).

Enterprise value

Summing up all the information on DCF valuation, the final formula to get the firm's value using the enterprise DCF valuation model is as follows:

$$\text{Enterprise Value}_t = \sum_{i=1}^{t} \frac{\text{FCFF}_i}{(1+\text{WACC})^i} + \frac{\text{NOPAT}_{t+1}(1-\frac{g}{\text{RONIC}})}{\text{WACC}-g} \qquad (22).$$

2.3.3 Discounted economic profit

The economic-profit model allows one to identify how and when the enterprise creates value, and if it is well performed, it gives the valuation results equivalent to that of enterprise DCF valuation.

Economic profit

Economic profit is a measure of the company's created value in a single period (Koller, Goedhart and Wessels, 2020):

$$\text{Economic profit} = \text{Invested Capital} \times (\text{ROIC} - \text{WACC}) \quad (23),$$

Applying the definition of ROIC presented in equation (4), formula (23) can be transformed into the following:

$$\text{Economic profit} = \text{NOPAT} - (\text{Invested Capital} \times \text{WACC}) \quad (24).$$

Economic profit-based valuation

The key value driver formula based on economic profits, which was derived from the free cash flow valuation model under the assumption that ROIC on existing capital equals ROIC on new projects, is as follows (Koller, Goedhart and Wessels, 2020):

$$\text{Value}_0 = \text{Invested Capital}_0 + \frac{\text{Invested Capital}_0 \times (\text{ROIC}_1 - \text{WACC})}{\text{WACC} - \text{g}} \quad (25),$$

By applying formula (23), the value formula is obtained as follows:

$$\text{Value}_0 = \text{Invested Capital}_0 + \frac{\text{Economic Profit}_1}{\text{WACC} - \text{g}} \quad (26).$$

A mathematical explanation of the economic profit valuation model (26) shows that the company's operations value is a sum of its book value of the invested capital and the present value of all future economic profits that represent the created value. In this valuation model, the consideration that economic profits will rise at a constant rate is set, and the valuation is carried out through the growing perpetuity assumption. Also, this formula explains that if the economic profit is zero, the value of operations will equal the invested capital; however, when the company's value of operations surpasses its invested capital, it is possible to identify the sources that allow the company to achieve this strong financial performance (Koller, Goedhart and Wessels, 2020).

By adding the time constituent to the formula (26), the formula to evaluate the company using the discounted economic profit model is obtained:

$$\text{Value}_0 = \text{Invested Capital}_0 + \sum_{t=1}^{\infty} \frac{\text{Economic Profit}_t}{(1+\text{WACC})^t} \qquad (27).$$

Worth mentioning that the economic-profit valuation is derived from the free cash flow model, so if the valuation based on discounted economic profits is conducted correctly, the results must be identical to the enterprise DCF model. However, to guarantee equivalence, the professionals recommend applying the following three steps approach (Koller, Goedhart and Wessels, 2020, p. 193-194):

1. *"Use the beginning-of-year invested capital (i.e., last year's value) and not the average or current-year invested capital"*;
2. *"Define invested capital for both ROIC and economic profit consistently, i.e., using the same value"*. For instance, including/non-including the goodwill for measuring both ROIC and invested capital, respectively;
3. Discount the projections at *"the constant of cost of capital"* (Koller, Goedhart and Wessels, 2020 p. 193-194).

Terminal value

To conclude the valuation, there is a necessity to use the terminal value for the horizon.

If, in the continuing-value year, the RONIC is the same as the ROIC, the economic profit-based value driver formula (25) to estimate the continuing value could be used. However, *"if RONIC going forward differs from the final year's ROIC, then the equation must be separated into current and future economic profits"* (Koller, Goedhart and Wessels, 2020, p. 194):

$$\text{Value}_t = \text{Invested Capital}_t + \frac{\text{Invested Capital}_t \times (\text{ROIC}_{t+1} - \text{WACC})}{\text{WACC}} + \frac{\text{PV}(\text{Economic Profit}_{t+2})}{\text{WACC} - g} \qquad (28),$$

Current Economic Profits Future Economic Profits

such that:

$$\text{PV}(\text{Economic Profit}_{t+2}) = \frac{\text{NOPAT}_{t+1} \times (\frac{g}{\text{RONIC}}) \times (\text{RONIC} - \text{WACC})}{\text{WACC}} \qquad (29).$$

3 FUNDAMENTAL ANALYSIS OF VISA INC.

Following the recommended steps in the valuation process, the author begins the project part of the thesis with the analytical study of the company – carrying out the fundamental analysis of the company.

3.1 Overview of the company

Visa Inc. (also referred to as Visa or the company) is a global payments technology company that operates in the credit services industry in the financial services sector by facilitating electronic payment transactions worldwide. It operates one of the largest payment processing networks – VisaNet – which provides transaction processing services (authorization, clearing, and settlement) and connects merchants and financial institutions in over 200 countries and territories. By leveraging its scale and technology, Visa provides fast, secure, and convenient payment solutions to customers worldwide. The company enables consumers to use credit, debit, and prepaid cards to make purchases both in-person and online and also offers a range of services for businesses, including fraud prevention and data analytics. However, Visa is not a financial institution; the company does not produce cards or charge fees for account holders of its products (Visa, 2022).

The company was originally founded in 1958 as BankAmericard, becoming Visa in 1976. Today, it is headquartered in San Francisco, California, and employs more than 26,000 people (Visa, 2022).

Visa Inc. is a public company traded on the New York Stock Exchange, and its class A common stock is a component of many leading indices: the S&P 500, Dow Jones, DJ Composite, S&P 100, Investing U.S. 30, NYSE Composite, and others (Visa Stock Components, 2023).

As of March 2023, Visa Inc. is the tenth world's largest company by market capitalization (Companies ranked by Market Cap, 2023).

As of 31 March 2022, there were 3.9 billion Visa cards worldwide, connecting 14 900 financial institutions as of 30 June 2022, reaching a total volume of 11.6 trillion U.S. dollars, representing 192.5 billion transactions in the 2022 fiscal year (Visa, 2022 and Visa Fact Sheet, ©2023).

Visa Inc. acknowledges over 80 million merchant locations using Visa payment services worldwide and conducts transactional proceedings in more than 160 currencies as of 2022 (Visa, 2022).

3.1.1 History of Visa Inc.

Visa was originally founded in 1958 as BankAmericard, a credit card launched by Bank of America. It quickly gained popularity and was later renamed Visa in 1976 to reflect its global expansion. Throughout the 1980s, Visa grew rapidly by expanding its network of banks and merchants and introducing new products such as debit cards and ATM access, developing multiple-currency clearing and settlement in 21 currencies, sponsoring the Olympic Games, working on fraud-prevention, launching financial literacy program for the masses in 20+ countries reaching out millions of people. In 1997 Visa reached a total payment volume of one trillion U.S. dollars, followed by one billion cards issued in 2001, and in 2004 achieved a surplus in total debit volume over total global credit volume. The year 2006 brought a total payment volume of 4.4 trillion U.S. dollars, and 2007 became the year Visa restructured and created a new global corporation – Visa Inc. The following year Visa Inc. went public at the NYSE and became the largest initial public offering in U.S. history. This move enabled Visa to raise capital and expand its business beyond credit and debit cards to include new technologies such as mobile payments and e-commerce. In 2016, Visa Inc. concluded the acquisition of Visa Europe and became one global company (History of Visa credit cards, 2023).

The timeline of the most important historical developments of Visa Inc. is presented in figure 12.

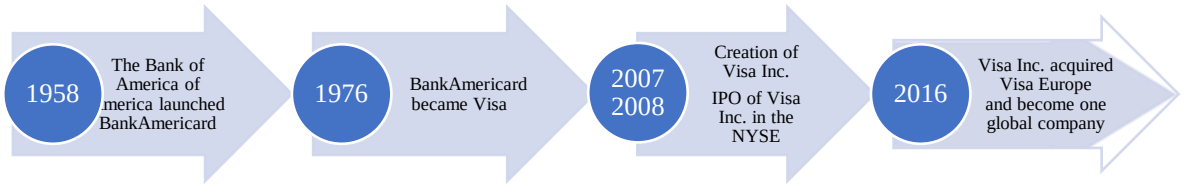


Figure 12. Timeline of Visa Inc. (*Source*: Own elaboration based on History of Visa credit cards, 2023)

3.1.2 Mission and vision

Visa's vision is *"to uplift everyone, everywhere, by being the best way to pay and be paid"* (Visa, 2022).

In its mission statement Visa aims *"to connect the world through the most innovative, convenient, reliable, and secure payments network, enabling individuals, businesses, and economies to thrive"* (Visa Fact Sheet, ©2023).

Visa Inc. is committed to delivering value to all its stakeholders, and the ways through which it is achieved are in figure 13.

Consumers	Merchants	Acquirers	Issuers	Governments
• Giving consumers secure and convenient ways to pay and be paid.	• Providing merchants with assured payments and more extensive customer reach.	• Providing acquirers with low-cost and low-risk acceptance tools;	• Helping issuers continue to provide innovative and secure solutions for their customers	• Working with governments to help benefit people faster and with less disruption

Figure 13. Delivering value by Visa (*Source*: Own elaboration based on Visa Fact Sheet, ©2023)

3.1.3 Business description

As a payments technology company, Visa Inc. provides secure, reliable, and efficient payment infrastructure enabling effortless money movement intermediating consumers and businesses, making it available for anyone anywhere.

The core business lies in operating transaction processing services, such as authorization, clearing, and settlement, to financial institutions and merchant clients, involving issuing and acquiring financial institutions through the own advanced transaction processing network VisaNet.

The business model referred to as the "four-party" model is presented in figure 14.

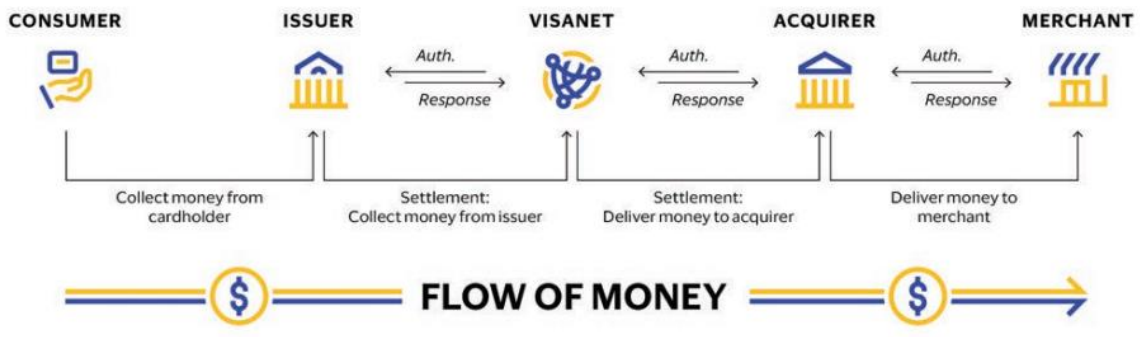


Figure 14. Visa customer-to-business (C2B) payment transaction (*Source*: Visa, 2022)

The transaction for the goods or services bought from a merchant by a consumer using a Visa card or other payment product proceeds through VisaNet involving the authorization with an issuer and an acquirer. The transaction data is provided to an acquirer, often represented by a bank or third-party firm that accepts Visa cards and other Visa payment products, by the merchant through VisaNet for verification and further processing. The acquirer passes the transaction data to Visa, which reaches the issuer for the customer's account or credit line check to proceed with the transaction authorization. As soon as it is authorized, the acquirer gets the value of the transaction less the interchange reimbursement fee (IRF) from the issuer, who afterward posts the transaction in the consumer's account. The merchant receives the amount of the purchase less the merchant discount rate (MDR) from the acquirer (Visa, 2022).

Visa Inc. sets default IRFs that apply without other established settlement terms and reflect the value merchants get by using Visa products. Indeed, interchange reimbursement fees have a significant effect on the cost-benefit balance that account holders and merchants obtain from using the Visa payment network. The 2022 Visa's IRF rates range from 1.4% to 2.5% for credit cards and equal to 0.05% for debit cards (Fabregas, 2022).

IRF rates are considered to reflect the value derived from accepting Visa products and received by merchants. Important to mention that Visa that any fees the acquirers charge the merchants for transaction authorization and acceptance, including the merchant discount rate, do not add any revenue to Visa Inc.

However, the payments ecosystem keeps growing and advancing, and Visa Inc. responds: the company has broadened the "four-party" model to include digital banks, digital wallets, and a range of financial technology companies, governments, and non-governmental organizations (NGOs) and is committed to providing them with a scalable payment infrastructure (Visa, 2022).

3.1.4 Business strategy

To advance revenue growth, Visa is focusing its strategy on three principal areas – consumer payments (1), new flows (2), and value-added services (3) as well as aims at fortifying the key foundations of its business model (4) (Visa, 2022).

1) Consumer payments

The strength of its three core products – credit, debit, prepaid cards, digital credentials (figure 15), and digital enablers has been sustaining the company's growth (Visa, 2022).

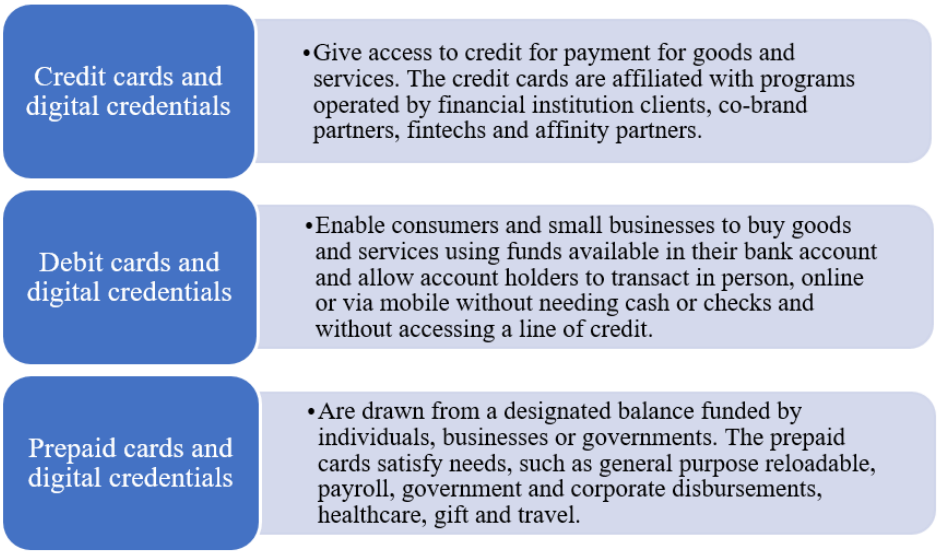


Figure 15. Visa's core products (*Source*: Visa, 2022)

The enabling technologies Visa has adopted to sustain its robust payment ecosystem include the following (Visa, 2022):

- *Contactless payments or tap-to-pay technology* enables payments through tapping a mobile device or a contactless card on a terminal. As of 2022, contactless payments account for more than 90% of all face-to-face transactions in more than 30 countries and territories, more than 50% in more than 90 countries, and more than 70% globally, excluding the U.S.
- *Tokenization through the Visa Token Service (VTS).* Replacing a 16-digit account number with a token that includes a surrogate account number and cryptographic information improves authorization, reduces fraud, and favors secure in-store and online payments. Visa Inc. provisioned more than 4 billion network tokens which overreached the number of physical cards in circulation as of the end of the fiscal year 2022.
- *Click to Pay* brings a cardholder a more rapid and simplified yet secure experience for online checkout by no longer requiring the entry of personal information to support the transaction authorization. Click to Pay is a standardized and simplified solution for all payments network participants, and it makes digital payments as easy as in physical stores (Visa, 2022).

2) New flows

Visa is expanding its network of networks to cover new money flows in-between consumers, businesses, and governments around the world by facilitating person-to-person (P2P), business-to-consumer (B2C), business-to-business (B2B), business-to-small business (B2b) and government-to-consumer (G2C) payments, in addition to the consumer to business (C2B) payments (figure 16) (Visa, 2022).

Figure 16. Sources of money movement (*Source*: Visa, 2022)

The company set a goal to improve the identified patterns of money movement coming from different sources, making them more convenient, seamless, consistent, and safe.

Visa recognizes patterns of relationships include domestic and international transactions between family and friends (P2P), getting a refund, reimbursement, insurance disbursement, payroll payments without paper checks (B2C), large cross-border supplier payouts, and operating accounts payable and receivable (B2B), payments to suppliers, contractors, vendors, and other partners by large businesses (B2b), and payments made by the government for unemployment, social aid or stimulus, etc. (G2C) (Visa, 2022).

3) Value-added services

Visa Inc. diversifies its revenue streams through products and services, so-called value-added services (figure 17), which allow the company to strengthen clients' loyalty and satisfaction and to adopt comprehensive and effective solutions across the network that reflect the needs of Visa’s stakeholders.

Issuing solutions	Acceptance solutions	Risk & Identity solutions	Open banking	Advisory services
•Visa DPS (Debit Processing Services); •Digital insurance; •Buy Now, Pay Later (BNPL).	•Cybersource: secure services for transaction processing services that reduce operational costs and mitigate frauds.	•Protection of account holder data; •Facilitation of account holder authentication; •Fraud prevention.	•Account verification; •Balance check; •Personal finance management; • Account-to-account transactions.	•Offering solutions for Visa's clients based on deep payments expertise, proprietary analytical models and economic intelligence.

Figure 17. Value-added services of Visa Inc. (*Source*: Own elaboration based on Visa, 2022)

4) Fortifying the key foundations

The business model of Visa is based on five pillars, namely a network of networks, technology platforms, security, brand, and talent, and each of them creates and defines the success of the corporation (Visa, 2022).

First and foremost, Visa seeks to become the single connection network, enabling fast, secure, and straightforward money transferring for all senders and receivers. Being the network of networks is Visa's path and goal.

The security and protection of Visa's technology platforms warrant reliability and credibility, bring the trust of all the users of Visa services, and are a keystone of Visa operations. The data centers, large telecommunications infrastructure, software, and hardware all require robust security protection, which the company distinguishes as one of its key foundations. Security technologies are deployed to protect the confidentiality of data and the network's integrity. Cybersecurity is of huge concern and trustworthiness.

Deep brand awareness, brand image, and brand identity are high priorities in Visa's business model. The strong brand of Visa helps the company reach more clients, merchants, partners, and financial institutions, as well as increases reliance and tends to favor more customers. Visa Inc. sponsors top world events – the Olympic and Paralympic Games, The National Football League, the International Association Football Federation (FIFA), and others.

Last but not least, the continued success of Visa is accounted for by its personnel: attracting, nurturing, and advancing talents worldwide is crucial for developing a successful global

company. In 2022, in more than 80 countries, Visa employed approximately 26,500 people, a 23-percent increase from the previous year (Visa, 2022).

3.1.5 Corporate governance

Leading by example: running a business ethically, inclusively, responsibly, and sustainably is a top priority for Visa – not only a global leader in digital payments but one of the largest in terms of market capitalization company worldwide. Visa devotes itself to delivering value to its stakeholders and empowering people, communities, and businesses to prosper. The company addresses the environmental, social, and governance (ESG) issues grouped into five areas (figure 18).

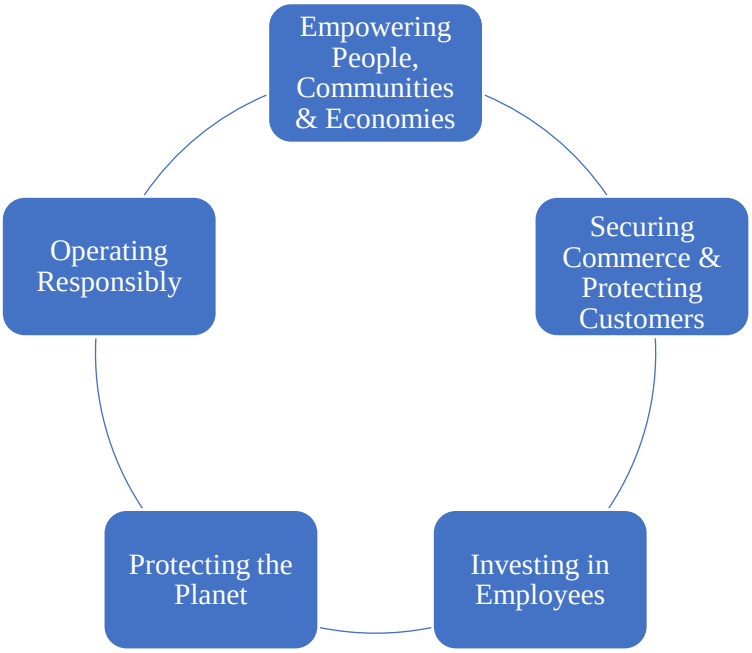


Figure 18. Five clusters of ESG of Visa Inc. (*Source*: Own elaboration based on 2021 Environmental, Social & Governance Report, ©2022)

Visa's corporate policy is largely focused on mitigating risks and creating value across all the above mentioned areas. Some of the achievements as of 2022 are as follows (2021 Environmental, Social & Governance Report, ©2022):

Empowering People, Communities & Economies. Visa succeeded in implementing its goal of digitally enabling small and medium-sized enterprises (SMBs) in the number of 50 million by 2023 by 61%, reaching 30.7 million SMBs, supporting 8500 startups from 100 countries in Visa Everywhere Initiative, and reaching 3.2 million people as of Visa Practical Money Skills educational initiative, which is available in 48 countries and in 19 languages.

Securing Commerce & Protecting Customers. Visa advanced authorization and Visa risk manager enabled it to prevent the fraud losses in the amount of 26 billion U.S. dollars; Visa invested 9 billion U.S. dollars in cybersecurity over the last five years and achieved a historically low fraud rate of 0.07 U.S. dollars for every 100 U.S. dollars transacted on Visa's network.

Investing in Employees. Visa provides equal salaries for the same work regardless of gender and attracts 21000 active users in Visa Learning Hub.

Protecting the Planet. Visa has been on the World's Most Ethical Companies list for ten consecutive years.

Operating Responsibly. Visa carries out all its operations at the carbon neutrality level and maintains a 100% use of renewable electricity (2021 Environmental, Social & Governance Report, ©2022).

In 2022 Visa Inc. was awarded World's Most Admired Companies by Fortune, World's Most Ethical Companies by Ethisphere, 2022 America's Most JUST Companies by JUST Capital, recognized as the Global 2000 World's Best Employers by Forbes, and as the World's Most Valuable Global Brands by Brandz in 2021 (2021 Environmental, Social & Governance Report, ©2022).

A high level of ESG allows companies to be superior to their peers, gives them a competitive advantage, and leads to more efficient and seamless value creation (Giese et al., 2019).

3.2 Macroeconomic Analysis

The credit services industry has no borders, and the financial services sector is particularly exposed to all the changes in the macroeconomic environment, reflecting the trends and patterns. The author considers carrying out the macroeconomic analysis by studying the macroeconomic indicators that describe the world's population, the world's gross domestic product (GDP) and inflation growth rates, Central Banks' interest rates as well as overall growth projections and pointing out factors that shape the financial services sector the most. The author will also outline the share of account ownership worldwide in dynamics and explain the reasons for that change.

The world's population (in millions of people) is presented in figure 19. There is an upward trend toward an increase of population in both advanced and emerging markets and developing economies in absolute numbers towards the year 2027, with the world's

population reaching the 8 billion mark in 2026, according to the IMF World Economic Outlook 2022.

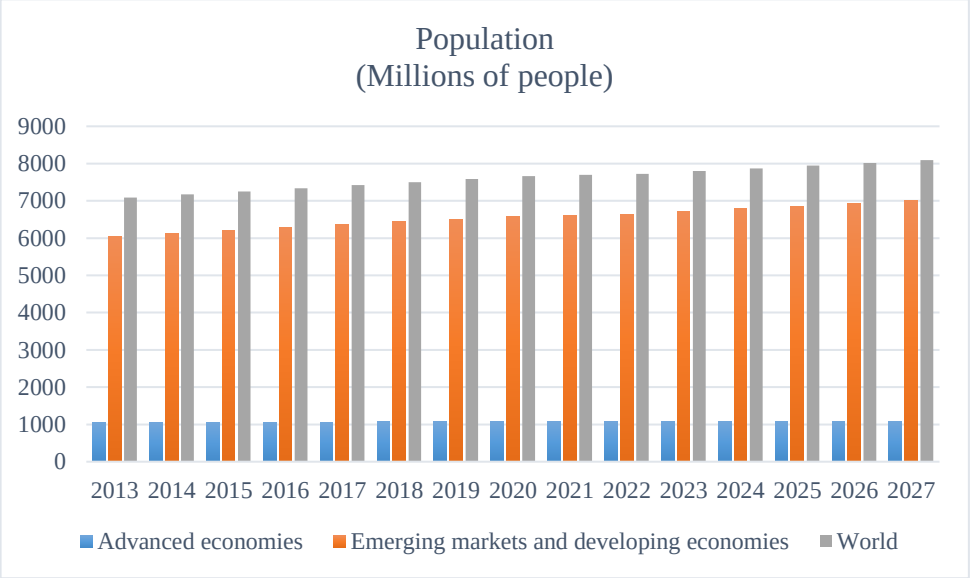


Figure 19. World's population (millions of people), 2013-2027 (*Source*: Own elaboration based on IMF, 2022)

However, the growth pace tends to decline. In the last 100 years, the world's population has almost quadrupled. It moved fast from 2 billion in 1928 to 4 billion in 1975 and 6 billion in 1999 (Crowfoot, 2022). The world's population growth rate for the last ten years fell from 1.2% to 0.4% in 2022 and is projected to be around 0.9% for the following five years. It is interesting to notice that around 86% of the world population is presented by emerging markets and developing economies, and the expected growth rate for 2023-2027 is almost five times higher than for advanced economies: 1.05-1.03% against 0.23-0.21%, respectively.

The emerging and developing economies constitute the vast majority of the world's population and present ample market opportunities that could be seized and bring economic and social benefits.

By looking at the real GDP growth rates (figure 20), it can be seen that from 2013 to 2016, emerging and developing economies and advanced economies moved in the opposite direction in terms of real GDP growth – it was declining for the first group and increasing for the second, however, since 2017 both two analyzed groups of economies follow the same trend in the real GDP annual percent change, while the emerging and developing economies have always higher, usually more than twice, growth rate compared to the advanced economies.

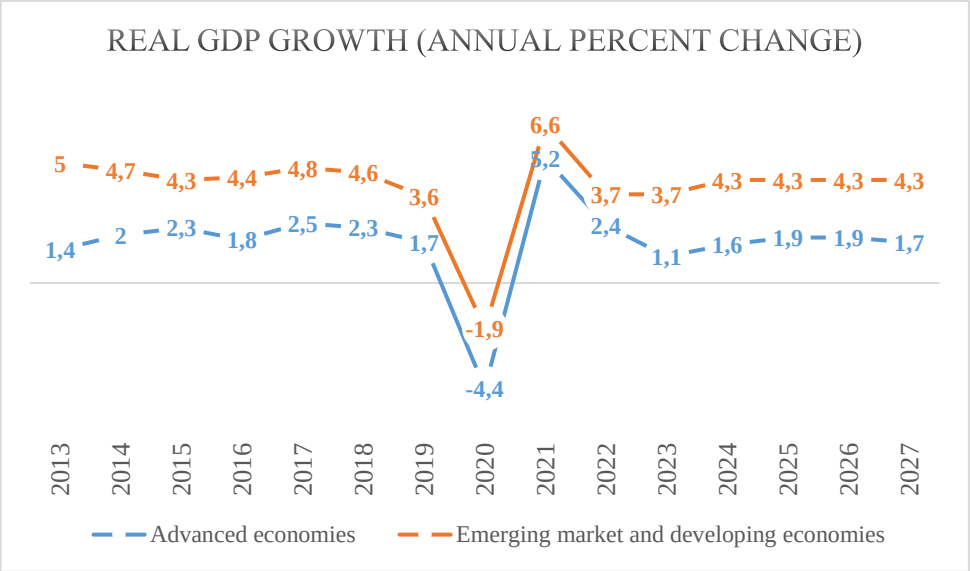


Figure 20. Real GDP growth (annual percent change), 2013-2027 (*Source*: Own elaboration based on IMF, 2022)

The outburst of the COVID-19 pandemic led to a negative value of the real GDP growth rate in 2020, hitting the advanced economies harder. In 2022 the real GDP growth rate stabilized and achieved the pre-pandemic level for both groups. In the forecasted period of 2023-2027, the growth rate is expected to be around 4.3% for emerging and developing economies and rise from 1.1% to a maximum of 1.9% for advanced economies.

Figure 21 shows the world's GDP in current prices in U.S. Dollars, and it is seen that it grew steadily across the analyzed period of 2013-2022, with minor exceptions in 2015 and 2020, and is foreseen to keep increasing in the next five years, reaching 131.6 quadrillion U.S. Dollars in 2027, which is almost the doubled value of GDP in current prices of the year 2013.

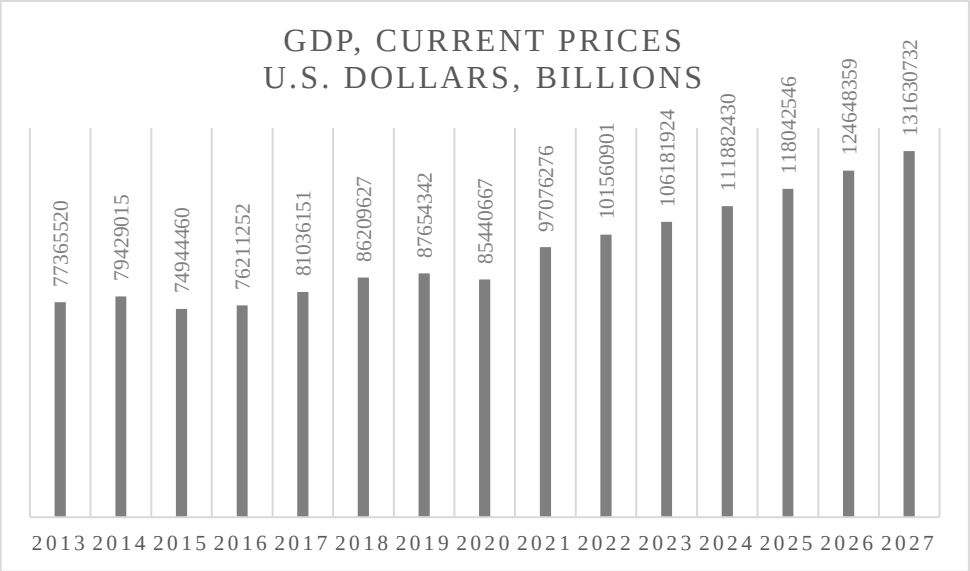


Figure 21. World's GDP in current prices in U.S. Dollars (in billions), 2013-2027 (*Source*: Own elaboration based on IMF, 2022)

The inflation rates that are so heavily affecting the consumer's purchasing power in the present times, with the peaking values in 2022, and decreased yet still huge numbers in 2023, are presented in figure 22. The uncorrelated trends of inflation rates in the emerging and developing, and advanced economies in 2013-2020, with the inflation rate being more or less stable at the rate range of 4.5-5% for the first group, and with fluctuation of inflation yet rates not exceeding 2% for the second are observed from the figure 22.

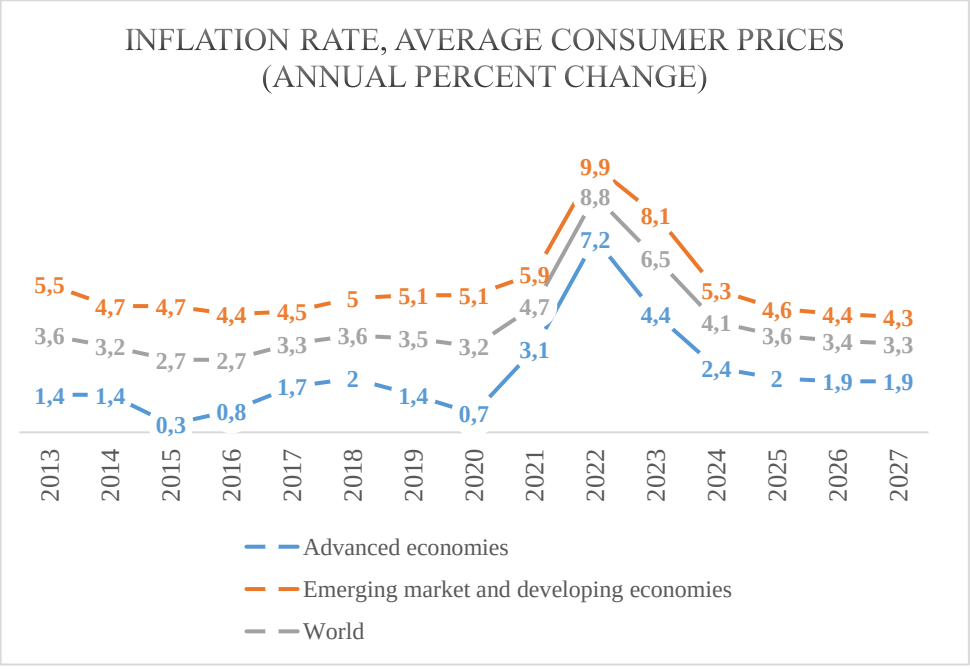


Figure 22. The inflation rate, average consumer prices (annual percent change), 2013-2027 (*Source*: Own elaboration based on IMF, 2022)

The pandemic led to the inflation rates increase, and the full-scale russian invasion of the independent state of Ukraine in 2022, causing energy and commodities shortages, has skyrocketed the inflation rates, affecting everyone and everywhere. In 2023 the inflation rates are expected to remain high, with the world inflation rate of 6.5%, followed by a decrease to 4.1% in 2024 and a further decline in the upcoming years. In 2025 the inflation rate in the emerging and developing economies is forecasted to return back to 4.6% with a downward trend in the following years and in the advanced economies to lower to 2%.

To tackle the rising inflation, the Central Banks of the leading economies – the Federal Reserve in the U.S. (Fed) and the European Central Bank (ECB) kept increasing the interest rates from the mid-end of 2022 till now, approaching the rates set during the global financial crisis, which slow down the economies yet the required steps to take. As of February 2023, the Fed set the interest rate at 4.75%, and the ECB increased the rate to 3%, that are the highest rates in the last 15 years (Central Banks interest rates, 2023). The increased cost of borrowing affects investment and spending decisions, decreases the affordability of financial products (loans and credits), and limits the output the economy can potentially achieve.

Under the given circumstances, the current period is not the booming one. However, recovery is on the way. The growth projections developed by the IMF in January 2023 (figure 23) indicate that the global economy will achieve the level of real GDP growth of 3.1% in 2024, an improvement from the expected 2.9% in 2023. A huge decline in the real GDP growth is projected for the advanced economies in the current and following years: a drop from 2.7% to 1.2% and a slight improvement to 1.4% in 2022, 2023, and 2024 respectively.

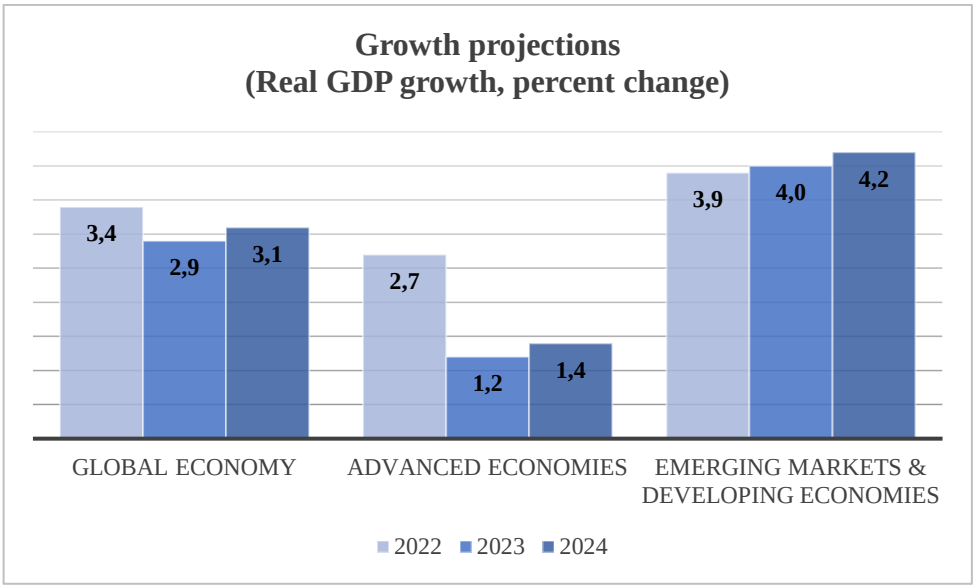


Figure 23. Growth projections, percent change, 2022-2024 (*Source*: IMF, 2023)

The IMF World Economic Outlook (January 2023) includes the growth projections of the regions (figure 24), and notable that the U.S. economy will suffer a growth slowdown: in 2022, its growth rate was at 2% and is expected to fall to 1.4% and to 1% in 2023 and 2024 respectively. The real GDP growth rate in the Euro area will fall drastically – from 3.5% in 2022 to 0.7% in 2023, proceeding with the increase to 1.6% in 2024.

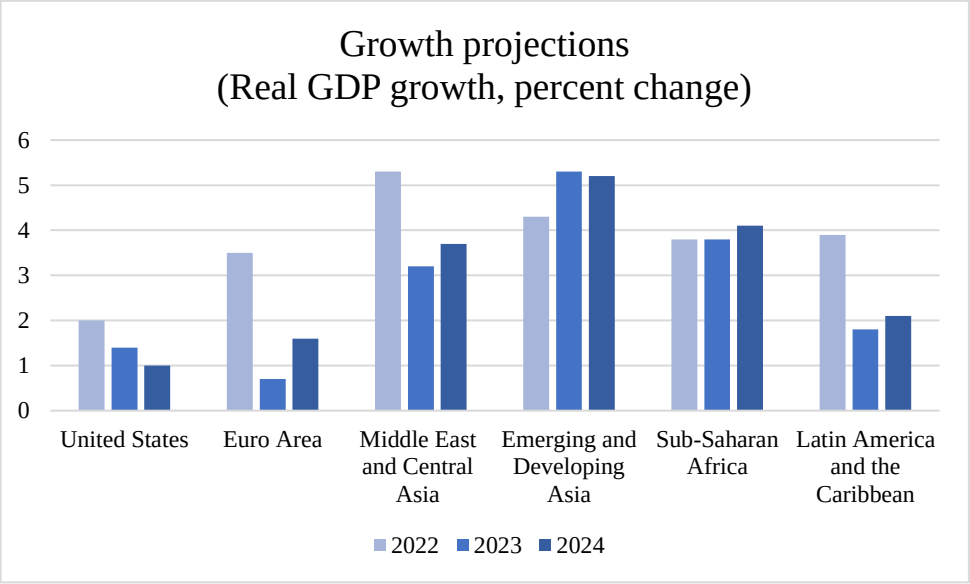


Figure 24. Growth projections by regions, percent change, 2022-2024 (*Source*: IMF, 2023)

The emerging markets and developing economies will be able to keep the real GDP growth rate steadily increasing by virtue of the growth of Sub-Saharan Africa and emerging and developing Asia regions. The real GDP growth rate in the Middle East and Central Asia, and

Latin America and the Caribbean regions will fall almost 1.5 and 2 times, respectively, from 2022 to 2024.

Account ownership (figure 25) is unequally distributed throughout the world, with African, South American, South East Asian, Central Asian, and Middle East regions, except for a few countries in each region, being left behind.

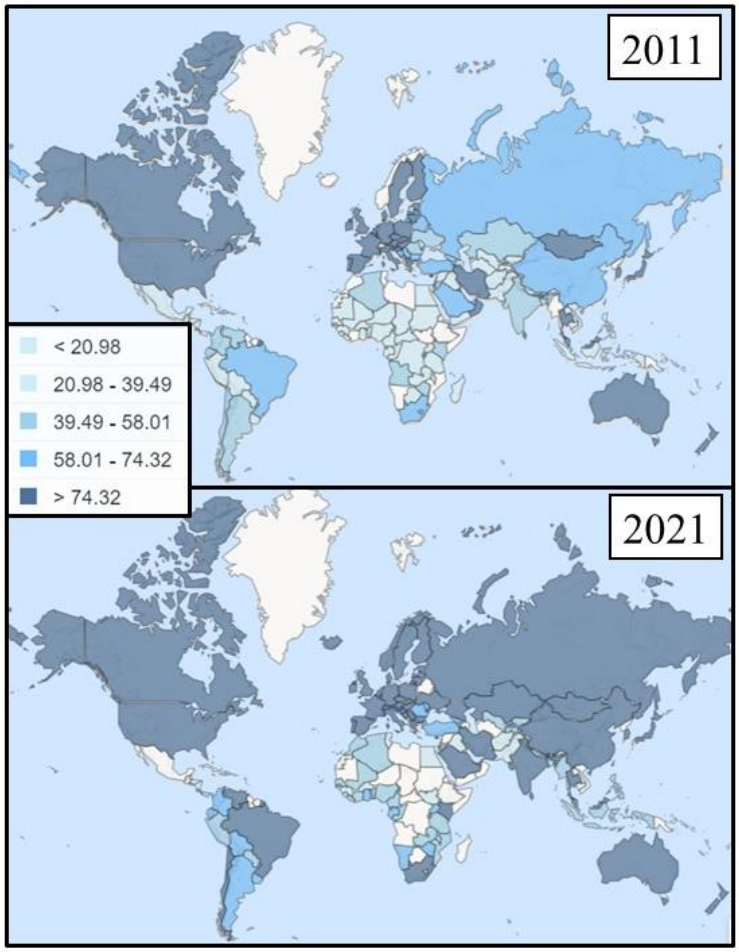


Figure 25. Account ownership at a financial institution or with a mobile-money-service provider (% of population ages 15+) (*Source*: World Bank, 2023)

As of 2021, account ownership banks or other regulated institutions, including credit unions, microfinance institutions, or mobile money service providers, had the mark of 76% of adults worldwide and 71% of adults in developing countries and territories (Demirgüç-Kunt et al., 2022).

Although in ten year-period from 2011-2021, a fifty-percent improvement in the share of the population that owns an account at a financial institution or with a mobile-money-service provider (from 51% to 76% of adults respectively) is observed, and the change has not taken

place everywhere in the world. Citizens of many emerging economies are still lacking access to financial institutions (Demirgüç-Kunt et al., 2022).

It is today, there is a rapid growth of account ownership worldwide, including in developing regions, as the average rate of account ownership increased from 63% to 71% of adults from 2017 to 2021. This rise is largely explained by the adoption of mobile money in the Sub-Saharan Africa region, where the share of adults who had a mobile money account equals 33% in 2021 (which is a part of 55% share of account ownership) and is the biggest share of any region in the world, exceeding the global average of mobile money account ownership at in the least three times. Mobile money has enabled Sub-Saharan African citizens to save, borrow and pay digitally and has become an important instrument of financial inclusion, with more women having accounts to manage their finances (Demirgüç-Kunt et al., 2022).

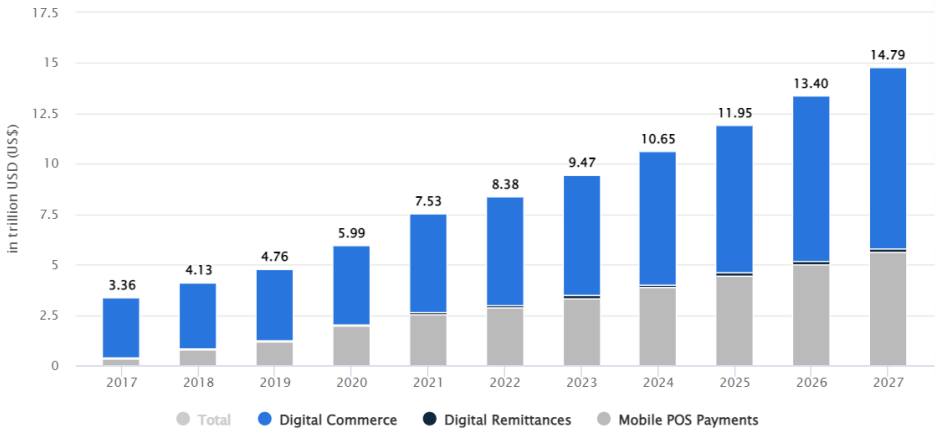
Across developing economies, the gender gap in account ownership has shrunk to 6 percentage points following a decrease of 3 percentage points(Demirgüç-Kunt et al., 2022).

The COVID-19 pandemic and social distancing restrictions catalyzed the adoption of digital payments. Numerous people worldwide faced the need to pay bills or pay for purchases online for the first time in 2021. The share of digital payments during the pandemic restrictions varies from region to region; however, the acceleration of growth of digital payments has set the flow of how people pay and manage money and profoundly shaped the industry (Demirgüç-Kunt et al., 2022).

3.3 Industry Analysis

The author will study the industry of credit services by analyzing the current trends in digital payments, looking at the global payments revenue change over the years, identifying the competitors of the analyzed company – Visa Inc., and their financial performance standings, comparing the valuation measure such as Price-to-Earnings (P/E) ratio and market capitalization, analyzing debt, profitability and current ratios of the peer companies in the industry.

The total volume of digital payments is on the rise (figure 26). In the six-year period, from 2017 to 2022, the total transaction value of digital payments increased 2.5 times, from 3.36 to 8.38 trillion U.S. dollars. The growth is expected to continue and almost double in value from 2022 to 2027.



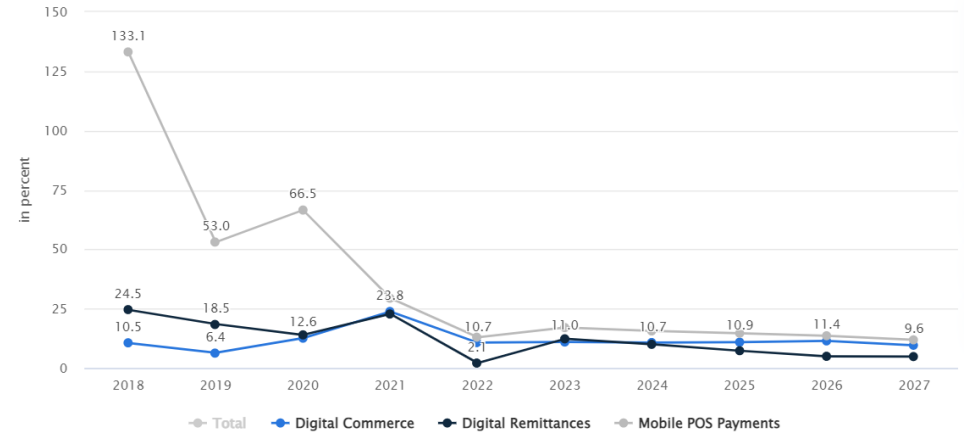
Notes: Data shown is using current exchange rates and reflects market impacts of the Russia-Ukraine war.

Most recent update: Feb 2023

Figure 26. The transaction value of digital payments worldwide (in trillions of U.S. dollars), 2017-2027 (*Source*: Digital payments - worldwide: Statista market forecast, 2023)

Digital commerce remains the most significant part of the digital payments structure; however, there is a dramatic increase in Mobile Point of Sale (POS) Payments, from 0.5 in 2017 to 2.5 trillion U.S. dollars in 2021, and they are expected to double in another five years, reaching 5 trillion U.S. dollars in 2026. Digital remittances represent only a diminutive part of the total volume.

The transaction value changes by segments worldwide (figure 27) reveal the slowdown after the boom of the popularity of Mobile POS Payments and projected stability of all the segments of digital payments and the uniform growth level of digital commerce and Mobile POS Payments at the levels around 10-11% annually. Digital Remittances are not expected to increase in volume and even slow down the pace in the upcoming years.

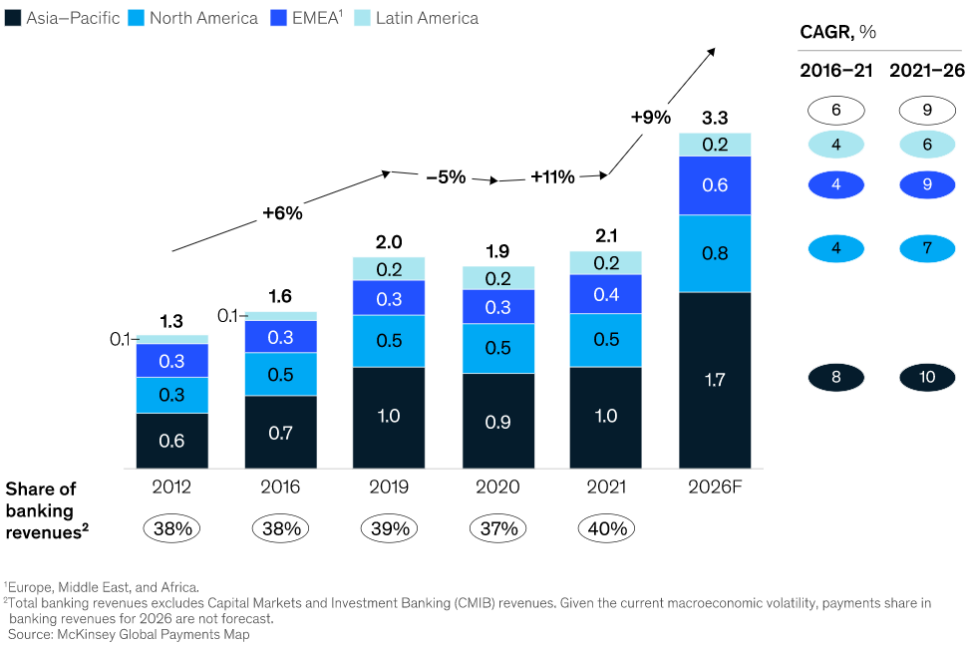


Notes: Data shown is using current exchange rates and reflects market impacts of the Russia-Ukraine war.

Most recent update: Feb 2023

Figure 27. The change in transaction values of digital payments worldwide (in percentage), 2018-2027 (*Source*: Digital payments - worldwide: Statista market forecast, 2023)

The global payments revenues are increasing in volume across all the regions, with the prevailing share of the Asia-Pacific region (figure 28). The annual growth of 6% between 2014 and 2019 is followed by a decline of 5% in 2020, yet recovered with an eleven-percent increase in global payments revenues in 2021, and it is expected to rise annually by 9% till 2026. The compound annual growth rate (CAGR) shows that the growth rate is accelerating for all the regions: in 2016-2021, the CAGR is lower than CAGR for the projected period 2021-2026.



[1]Europe, Middle East, and Africa.
[2]Total banking revenues excludes Capital Markets and Investment Banking (CMIB) revenues. Given the current macroeconomic volatility, payments share in banking revenues for 2026 are not forecast.
Source: McKinsey Global Payments Map

Figure 28. Global payments revenues (in trillions of U.S. dollars), 2016-2026 (*Source*: Bansal et al., 2022)

The share of the Asia-Pacific region constitutes half of the global payments revenues and is twice as big as the North America region, which is followed by the Europe, Middle East, and Africa (EMEA) region in the share size in each of the analyzed years. The projection for the year 2026 gives evidence that not only the volume of global payments revenues will exceed 3 trillion U.S. dollars, but the Asia-Pacific region will increase by 70%, the North America region by 60%, the EMEA region by 50%, and the Latin America region will remain unchanged from 2019.

The share of banking revenues remained more or less stable throughout 2012-2021, at the level of 37-40%, reaching its highest value in 2021.

A closer look at the structure of global payments revenues in 2021 (figure 29) gives an understanding of how the revenues are distributed across the services in different regions.

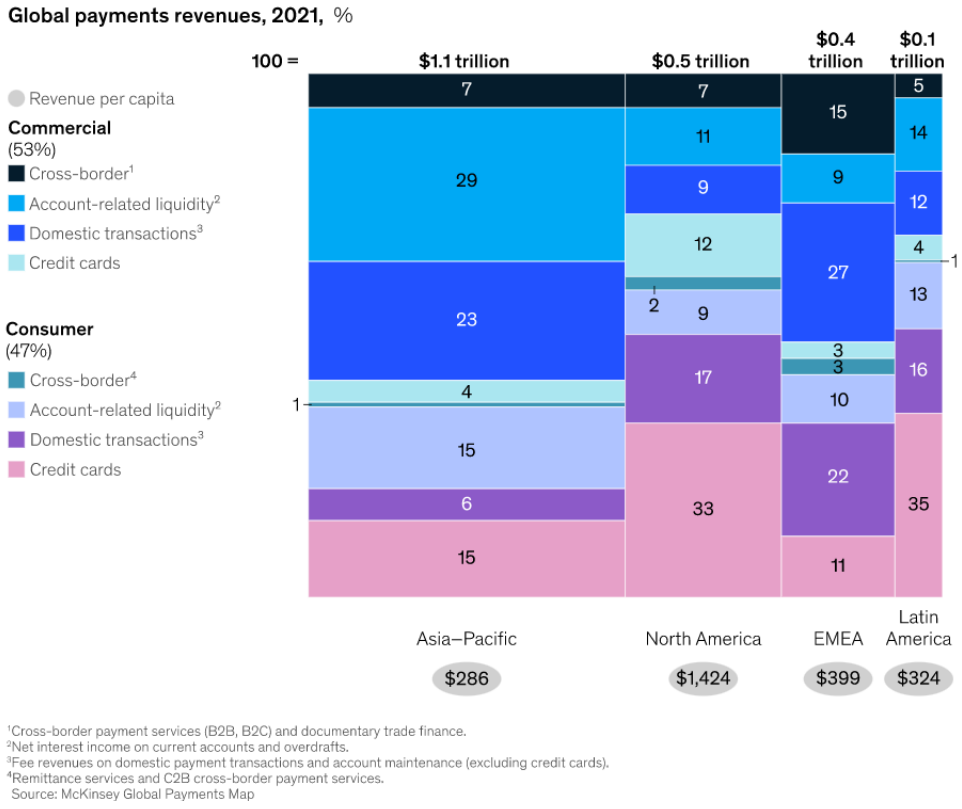


Figure 29. Global payments revenues (in percentage), 2021 (*Source*: Bansal et al., 2022)

For the Asia-Pacific and EMEA regions, commercial services predominate, whereas for the North and Latin Americas, payments revenues from consumer services are more significant. The revenues from commercial account-related liquidity and domestic transaction services in Asia-Pacific account for more than 50% of the total revenues. In the EMEA region, the largest sources of revenues are commercial and consumer domestic transactions, making

together a share of 49% of the total revenues. In North and Latin Americas, the revenues from consumer credit cards comprise one-third of the total payments revenues, followed by consumer domestic transactions.

The McKinsey research suggests that the revenue growth in the period 2021-2026 will be dominated by credit cards in North and Latin Americas and by account-related revenues in Asia-Pacific and EMEA (figure 30).

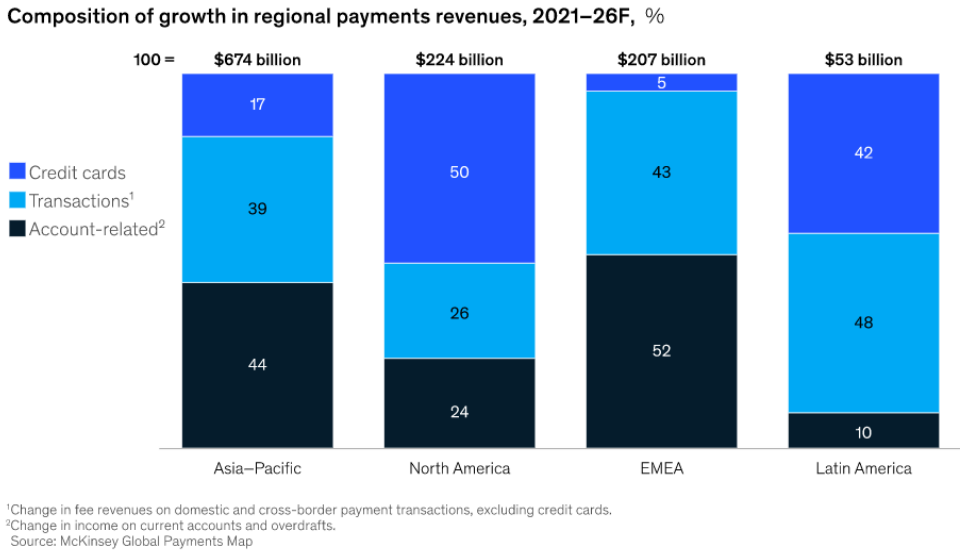


Figure 30. Composition of growth in regional payments revenues (in percentage), 2021-2026 (*Source*: Bansal et al., 2022)

The year 2020 brought not only an overall decline in payment revenues but the shifts in the structure of the payments. Cash payments fell by 16% worldwide in 2020, and that decline in cash usage and the move to e-commerce has raised the need for instant payment solutions available worldwide and was a tremendous opportunity for the credit service industry to step in and advance (Bansal et al., 2022). Fast, safe, and convenient digital payments and digital wallets have never been such a need everywhere in the world as during the pandemic time. The future of financial services has already been shaped.

Visa sees its competitors in the pursuit of consumers and strengthening the network with merchants and financial institutions and in the following companies: Mastercard, American Express, Diners Club/Discover, JCB, and UnionPay (Visa, 2022). With some of these competitors being concentrated in particular geographic regions: Discover in the USA and JCB in Japan, or have a leading position in certain countries: UnionPay in China, Visa remains one of the vastest retail electronic funds transfer networks run worldwide (Visa, 2022). In certain countries, there are obligations and restrictions on the international payment

systems imposed by the governments that prevent Visa from competing in those markets, which include India and China.

To compare the significance of the influence of competition on the industry, the author looks at the selected key performance indicators (KPIs) of Visa and its peers, achieved in 2021 (figure 31).

	Visa	Mastercard	American Express	JCB	Diners Club
Payments Volume ($B)	10,894	5,975	1,274	325	207
Total Volume ($B)	13,508	7,723	1,284	335	219
Total Transactions (B)	244	140	9	5	3
Cards (M)	3,936	2,579	122	144	66

Figure 31. Comparison of KPIs of Visa with its competitors, 2021 (*Source*: Visa, 2022)

In payments volume, in total volume, in the total number of transactions and cards, Visa outstands its competitors, with Mastercard being the closest, yet all its analyzed selected KPIs are nearly 1.75 times less.

The key statistics of Visa and its competitors as of the fiscal year 2022 (table 3) give insight into the comparability of the players in the credit service industry.

Table 3. Key statistics of Visa and its competitors, the fiscal year 2022

	Visa	Mastercard	American Express	JCB	Diners Club/Discover
Market Cap (interday) ($B)	476.58	349.77	133.26	N/A	29.85
Enterprise Value ($B)	480.95	356.39	N/A	N/A	N/A
Revenue ($B)	30.19	22.24	50.68	N/A	10.98
EBITDA ($B)	21.16	13.37	N/A	N/A	N/A
Total Cash ($B)	16.12	7.41	33.62	N/A	8.86
Total debt ($B)	20.49	14.79	45.23	N/A	20.11
Total Debt/Equity	55.48	231.97	183.02	N/A	137.82
Current Ratio	1.44	1.17	1.51	N/A	1.14

Source: Yahoo! Finance, 2023

Visa Inc., in terms of market capitalization and enterprise value, is absolutely dominating over its peers. However, Mastercard shall not be underestimated, as it is a large company with a high potential to grow, despite the fact that Visa is in a pole position in terms of revenues, EBITDA, and liquidity and debt ratios in comparison to its peers, including Mastercard. As for the revenue stream, American Express shows outstanding results, with the value being almost the sum of the revenues of Visa and Mastercard together. Its current

ratio is the highest in the industry, outperforming Visa's. The debt-to-equity ratio of Visa Inc. is the lowest in the industry, raising assumptions of its reasons: the large denominator (equity value) or the small nominator (low leverage).

Table 4 contains the P/E and profitability ratios of Visa and its competitors in the fiscal year 2022. Mastercard has the highest both trailing and forward P/E ratios among its peers, leaving Visa in second place. Notably, only for Diners Club/Discover, the forward P/E is projected to be higher than trailing, whereas all the other companies in the industry are expected to have lower values in the future.

The profit and operating margins of American Express are extremely low as to its competitors. Indeed, Visa has the highest values of profitability ratios, leaving American Express and Diners Club/Discover behind. However, Mastercard outperforms Visa in terms of ROA and ROE ratios, with an extremely high return on equity ratio. The debt-to-equity ratio of Mastercard was also above the average of the industry, which may be the result of a small denominator (equity value) in the calculations.

Table 4. Valuation measures and profitability ratios of Visa and its competitors, the fiscal year 2022

	Visa	Mastercard	American Express	JCB	Diners Club/Discover
Trailing P/E	31.67	35.90	18.18	N/A	7.35
Forward P/E	26.81	30.03	16.05	N/A	8.17
Profit Margin	50.28 %	44.65 %	14.83 %	N/A	40.01 %
Operating Margin	67.14 %	56.77 %	19.81 %	N/A	53.66 %
ROA	15.14 %	20.66 %	3.60 %	N/A	3.63 %
ROE	41.51 %	144.03 %	32.05 %	N/A	31.37 %

Source: Yahoo! Finance, 2023

ROE and ROA affect the growth rate: the higher this ratio, the more extensive growth a company could achieve. Visa and Mastercard are leading the industry.

3.4 Situational Analysis

The author will carry out the situational analysis of Visa Inc., beginning with the identification of its main markets, revenue drivers, and revenue structure using the historical financial data available, then the author will present the SWOT (strengths, weaknesses, opportunities, threats), PESTLE (political, economic, social, technological, legal and environmental factors) and Porter's Five Forces Analyses.

Visa operates in more than 200 countries and territories, although its revenue stream is divided into two markets: the U.S. and international (figure 32, figure 33).

	U.S.			International			Visa Inc.		
	Twelve Months Ended June 30,[1]			Twelve Months Ended June 30,[1]			Twelve Months Ended June 30,[1]		
	2022	2021	% Change[2]	2022	2021	% Change[2]	2022	2021	% Change[2]
	(in billions, except percentages)								
Nominal payments volume									
Consumer credit	**$ 2,047**	$ 1,641	25 %	**$ 2,684**	$ 2,398	12 %	**$ 4,732**	$ 4,039	17 %
Consumer debit[3]	**2,617**	2,388	10 %	**2,692**	2,440	10 %	**5,309**	4,828	10 %
Commercial[4]	**882**	696	27 %	**542**	407	33 %	**1,423**	1,104	29 %
Total nominal payments volume[2]	**$ 5,546**	$ 4,725	17 %	**$ 5,918**	$ 5,245	13 %	**$ 11,464**	$ 9,971	15 %
Cash volume[5]	**631**	635	(1 %)	**1,931**	1,924	— %	**2,562**	2,559	— %
Total nominal volume[2],[6]	**$ 6,177**	$ 5,360	15 %	**$ 7,849**	$ 7,170	9 %	**$ 14,025**	$ 12,530	12 %

Figure 32. Nominal payments and cash volume of Visa (in billions of U.S. dollars, except percentages), 2021-2022 (*Source*: Visa, 2022)

The volume of payments is the total dollar amount of transactions carried out using Visa-branded cards or form factors, and the nominal payments volume is denominated in U.S. dollars and is obtained as a result of the quarterly conversion of U.S. dollar/foreign currency exchange rate for each currency in which the payment was made (Visa, 2022).

	U.S.			International			Visa Inc.		
	Twelve Months Ended June 30,[1]			Twelve Months Ended June 30,[1]			Twelve Months Ended June 30,[1]		
	2021	2020	% Change[2]	2021	2020	% Change[2]	2021	2020	% Change[2]
	(in billions, except percentages)								
Nominal payments volume									
Consumer credit	$ 1,641	$ 1,518	8 %	$ 2,398	$ 2,363	1 %	$ 4,039	$ 3,880	4 %
Consumer debit[3]	2,388	1,849	29 %	2,440	1,976	24 %	4,828	3,824	26 %
Commercial[4]	696	641	9 %	407	370	10 %	1,104	1,010	9 %
Total nominal payments volume[2]	$ 4,725	$ 4,007	18 %	$ 5,245	$ 4,708	11 %	$ 9,971	$ 8,715	14 %
Cash volume[5]	635	573	11 %	1,924	2,046	(6 %)	2,559	2,619	(2 %)
Total nominal volume[2],[6]	$ 5,360	$ 4,580	17 %	$ 7,170	$ 6,753	6 %	$ 12,530	$ 11,334	11 %

Figure 33. Nominal payments and cash volume of Visa (in billions U.S. dollars, except percentages), 2020-2021 (*Source*: Visa, 2022)

As of 2022, the single U.S. market represented 48% of the total nominal payments volume and 44% of the total nominal volume of Visa Inc., showing steady growth: the corresponding shares in 2021 were 47% and 43%, respectively, and 46% and 40% in 2020. Cash volume internationally outperforms the U.S. market at least three times for the last three analyzed years. All presented indicators, except the cash volume, have shown an increase from 2020 to 2022.

The U.S. market remains a very important source of revenue for the company, and it has been rising faster than the international market in three consecutive years.

A closer look at Visa's net revenues structure by region (figure 34) provides evidence that its share of the U.S. market in net revenues in 2022 decreased to 44% of net revenues from a share of 46% in 2021 and 2020. The net revenues in the international market grew faster from 2021 to 2022 than in the U.S. market.

	For the Years Ended September 30,			% Change[1]	
	2022	2021	2020	2022 vs. 2021	2021 vs. 2020
	(in millions, except percentages)				
U.S.	**$ 12,851**	$ 11,160	$ 10,125	15 %	10 %
International	**16,459**	12,945	11,721	27 %	10 %
Net revenues	**$ 29,310**	$ 24,105	$ 21,846	22 %	10 %

Figure 34. Visa's net revenues structure by region (in million U.S. dollars, except percentages), 2020-2022 (*Source*: Visa, 2022)

The analysis of the revenue drivers of Visa (figure 35) shows that Visa's revenue is generally determined by two: the number and volume of payment transactions consumers, businesses, and governments make. Data processing revenues rely on the number of processed transactions, and service revenues depend on the payment volume.

	For the Years Ended September 30,			% Change[1]	
	2022	2021	2020	2022 vs. 2021	2021 vs. 2020
	(in millions, except percentages)				
Service revenues	**$ 13,361**	$ 11,475	$ 9,804	16 %	17 %
Data processing revenues	**14,438**	12,792	10,975	13 %	17 %
International transaction revenues	**9,815**	6,530	6,299	50 %	4 %
Other revenues	**1,991**	1,675	1,432	19 %	17 %
Client incentives	**(10,295)**	(8,367)	(6,664)	23 %	26 %
Net revenues	**$ 29,310**	$ 24,105	$ 21,846	22 %	10 %

Figure 35. Visa's components of revenues (in million U.S. dollars, except percentages), 2020-2022 (*Source*: Visa, 2022)

International transaction revenues have risen by 50% from 2021 to 2022 and represented a significant share of net revenues. The data processing revenues, the service revenues, and the international transactions revenues are the three main sources of net revenues. The net revenues have accelerated its growth: 22% change from 2021 to 2022 over 10% change from 2020 to 2021.

The growth of net revenues could be largely explained not only by the growth in nominal payments volume or in processed transactions but also by currency exchange rate fluctuations and volatility. The last reason – the overall macroeconomic instability, the war in Ukraine, and economic sanctions imposed on russia and the suspension of operations there, explains the increase in the international transactions revenues in 2022.

To get the whole picture of Visa Inc., the author carried out a SWOT analysis of Visa Inc. (table 5).

Table 5. SWOT analysis of Visa Inc.

Strengths	Weaknesses	Opportunities	Threats
1. Strong brand image; 2. Technology leadership; 3. Worldwide presence and wide acceptance; 4. Business model.	1. Heavy dependence on financial institutions and merchant clients; 2. Revenue dependence on IRF fee; 3. Limited market presence in emerging markets.	1. Adoption of new digital payments technology; 2. Up-to-date mobile payments solutions; 3. Expansion into new markets.	1. Tough competition; 2. Governmental regulation on payments; 3. Disruptive technologies; 4. Economic fluctuations.

Source: Own elaboration

The global leadership in financial technologies, strong brand, worldwide presence, and the nature of its business model are superior strengths of Visa, whereas the heavy dependence on suppliers, which are represented by financial institutions and merchants, and the interchange reimbursement fee that is imposed could be considered as a vulnerable aspect of Visa's success. Also, the limited presence in emerging markets is both a weakness and an opportunity to grasp. Employing new innovative technologies or taking advantage of the present-day ones could open tremendous opportunities for Visa. The threats presented the risk of governmental regulation and intervention in the sector, increasing competition, technological outbursts, and the macroeconomic environment.

As a financial technology company, Visa is highly dependent on political, economic, social, technological, and legal factors. The PESTLE analysis (table 6) will clarify the company's position and identify the inherent risks.

Table 6. PESTLE analysis of Visa Inc.

Political	– Visa's operations are governed by complex and tightening regulations; – Government-imposed restrictions may prevent Visa from operating in certain countries/markets; – Sanctions imposed on certain countries prevent Visa from operating in those regions (e.g., russia 2022).
Economic	– Visa's revenue is largely based on transaction volume and number, so economic conditions, especially recession, with its rising interest rates and unemployment, and fluctuations in consumer spending directly affect its financial performance; – Exchange rate fluctuation impacts the company's financial performance as more than half of its revenues come from international markets.
Social	✓ The rise of e-commerce and online payments has benefited Visa; ✓ Change in consumer behavior and paying preference, e.g., a shift towards cashless payment methods, has pushed Visa's revenues; ✓ Demographics and cultural trends can also affect the company's target market and marketing strategies.
Technological	– Visa is forced to invest greatly in technologies to improve its products and services to remain competitive; – Unforeseen technological advancements may disrupt Visa's business model; – Cybersecurity threats pose a risk to the company's operations and reputation.
Legal	– Visa is subject to various legal and regulatory frameworks, such as antitrust laws and privacy regulations; – Changes in consumer protection laws or data privacy laws can impact how the company collects, processes, and stores customer information and result in surging costs, legal claims, or fines; – Visa may be subject to changes in tax laws as well as tax examinations.
Environmental	✓ Visa is using renewable energy sources and implementing sustainable business practices.

Source: Own elaboration

Political, economic, and legal factors heavily influence the company's performance. Most of them may negatively impact the company; however, there is nothing Visa can do about it – the financial services sector has its perks and setbacks. The social factor is very important, as Visa's profit depends on customers who make payments, and the behavioral patterns are rather favorable for Visa at the present time. The technological factor could be tricky, as it enables Visa to succeed and lead the industry with its vast and complex network –VisaNet; however, at the same time, it requires huge investments to stay competitive, secure and trusted. As for environmental factors, as of 2022, Visa uses renewable energy sources and is committed to environmental, social, and corporate governance.

The author completes the situational analysis of Visa with Porter's Five Force Analysis, which explains the connection between the structure of an industry, the company's competitive strategy, and the profitability of its business (Bodie, Kane and Marcus, 2022). The significance of Porter's five forces is assessed in the range of 1 to 5, where 5 is the maximum score. A detailed explanation of the force's influence on the company and allocated scores is presented in figure 36.

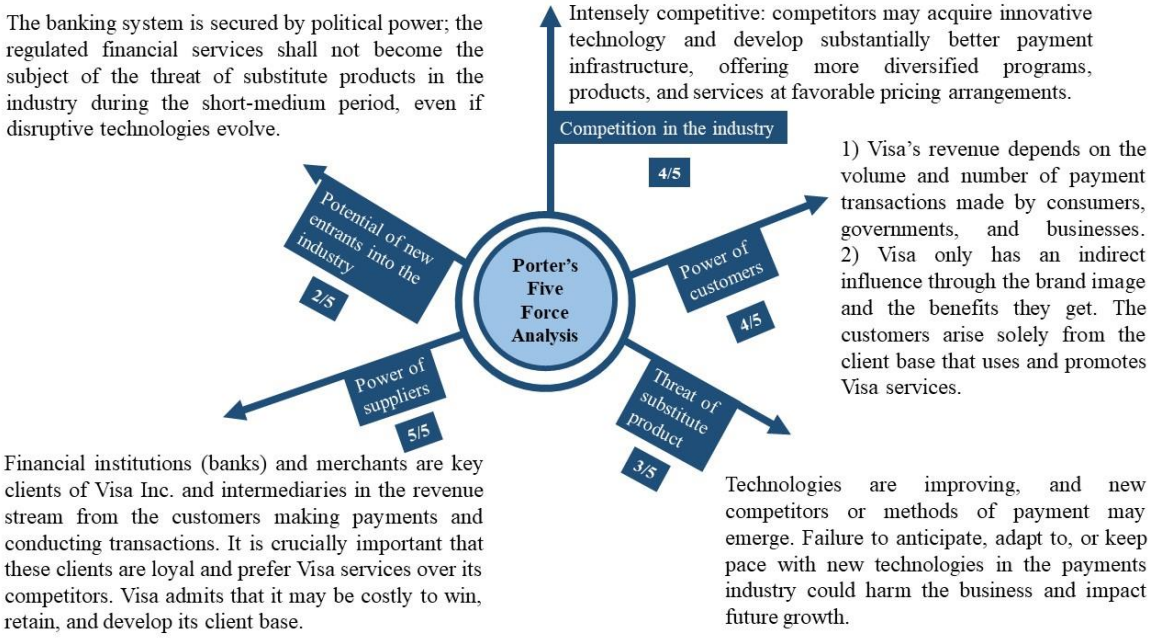


Figure 36. Porter's Five Force Analysis (*Source*: Own elaboration)

The power of suppliers is assessed to be the most influential force in Visa's financial success. The second and third strong forces are the competition in the industry and the power of customers. The threat of substitute products and the potential of new entrants into the industry the author considers to be fewer powerful forces in the way the company is exposed to the effect in the present time.

3.5 Financial Analysis

The author will perform horizontal and vertical analyses of the financial statements of the company to become aware of its past and present position and capable of forecasting the balance sheet and income statement items for the future period.

3.5.1 Financial statements analysis

The horizontal and vertical analyses of the balance sheet for the period 2018-2022 (APPENDIX P I-II) showed that current assets grew by 66% in a five-year period, largely

accounting for a 92% increase in cash and cash equivalents in that period. Cash and cash equivalents had a share of 18% of total assets in 2022. The share of current assets in total assets increased from 28% to 35% in five years from 2018-2022 and remained stable at the level of 35% from 2020-2022. The intangible assets and goodwill are the two largest items in total assets, accounting for 30% and 21% of all total assets in 2022. Notably, the share of intangible assets has shrunk from 40% to 30% of all total assets from 2018 to 2022, while the goodwill remained steady at the level of 19-22% of all total assets for the five analyzed years. Current liabilities grew by 84% from 2018 to 2022, with a 32% increase in current liabilities from 2021-2022. Client incentives and accrued liabilities grew the most in a five-year period, with an increase of 115% and 221%, respectively. Total liabilities rose by 41% from 2018 to 2022. The long-term debt increased in 2020 by 26%, yet remained the uniform share of 23-26% of total liabilities and equity throughout 2018-2022. The share of the total equity in total liabilities and equity steadily decreased from 49% to 42% since 2018, whereas the share of current liabilities increased by 7%, reaching the maximum share of 24% in total liabilities and equity in 2022. The pace of the absolute growth of current liabilities also reached its height in 2022, showing a 33% increase over 2021-2022.

As for the equity side, the company adopted a policy to convert its preferred stock into common stock (Investor Visa, 2022). The tendency to decrease the number of preferred stocks and increase common stock can be seen in the balance sheet from 2020.

Total assets, which are equal to total liabilities and equity, increased by 23.5% over 2018-2022, with the largest increase in 2020, when they grew by 11.5%. Over the last few analyzed years, that growth slowed down, showing 2.4% and 3.2% in 2021 and 2022, respectively.

The horizontal and vertical analyses of the income statement for the period 2018-2022 (APPENDIX P III-IV) demonstrate that net revenues were resistant to the economic slowdown in 2020, showing a 5% decline in that year, which was then followed by a 10% and 22% increase in net revenues in 2021 and 2022 respectively. Over five analyzed years, the net revenues grew by 42%, meaning that the COVID-19 pandemic and the macroeconomic environment have not greatly affected the business. Visa kept a stable share of operating expenses of 35-36% in 2018-2022, which resulted in operating income having a steady share of 64-65%. The net income accounts for 50-51% of net revenues throughout the analyzed period 2018-2022, with a maximum value of 53% in 2019. An absolute increase of 45% in net income will be achieved from 2018 to 2022. Particularly, a 10% drop in net

income in 2020 was leveled out with a 13% increase in 2021, which brought the absolute value of net income to pre-pandemic time, and another rise of 21.5% was observed in 2022.

The company demonstrated a solid financial performance in the analyzed period of 2018-2022 with a strong ability to resist economic downturns.

3.5.2 Revenue prediction for the period 2023-2027

The revenue for the period 2023-2027 was predicted based on the linear regression analysis, with the world's GDP being the dependent variable. For this regression analysis, historical data on Visa's net revenues and the world's GDP for the last ten years (2013-2022) were used (table 7).

Table 7. Ten-year historical data of the company's net revenues and the world's GDP in current prices, in millions of U.S. Dollars

Year	Net Revenues	GDP, current prices
2013	11778	77365520000
2014	12702	79429015000
2015	13880	74944460000
2016	15082	76211252000
2017	18358	81036151000
2018	20609	86209627000
2019	22977	87654342000
2020	21846	85440667000
2021	24105	97076276000
2022	29310	1,01561E+11

Source: Visa Inc. Annual Reports and IMF, 2022

The linear regression enabled to explain of the GDP-revenue relation with the following formula:

$$\text{Net Revenues}_t = -31546{,}7114 + 5{,}97588 * 10^{-7} * \text{GDP}_t \qquad (30).$$

The quality of the model is described with the following regression statistics (table 8).

Table 8. Regression statistics

R Square (R^2)	0,868003288
Significance F	8,77883E-05
p-value for X-variable	8,77883E-05
p-value for Y-intercept	0,002005532
Observations	10

Source: linear regression analysis

R Square of 0.868 implies that 86,8% of the revenue is explained by the GDP, which makes the model of good quality and reliable.

Based on the world's GDP forecast by IMF (figure 21) and the regression analysis (formula 30), the revenues for 2023-2027 were estimated (table 9).

Table 9. Revenue prediction 2023-2027, in millions of U.S. Dollars (Forecast)

Year	Net Revenues	GDP, current prices
2023F	31906,33	1,06182E+11
2024F	35312,88	1,11882E+11
2025F	38994,09	1,18043E+11
2026F	42941,65	1,24648E+11
2027F	47114,23	1,31631E+11

Source: Own elaboration and IMF, 2022

3.6 Risk Analysis

Based on the company's annual report, new trends in digital payments, the previous stages of the conducted analysis, and the consultation of the Global Risks Report 2023, the author developed the risks matrix as follows (figure 37).

The possible risks that may affect Visa are distributed in the matrix with respect to the likelihood of occurrence and the severity of their impact on the company.

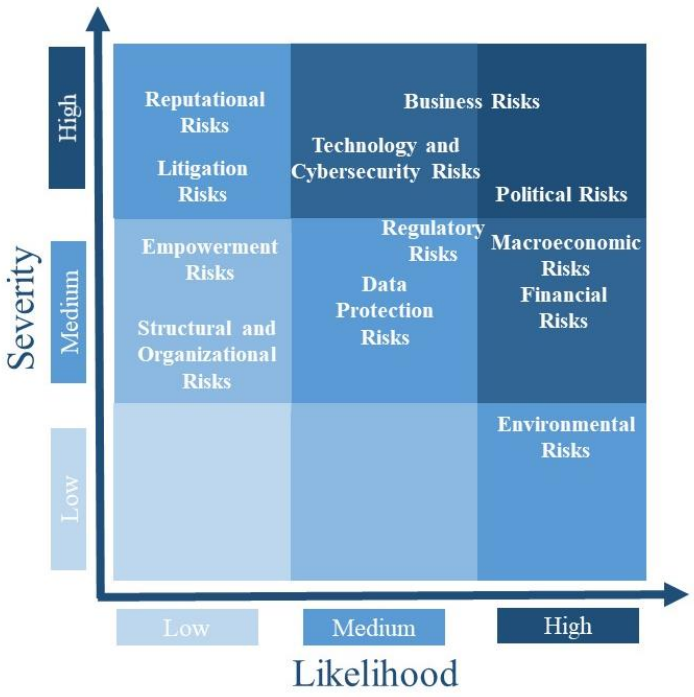


Figure 37. Risk matrix (*Source*: Own elaboration)

Structural and organizational risks, which include the setbacks of possible acquisitions, joint ventures, and strategic investments, inability to hire and retain a skilled workforce, and possible conflict of interests between the common and preferred stockholders, are considered to have a low probability of occurrence and medium impact on the company. The empowerment risks (leadership and management, performance incentives, change readiness, and communications) Visa may face also belong to the low likelihood/medium severity category of risks. Litigation and reputational risks could lead to highly adverse consequences for the company; however, they are improbable.

Data protection, regulatory, technology, and cybersecurity risks have a higher potential to occur and considerably harm the company. Business risks that are presented by the intense competition in the industry may lead to severe consequences for the company and have a medium-high likelihood of occurrence, even though Visa keeps an eye on the competitors and the development of technology, investing much of its resources in anticipation of new trends in the industry development.

Political risks have the highest probability of happening and will have a dramatic impact on the company, as governmental regulations and restrictions may unilaterally and indisputably limit and suspend the operations of the company in certain markets or in a certain established manner. Macroeconomic and financial risks are very likely to occur and bring harmful consequences for Visa, as its financial success relies on the overall economic and market conditions, consumer spending patterns, and financial stability.

Top-10 global risks in terms of severity in a 10-year time frame include six environmental-related risks that will bring devastating consequences for the economies and societies. Natural disasters and extreme weather have become a reality now, and failures to mitigate climate change and adopt sustainable business processes and operations will affect every human being and have irreversible consequences. The environmental risks are not posing a huge threat to Visa as of the nature of its business model, and it makes it less concerned about global sustainability, proving that what does not affect the revenue streams directly is not considered to be significant.

4 VALUATION

Based on the retrospective horizontal and vertical analyses of the company's financial statements and the preceding strategic analysis, the author develops the forecast of the balance sheet and the income statement for Visa Inc. for 2023-2027.

The author considers that macroeconomic trends of the rising number of account ownership worldwide (figure 25) and the change in consumer paying patterns (figure 26) will be advantageous for Visa and will enable it to grow and resume a 10% growth rate in its assets annually. Relying on the vertical analysis of the balance sheet statement in 2018-2022 (APPENDIX P II), the author suggests that a share of current assets in total assets for the forecasted period 2023-2027 will increase by 1.5 percentage points, following the pattern in the historical period. At the same time, the author assumes annual 30% growth of the value of property equipment and technology net as well as a 5% annual increase of cash and cash equivalents, while intangible assets net is assumed to face a decline of 5% annually (APPENDIX P V).

Following the pattern of the change of the shares of current liabilities in total liabilities and total liabilities in total equity and liabilities, the author considers the annual increase of these shares by 1.5 percentage points.

As the company operates in the financial service industry, its revenues depend on the number and volume of processed transactions. The change in the number and volume of transactions reflects the overall favorability of the economic environment and agrees with the advance of the world's GDP. The net revenue for the period of 2023-2027 was determined earlier by the linear regression analysis (table 9). Taking into consideration the robustness of Visa's financial performance and its response to the economic recession, showing a steady share of operating expenses in net revenues throughout 2018-2022 and implying the fact that 2022 was characterized by the highest inflation rates in the last ten years (figure 22) and the inflation is expected to decrease in the coming years, the forecast of the income statement items was made by setting a five-year average (2018-2022) rate of 35.5% of operating expenses in the net revenues. Accordingly, the operating income will represent 64.5% of net revenues (APPENDIX P VI).

4.1 DCF Valuation

To perform the discounted cash flow valuation, the input data described in the theoretical part is required. The enterprise value is a sum of the present value of the free cash flows to the firm (FCFF) discounted at the weighted average cost of capital (WACC) and the continuing value (formula 22).

To estimate the company's FCFF (formula 13), it is necessary to take the values of after-tax operating income (NOPAT), capital expenditures (CAPEX), depreciation and amortization (D&A) and change in non-cash working capital (NCWC). To calculate the discount rate (WACC) (formula 6), the capital structure, the cost of debt and equity financing, and the income tax rate are needed.

4.1.1 WACC calculation

It is recommended to use the market values of debt and equity for the cost structure estimation; however, due to the lack of information and, therefore, the inability to assess the market value of debt, the book value will be used. The enterprise value is obtained by summing up the market capitalization (stock prices multiplied by the number of outstanding shares) and total debt and subtracting cash and cash equivalents.

Visa's enterprise value equals to (Visa shares outstanding, 2023):

$$\mathrm{EV} = 234.02 * 1\,884\ \mathrm{M} + 22\,450\mathrm{M} - 15\,689\ \mathrm{M} = 447\,654.68\ \mathrm{M\ U.S.\ dollars}$$

(31).

The weight of debt is, therefore, $\frac{\mathrm{D}}{\mathrm{V}} = \frac{20200\ \mathrm{M}}{447\,654.68\ \mathrm{M}} = 0.045 = 4.5\%$; the weight of equity is $\frac{\mathrm{E}}{\mathrm{V}} = 95.5\%$.

The cost of debt equals interest expense divided by debt that, results in $\mathrm{k_d} = \frac{538\ \mathrm{M}}{20200\ \mathrm{M}} = 0.0266 = 2.66\%$.

The marginal tax rate $\mathrm{T_m} = \frac{\text{Income tax provision}}{\text{Income before income taxes}} = \frac{3179\ \mathrm{M}}{18136\ \mathrm{M}} = 0.1753 = 17.53\%$

The cost of equity will be calculated as discussed in the theoretical part using CAPM (formula 17), taking the risk-free rate as the average annual yield of a U.S. 10-year treasury bond (table 10), the systematic risk (beta) value from Yahoo! Finance and the expected market return based on the historical returns (Visa Inc. (NYSE: V): CAPM, 2022).

Table 10. U.S. 10-year treasury bond yield in 2022

Year	Average Yield	Year Open	Year High	Year Low	Year Close	Annual % Change
2022	2.95%	1.63%	4.25%	1.63%	3.88%	155.26%

Source: 10-Year Treasury Rate - 54-Year Historical Chart, 2022

The cost of equity is calculated as follows:

$$k_e = R_f + \beta \times (R_M - R_f) = 2.95 + 0.97(13.66 - 2.95) = 13.34\% \quad (32).$$

The weighted average cost of capital results in 12.87%:

$$WACC = \frac{D}{V}k_d(1 - T_m) + \frac{E}{V}k_e = 0.045 * 2.66\% * (1 - 0.1753) + 0.955 * 13.34\% = 12{,}87\% \quad (33).$$

4.1.2 FCFF calculation

The after-tax operating income is obtained by applying the income tax rate $T_m = 17.53\%$ to the earnings before income taxes (EBIT) for the forecasted period 2023-2027 (table 11).

Table 11. NOPAT in 2023-2027, in millions of U.S. dollars (forecast)

(in millions of USD)	**2023F**	**2024F**	**2025F**	**2026F**	**2027F**
EBIT	20328	22498	24843	27358	30017
NOPAT = EBIT*(1-T)	16764,5	18554,1	20488,02	22562,14	24755,02

Source: Author's estimates

Depreciation and amortization (D&A) expenses in the forecasted period reflect the annual change of property equipment and technology net (PE&T) and the percentage amount in PE&T (table 12).

Table 12. D&A in 2023-2027, in millions of U.S. dollars (forecast)

(in millions of USD)	**2023F**	**2024F**	**2025F**	**2026F**	**2027F**
Depreciation and amortization (D&A)	996	1103	1218	1341	1471

Source: Author's estimates

The capital expenditures are estimated as a sum of yearly changes in property equipment and technology net (PE&T) and depreciation at the given period (table 13).

Table 13. CAPEX in 2023-2027, in millions of U.S. dollars (forecast)

(in millions of USD)	**2023F**	**2024F**	**2025F**	**2026F**	**2027F**
CAPEX	1963	2360	2852	3465	4233

Source: Author's estimates

The non-cash working capital was calculated as the difference between current assets, net cash and liabilities, and the annual change of NCWC is presented in table 14.

Table 14. Change in NCWC in 2023-2027, in millions of U.S. dollars (forecast)

(in millions of USD)	2023F	2024F	2025F	2026F	2027F
Change in NCWC	209	211	273	344	423

Source: Author's estimates

The FCFF is obtained by summing NOPAT and D&A and then subtracting CAPEX and Change in NCWC (table 15).

Table 15. FCFF in 2023-2027, in millions of U.S. dollars (forecast)

(in millions of USD)	2023F	2024F	2025F	2026F	2027F
+ NOPAT = EBIT*(1-T)	16764,5	18554,1	20488,02	22562,14	24755,02
- CAPEX	1963	2360	2852	3465	4233
+ D&A	996	1103	1218	1341	1471
- Change in NCWC	209	211	273	344	423
= FCFF	**15588,5**	**17086,1**	**18581,02**	**20094,14**	**21570,02**

Source: Author's elaboration

The present values of expected FCFF are discounted by previously calculated WACC (33) and are given in table 16.

Table 16. Discounted FCFF in 2023-2027, in millions of U.S. dollars (forecast)

(in millions of USD)	2023F (t=1)	2024F (t=2)	2025F (t=3)	2026F (t=4)	2027F (t=5)
FCFF	15588,5	17086,1	18581,02	20094,14	21570,02
$\frac{1}{(1+WACC)^t}$, where WACC = 12.87%	0,885975	0,784952	0,695448	0,616149	0,545893
Discounted FCFF	**13810,14**	**13411,76**	**12922,82**	**12380,99**	**11774,92**

Source: Author's elaboration

To conclude DCF-valuation, it is necessary to estimate the continuing value (formula 21) in the terminal period.

NOPAT and RONIC in the terminal period as well as the growth rate, are required.

The growth rate should be consistent with the inflation rate in the long term yet not exceed the historical GDP growth rate. Based on the conducted strategic analysis, the author considers a 3% terminal growth rate for Visa Inc.

Net operating profit after tax in the terminal period (t=6) is determined by multiplying EBIT in 2027F by the growth rate in the terminal period and then subtracting the income tax, which results in $\mathrm{NOPAT}_6 = 25\,497{,}67$ M U. S. dollars.

RONIC is obtained as a result of the division of the growth in EBIT by the amount of net new investments, which results in $\mathrm{RONIC} = 47{,}29\%$.

The continuing value is equal to the following:

$$\text{Continuing Value} = \frac{\mathrm{NOPAT}_{t+1}\left(1-\frac{g}{\mathrm{RONIC}}\right)}{\mathrm{WACC}-g} = \frac{25497.67\ \left(1-\frac{0.03}{0{,}4729}\right)}{0.1287-0.03} = 241\,948.9\ \text{M US Dollars}$$

(34).

The company's value is a sum of discounted cash flows and the continuing value (formula 22) and equals to:

$$\text{Enterprise Value}_5 = \sum_{i=1}^{5} \frac{\mathrm{FCFF_i}}{(1+\mathrm{WACC})^i} + \frac{\mathrm{NOPAT}_6\left(1-\frac{g}{\mathrm{RONIC}}\right)}{\mathrm{WACC}-g} = 64\,300.6\ \mathrm{M} + 241\,948.9\ \mathrm{M} = 306\,249.5\ \mathrm{M\ U.S.\ dollars} \quad (35).$$

4.1.3 Adjusted capital structure and iterations

For the WACC calculation, the book and not the market value of debt was used due to the lack of information enabling the author to assess the market value of debt. However, the iterating process could resolve that problem. The adjusted capital structure is the result of performed iterations (table 17).

Table 17. Adjusted capital structure

	2022	**2023F**	**2024F**	**2025F**	**2026F**	**2027F**	**Perpetuity**
D/V	**0,0618244**	0,050633	0,055697	0,061266	0,067393	0,074133	0,081546
E/V	**0,9381756**	0,949367	0,944303	0,938734	0,932607	0,925867	0,918454
Cost of Debt	2,193702	2,193702	2,193702	2,193702	2,193702	2,193702	2,193702
Cost of Equity	13,34	13,34	13,34	13,34	13,34	13,34	13,34
WACC	**12,650886**	12,77563	12,71919	12,65711	12,58881	12,51369	12,43106

Source: Author's elaboration

Taking into account the adjusted value of the cost of capital at the rate of 12.65%, the enterprise value was recalculated as follows:

$$\text{Enterprise Value}_{\text{Adj}} = \sum_{i=1}^{5} \frac{\text{FCFF}_i}{(1+\text{WACC})^i} + \frac{\text{NOPAT}_6(1-\frac{g}{\text{RONIC}})}{\text{WACC}-g} = 64\,668.3\text{ M} + 247\,464.8\text{ M} = 312\,133.1\text{ M U.S. dollars} \quad (36).$$

4.2 Discounted Economic Profit Valuation

For the valuation using discounted economic profit method, first of all, it is necessary to estimate the economic profit, which is the difference between NOPAT and the product of the multiplication of the invested capital by the WACC (formula 24). The discount rate will be previously obtained WACC at the rate of 12.87% (33).

Invested capital is defined as a sum of net working capital (NWC), PE&T and goodwill, and intangibles and is estimated in table 18.

Table 18. Invested capital in 2023-2027, in millions of U.S. dollars (forecast)

(in millions of USD)	2023F	2024F	2025F	2026F	2027F
Total current assets	34799	39831	45521	51951	59211
Total current liabilities	24453	28450	33003	38181	44064
NWC	10346	11381	12518	13770	15147
Property equipment and technology net	4190	5447	7081	9205	11967
Goodwill	18810	20691	22760	25036	27540
Intangible assets net	23812	22621	21490	20416	19395
Invested Capital	**57158**	**60140**	**63849**	**68427**	**74049**

Source: Author's elaboration

Economic profit is calculated using previously estimated NOPAT (table 11) by subtracting the product of invested capital and the WACC rate from it (table 19).

Table 19. Economic profit in 2023-2027, in millions of U.S. dollars (forecast)

(in millions of USD)	2023F	2024F	2025F	2026F	2027F
NOPAT	16765	18554	20488	22562	24755
- Invested capital*WACC	7356	7740	8217	8807	9530
Economic profit	**9409**	**10814**	**12271**	**13755**	**15225**

Source: Author's elaboration

Discounting the expected economic profit at the WACC rate allows one to obtain the present values of the expected economic profit and, therefore, estimate the company's value (formula 27). Discounted economic profit is presented in table 20.

Table 20. Discounted economic profit in 2023-2027, in millions of U.S. dollars (forecast)

(in millions of USD)	**2023F (t=1)**	**2024F (t=2)**	**2025F (t=3)**	**2026F (t=4)**	**2027F (t=5)**
Economic Profit	9409	10814	12271	13755	15225
$\frac{1}{(1+\text{WACC})^t}$, where WACC = 12.87%	0,885975	0,784952	0,695448	0,616149	0,545893
Discounted Economic Profit	**8335,93**	**8488,45**	**8533,58**	**8475,41**	**8311,16**

Source: Author's elaboration

The company's value is the sum of the invested capital at the beginning of the estimation period, the sum of present values of the expected economic profits in the estimation period (formula 27), and its terminal value (formulas 28 and 29). As ROIC and RONIC are not equal, the author splits the economic profits in the terminal period into the current and future economic profits, as recommended by Koller, Goedhart and Wessels (2020). ROIC is calculated by dividing NOPAT in the terminal period ($\text{NOPAT}_6 = 25\,497{,}67\ \text{M U.S. dollars}$) by invested capital in the terminal period, which was estimated to increase at the level of depreciation and results in value of $\text{Invested Capital}_6 = 75\,520\ \text{M U.S. dollars}$, and $\text{ROIC}_6 = 33.76\%$ accordingly.

The value of Visa Inc. using discounted economic profit method equals the following:

$$\text{Value} = \text{Invested Capital}_0 + \sum_{i=1}^{5} \frac{\text{Economic Profit}_i}{(1+\text{WACC})^i} + \text{Invested Capital}_5 + \frac{\text{Invested Capital}_5 \times (\text{ROIC}_6 - \text{WACC})}{\text{WACC}} + \frac{\frac{\text{NOPAT}_6 \times \left(\frac{g}{\text{RONIC}}\right) \times (\text{RONIC} - \text{WACC})}{\text{WACC}}}{\text{WACC} - g} = 55\,427\ \text{M} + 42\,144.5\ \text{M} +$$

$$74\,049\ \text{M} + \frac{74049 \times (0{,}3376 - 0.1287)}{0.1287} + \frac{\frac{25497.67 \times \left(\frac{0.03}{0.4729}\right) \times (0.4729 - 0.1287)}{0.1287}}{0.1287 - 0.03} = 55\,427\ \text{M} +$$

$$42\,144\ \text{M} + 74\,049\ \text{M} + 120\,209.1\ \text{M} + 43\,831.8\ \text{M} = 335\,661.4\ \text{M U.S. dollars} \quad (37).$$

4.3 Valuation results overview

The comparison of the obtained values of Visa Inc., using different valuation methods, is presented in table 21.

Table 21. Company value estimates using different valuation methods, in U.S. dollars

Valuation method	DCF	DCF-adjusted	Discounted economic profit
Value	306 249.5 M	312 133.1 M	335 661.4 M

Source: Author's elaboration

The value estimates using different methods are close to each other with a margin of error of 9%, yet not equal as they should have been in theory. The difference in estimation may result from the research limitations that will be outlined further.

Nevertheless, the author relies more on the value obtained with the discounted economic profit method as the total company's value is a sum of more components in contrast to the DCF-valuation method, where terminal value is defined as almost 80% of the total value, and therefore there are lower chances of errors. Also, the economic profit valuation is largely based on the value of the invested capital, which was estimated by the author based on the conducted fundamental analysis prior to valuation and the company's strategic goals, and thus the author relies on the obtained value under the set assumptions.

As it was mentioned in the theoretical part, the discounted economic profit method allows one to see how exactly the company creates value. From the formula (37), it is clear that current economic profits account (120 209.1 M) account for 35% of the company's value. At the same time, the value estimate within the valuation period (97 571 M) represents only 29% of the company's value. Notably, the future economic profits (43 831.8 M) are not that significant, and there is evidence that it is important to sustain a RONIC level above the cost of capital and revenue growth to ensure value creation in the future period.

The DCF valuation method shows the value of Visa Inc. (formula 35) is mainly determined by its estimated value in the terminal period. And the inability to keep the high RONIC will result in a significant decrease in the value, as the terminal value estimate in DCF valuation is very sensitive to the input data estimates.

The formula (35) also shows that Visa's generated cash flows are not bringing the desired valuation outcome, as the company was assumed to grow and execute its investment plan to generate more cash flow and, therefore, more value. If compared to the previously obtained enterprise value (31) of 447 654.68 M U.S. dollars or the market cap value of 440 894 68 M U.S. dollars, it becomes clear that the company is overvalued.

The trustworthiness and reputation of the company as well as its outstanding leadership in the financial service industry put Visa in a favorable position in the market. The market cap expresses the company's market value or how much the investors are ready to pay for its shares rather than its intrinsic value. As for an intrinsic valuation, or value estimation using the fundamental methods of analysis, the calculated values (table 21) show that there is a huge room for improvement, indeed.

The difference between the estimated value of the company and its market capitalization may let down the shareholders and potential investors.

The computation of the intrinsic value of the company per share gave a result of 178.16 U.S. Dollars against a market price of 234.02 U.S. Dollars per share (table 22).

Table 22. Investment summary for Visa Inc., as of 4 April 2023

The intrinsic value of Visa share	The market price of Visa share
178.16 U.S. Dollars	234.02 U.S. Dollars

Source: Author's elaboration

There is enough evidence to conclude that Visa is overvalued. Considering the outcomes of the fundamental research and the valuation results, the author gives an investment recommendation to sell to the investors of Visa Inc.

The recommendations to the stakeholders based on the conducted analysis and valuation, as well as the limitations of the research and reliability of the valuation models, will be discussed in the next chapters.

5 RECOMMENDATIONS FOR STAKEHOLDERS

The conducted comprehensive analysis showed that captured in financial statements value drivers do not approximate the intrinsic value of the company to its market cap. Although the author believes that external factors may help Visa to keep its competitive position and reassure value creation in the long run by carrying out activities that deliver value to its stakeholders, the present recommendation is: to sell.

Based on the research, the author developed the recommendations to the stakeholders as follows:

Customers are encouraged to use Visa services as the company provides a safe, speedy, and simple payment method. The company guarantees the reliability and security of the proceeding data. The company carries out many local social initiatives and supports communities where it operates; therefore, Visa services are recommended to choose over the market competitors.

Employees assess the company as a good place to work by giving a rating of 4.1 out of 5 (Visa Inc. Reviews, 2023). At the same time, the competitors of Visa have slightly higher rankings. It is recommended that senior human resources managers pay attention to the employee's welfare and improve the working conditions by implementing programs aimed at professional and personal growth.

Suppliers are important business partners of Visa, as they serve as an intermediary between the company and its customers; therefore, favorable conditions should be set. The author finds Visa's business operations and the organization of the business activities trustworthy and recommends that financial intermediaries and merchants cooperate with Visa and adopt its services.

Communities benefit from cooperation with such a giant as Visa Inc. The author suggests the communities play a more active role in developing initiatives that will involve Visa as a sponsor, and by doing this, the value will be multiplied and bring more benefit to people in the region. The local communities should take advantage of Visa's ESG and bring value to those who need it the most. For example, Visa's branch in Ukraine supports many charitable initiatives, local businesses, and media to overcome the consequences of the war and strengthen Ukraine's economy. This brings value to all: the customers, the communities, and the company. The ESG is the way to create and deliver value, although it is not fully captured in the financial statements.

Shareholders would expect a constant increase in return for the invested capital, which is not the present case. The valuation results revealed that Visa is overvalued. The company proved itself to be reliable, having a strong brand image and reputation; however, its estimated intrinsic value, along with a growth strategy, does not generate enough value, and that convinces one to sell the shares.

Investors are recommended to consider the investment in Visa by buying its shares from the analytical perspective and the assessment of the opportunity cost of their capital rather than following behavioral patterns while making a decision. The valuation revealed that Visa's shares are overvalued, so the present moment is not the right time to invest in the company through the purchase of its shares.

LIMITATIONS OF THE RESEARCH

The performed valuation had its limitations which could have led to vague or biased valuation results, as the accuracy of the input data estimation is subject to the estimation risk.

To minimize the biased risk, the author developed the estimates of the financial balance sheet and income statements items for the valuation period based on the conducted strategic and financial analyses, which enabled the author to identify the growth perspectives of the company, define its planned investments and suggest the growth and/or decline of its financial statements indicators. All the assumptions made were consistent with the company's strategic objectives studied in the analytical part of the thesis.

The author performed the valuation using different methods to solve the problem of the high sensitivity of valuation formulas to the inaccuracy of estimation, which can cause the results to have a substantial level of uncertainty. The recommendations of Koller, Goedhart and Wessels (2020) were followed to minimize the errors (the invested capital was defined consistently, the last year's values were taken, as well as the same WACC rate was used for discounting). Moreover, two valuation methods requiring different input data were used to minimize the occurrence of mistakes in results. The moderate degree of proximity of the obtained values indicates that the valuation results could be trusted.

The discount rate, which was obtained as the result of the cost of capital using the WACC and the cost of equity using the CAPM models due to the unavailability of all the required information, may, however, be biased. To limit the risk of errors, the author followed the recommendations of professionals in the field of business valuation (Brealey, Myers and Allen, 2020) and took the systematic risk (beta) value from Yahoo Finance! Website. The expected market return estimation was based on historical market returns, and the book value instead of the market value of debt in the cost structure was used, which could have affected the accuracy of the estimation. To lessen the bias of WACC estimation, the author used iteration to adjust the capital structure.

CONCLUSION

The in-depth literature review on corporate valuation enabled the author to discuss the topicality of business valuation, study the notions of value, investigate the value creation process, and define fundamental drivers in value creation. The theoretical research supported the examination of valuation frameworks and the study of the valuation process. The author presented a different classification of the valuation approaches and neatly described the selected valuation methods that were later used for evaluating the target company.

The project part of this thesis began with an analytical assessment of the company's standings through strategic and financial analysis. The author went through the macroeconomic, industry, situational, financial, and risk analyses of the company while performing the fundamental analysis.

The strategic and financial analysis of Visa Inc. showed that the company holds a leading position in the financial services sector in the thriving industry of credit services.

Financial analysis proved Visa's substantial resistance to the economic slowdowns; however, the overall condition of the macroeconomic environment affects the company's growth opportunities. High inflation rates, global GDP growth slowdown, and exchange rate fluctuations cause a deceleration of the company expansion. Whereas, the favorable conditions in the industry, which is characterized by the shift of consumer payment patterns towards digital payments as well as the increasing trend of the transaction value of digital payments, determine higher revenues for Visa in the long run.

Visa outstands its competitors and has a huge market and open opportunities. The performed SWOT and PESTLE analyses as a part of a situational analysis of the company allowed the author to identify the opportunities for the company which will enable Visa to grow and prosper in the future. The advancement of digital payments technology and expansion into new markets are the key directions of the company's development. The peculiarity of the company's business model requires huge investments in technology and maintenance of its services. Political and legal factors may limit growth opportunities; however, the regulations also create a buffer of protection from undesired market entries. The assessment of the power of suppliers, buyers, the risk of new entries, the threat of substitute products as well as the competition was performed as a part of Porter's Five Forces analysis. The risk matrix was developed for Visa as an outcome of risk analysis.

The financial statements prediction and the valuation using described in detail (in the theoretical part) selected valuation methods – discounted cash flow and discounted economic profit were performed based on the conducted fundamental analysis.

The obtained intrinsic value of the company was compared to the enterprise and market cap value, and the results were discussed. The valuation enabled the author to assess the developed investment plan from the perspective of the amount of value created, track the value drivers, and identify how the company creates value. The recommendations for the stakeholders were formulated as a concluding part of the research.

The author presented the valuation process in great detail, and the outcomes of this thesis may be of use to the company's stakeholders or potential investors, as well as anyone interested in the field of corporate valuation.

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LIST OF ABBREVIATIONS

APV	Adjusted Present value
ATM	Automated Teller Machine
B	Billion
B2B	Business-to-business
B2C	Business-to-consumer
B2b	Business-to-small business
CAPM	Capital Asset Pricing Model
CAPEX	Capital Expenditure
CEO	Chief Executive Officer
CAGR	Compound annual growth rate
C2B	Consumer to business
COVID-19	Coronavirus disease
C2B	Customer-to-business
D&A	Depreciation and Amortization
DCF	Discounted Cash Flow
DJ	Dow Jones
EBIT	Earnings before interest and tax
EBITDA	Earnings before interest, taxes, depreciation and amortization
EVA	Economic value added
ESG	Environmental, Social and Governance
EMEA	Europe, Middle East, and Africa
ECB	European Central Bank
FCF	Free cash flow
FCFE	Free cash flow to equity
FCFF	Free cash flow to the firm
G2C	Government-to-consumer
GDP	Gross Domestic Product
INC	Incorporated
IRF	Interchange Reimbursement Fee
IMF	International Monetary Fund
IR	Investment rate
KPI	Key Performance Indicator
MDR	Merchant Discount Rate
M	Million
NOPAT	Net operating profit after tax
NPV	Net Present Value
NWC	Net Working Capital
NYSE	New York Stock Exchange
NCWC	Non-cash working capital
P2P	Person-to-person
POS	Point of sale

PESTLE	Political, Economic, Social, Technological, Legal and Environmental
P/E	Price-to-earnings ratio
PP&T	Property equipment and technology
ROE	Return on Equity
ROIC	Return on Invested Capital
RONIC	Return on New Invested Capital
ROA	Returns on Assets
SMBs	Small and medium-sized enterprises
S&P 500	Standard and Poor's 500
SWOT	Strengths, weaknesses, opportunities, and threats
Fed	The Federal Reserve in the U.S
US	United States of America
USA	United States of America
USD	United States Dollar
WACC	Weighted average cost of capital

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APPENDIX P I: Horizontal analysis of Balance Sheet for the period 2018-2022

Horizontal Analysis of Balance Sheet										
						% Δ				
(in millions USD)	**2022**	**2021**	**2020**	**2019**	**2018**	**2022-'21**	**2021-'20**	**2020-'19**	**2019-'18**	**2022-'18**
Assets										
Cash and cash equivalents	15689	16487	16289	7838	8162	-4,84	1,22	107,82	-3,97	92,22
Restricted cash equivalents—U.S. litigation escrow	1449	894	901	1205	1491	62,08	-0,78	-25,23	-19,18	-2,82
Investment securities	2833	2025	3752	4236	3547	39,90	-46,03	-11,43	19,42	-20,13
Settlement receivable	1932	1758	1264	3048	1582	9,90	39,08	-58,53	92,67	22,12
Accounts receivable	2020	1968	1618	1542	1208	2,64	21,63	4,93	27,65	67,22
Customer collateral	2342	2260	1850	1648	1324	3,63	22,16	12,26	24,47	76,89
Current portion of client incentives	1272	1359	1214	741	340	-6,40	11,94	63,83	117,94	274,12
Prepaid expenses and other current assets	2668	856	757	712	562	211,68	13,08	6,32	26,69	374,73
Total current assets	**30205**	**27607**	**27645**	**20970**	**18216**	**9,41**	**-0,14**	**31,83**	**15,12**	**65,82**
Investment securities	2136	1705	231	2157	4082	25,28	638,10	-89,29	-47,16	-47,67
Client incentives	3348	3245	3175	2084	538	3,17	2,20	52,35	287,36	522,30
Property equipment and technology net	3223	2715	2737	2695	2472	18,71	-0,80	1,56	9,02	30,38
Goodwill	17787	15958	15910	15656	15194	11,46	0,30	1,62	3,04	17,07
Intangible assets net	25065	27664	27808	26780	27558	-9,39	-0,52	3,84	-2,82	-9,05
Other assets	3737	4002	3413	2232	1165	-6,62	17,26	52,91	91,59	220,77
Total assets	**85501**	**82896**	**80919**	**72574**	**69225**	**3,14**	**2,44**	**11,50**	**4,84**	**23,51**
Liabilities										
Accounts payable	340	266	174	156	183	27,82	52,87	11,54	-14,75	85,79
Settlement payable	3281	2443	1736	3990	2168	34,30	40,73	-56,49	84,04	51,34
Customer collateral	2342	2260	1850	1648	1325	3,63	22,16	12,26	24,38	76,75
Accrued compensation and benefits	1359	1211	821	796	901	12,22	47,50	3,14	-11,65	50,83

Client incentives	6099	5243	4176	3997	2834	16,33	25,55	4,48	41,04	115,21
Accrued liabilities	3726	2334	1840	1625	1160	59,64	26,85	13,23	40,09	221,21
Deferred purchase consideration					1300					
Current maturities of debt	2250	999	2999			125,23	-66,69			
Accrued litigation	1456	983	914	1203	1434	48,12	7,55	-24,02	-16,11	1,53
Total current liabilities	**20853**	**15739**	**14510**	**13415**	**11305**	**32,49**	**8,47**	**8,16**	**18,66**	**84,46**
Long-term debt	20200	19978	21071	16729	16630	1,11	-5,19	25,95	0,60	21,47
Deferred tax liabilities	5332	6128	5237	4807	4618	-12,99	17,01	8,95	4,09	15,46
Other liabilities	3535	3462	3891	2939	2666	2,11	-11,03	32,39	10,24	32,60
Total liabilities	**49920**	**45307**	**44709**	**37890**	**35219**	**10,18**	**1,34**	**18,00**	**7,58**	**41,74**
Equity										
Preferred stock	2324	3080	5086	5462	5470	-24,55	-39,44	-6,88	-0,15	-57,51
Common stock and additional paid-in capital	19545	18855	16721	16541	16678	3,66	12,76	1,09	-0,82	17,19
Right to recover for covered losses	-35	-133	-39	-171	-7	73,68	-241,03	77,19	-2342,86	-400,00
Accumulated income	16116	15351	14088	13502	11318	4,98	8,97	4,34	19,30	42,39
Total accumulated other comprehensive income (loss) net	**(2 369)**	**436**	**354**	**(650)**	**547**	**-643,35**	**23,16**	**154,46**	**218,83**	**-533,09**
Total equity	**35581**	**37589**	**36210**	**34684**	**34006**	**-5,34**	**3,81**	**4,40**	**1,99**	**4,63**
Total liabilities and equity	**85501**	**82896**	**80919**	**72574**	**69225**	**3,14**	**2,44**	**11,50**	**4,84**	**23,51**

Source: Author's elaboration

APPENDIX P II: Vertical analysis of Balance Sheet for the period 2018-2022

Vertical Analysis of Balance Sheet										
						%				
(in millions USD)	**2022**	**2021**	**2020**	**2019**	**2018**	**2022**	**2021**	**2020**	**2019**	**2018**
Assets										
Cash and cash equivalents	15689	16487	16289	7838	8162	18,35	19,89	20,13	10,80	11,79
Restricted cash equivalents—U.S. litigation escrow	1449	894	901	1205	1491	1,69	1,08	1,11	1,66	2,15
Investment securities	2833	2025	3752	4236	3547	3,31	2,44	4,64	5,84	5,12
Settlement receivable	1932	1758	1264	3048	1582	2,26	2,12	1,56	4,20	2,29
Accounts receivable	2020	1968	1618	1542	1208	2,36	2,37	2,00	2,12	1,75
Customer collateral	2342	2260	1850	1648	1324	2,74	2,73	2,29	2,27	1,91
Current portion of client incentives	1272	1359	1214	741	340	1,49	1,64	1,50	1,02	0,49
Prepaid expenses and other current assets	2668	856	757	712	562	3,12	1,03	0,94	0,98	0,81
Total current assets	**30205**	**27607**	**27645**	**20970**	**18216**	**35,33**	**33,30**	**34,16**	**28,89**	**26,31**
Investment securities	2136	1705	231	2157	4082	2,50	2,06	0,29	2,97	5,90
Client incentives	3348	3245	3175	2084	538	3,92	3,91	3,92	2,87	0,78
Property equipment and technology net	3223	2715	2737	2695	2472	3,77	3,28	3,38	3,71	3,57
Goodwill	17787	15958	15910	15656	15194	20,80	19,25	19,66	21,57	21,95
Intangible assets net	25065	27664	27808	26780	27558	29,32	33,37	34,37	36,90	39,81
Other assets	3737	4002	3413	2232	1165	4,37	4,83	4,22	3,08	1,68
Total assets	**85501**	**82896**	**80919**	**72574**	**69225**	**100,00**	**100,00**	**100,00**	**100,00**	**100,00**
Liabilities										
Accounts payable	340	266	174	156	183	0,40	0,32	0,22	0,21	0,26
Settlement payable	3281	2443	1736	3990	2168	3,84	2,95	2,15	5,50	3,13
Customer collateral	2342	2260	1850	1648	1325	2,74	2,73	2,29	2,27	1,91
Accrued compensation and benefits	1359	1211	821	796	901	1,59	1,46	1,01	1,10	1,30

Client incentives	6099	5243	4176	3997	2834	7,13	6,32	5,16	5,51	4,09
Accrued liabilities	3726	2334	1840	1625	1160	4,36	2,82	2,27	2,24	1,68
Deferred purchase consideration					1300					1,88
Current maturities of debt	2250	999	2999			2,63	1,21	3,71		
Accrued litigation	1456	983	914	1203	1434	1,70	1,19	1,13	1,66	2,07
Total current liabilities	**20853**	**15739**	**14510**	**13415**	**11305**	**24,39**	**18,99**	**17,93**	**18,48**	**16,33**
Long-term debt	20200	19978	21071	16729	16630	23,63	24,10	26,04	23,05	24,02
Deferred tax liabilities	5332	6128	5237	4807	4618	6,24	7,39	6,47	6,62	6,67
Other liabilities	3535	3462	3891	2939	2666	4,13	4,18	4,81	4,05	3,85
Total liabilities	**49920**	**45307**	**44709**	**37890**	**35219**	**58,39**	**54,66**	**55,25**	**52,21**	**50,88**
Equity										
Preferred stock	2324	3080	5086	5462	5470	2,72	3,72	6,29	7,53	7,90
Common stock and additional paid-in capital	19545	18855	16721	16541	16678	22,86	22,75	20,66	22,79	24,09
Right to recover for covered losses	-35	-133	-39	-171	-7	-0,04	-0,16	-0,05	-0,24	-0,01
Accumulated income	16116	15351	14088	13502	11318	18,85	18,52	17,41	18,60	16,35
Total accumulated other comprehensive income (loss) net	**(2 369)**	**436**	**354**	**(650)**	**547**	**-2,77**	**0,53**	**0,44**	**-0,90**	**0,79**
Total equity	**35581**	**37589**	**36210**	**34684**	**34006**	**41,61**	**45,34**	**44,75**	**47,79**	**49,12**
Total liabilities and equity	**85501**	**82896**	**80919**	**72574**	**69225**	**100,00**	**100,00**	**100,00**	**100,00**	**100,00**

Source: Author's elaboration

APPENDIX P III: Horizontal analysis of Income Statement for the period 2018-2022

Horizontal Analysis of Income Statement										
						% Δ				
(in millions USD)	**2022**	**2021**	**2020**	**2019**	**2018**	**2022-'21**	**2021-'20**	**2020-'19**	**2019-'18**	**2022-'18**
Net revenues	**29310**	**24105**	**21846**	**22977**	**20609**	**21,59**	**10,34**	**-4,92**	**11,49**	**42,22**
Operating Expenses										
Personnel	4990	4240	3785	3444	3170	17,69	12,02	9,90	8,64	57,41
Marketing	1336	1136	971	1105	988	17,61	16,99	-12,13	11,84	35,22
Network and processing	743	730	727	721	686	1,78	0,41	0,83	5,10	8,31
Professional fees	505	403	408	454	446	25,31	-1,23	-10,13	1,79	13,23
Depreciation and amortization	861	804	767	656	613	7,09	4,82	16,92	7,01	40,46
General and administrative	1194	985	1096	1196	1145	21,22	-10,13	-8,36	4,45	4,28
Litigation provision	868	3	11	400	607	28833,33	-72,73	-97,25	-34,10	43,00
Total operating expenses	**10497**	**8301**	**7765**	**7976**	**7655**	**26,45**	**6,90**	**-2,65**	**4,19**	**37,13**
Operating income	**18813**	**15804**	**14081**	**15001**	**12954**	**19,04**	**12,24**	**-6,13**	**15,80**	**45,23**
Non-operating Income (Expense)										
Interest expense	(538)	(513)	(516)	(533)	(612)	-4,87	0,58	3,19	12,91	12,09
Investment income (expense) and other	(139)	772	225	416	464	-118,01	243,11	-45,91	-10,34	-129,96
Total non-operating income (expense)	**(677)**	**259**	**(291)**	**(117)**	**(148)**	**-361,39**	**189,00**	**-148,72**	**20,95**	**-357,43**
Income before income taxes	**18136**	**16063**	**13790**	**14884**	**12806**	**12,91**	**16,48**	**-7,35**	**16,23**	**41,62**
Income tax provision	**3179**	**3752**	**2924**	**2804**	**2505**	**-15,27**	**28,32**	**4,28**	**11,94**	**26,91**
Net income	**14957**	**12311**	**10866**	**12080**	**10301**	**21,49**	**13,30**	**-10,05**	**17,27**	**45,20**

Source: Author's elaboration

APPENDIX P IV: Vertical analysis of Income Statement for the period 2018-2022

Vertical Analysis of Income Statement										
						%				
(in millions USD)	**2022**	**2021**	**2020**	**2019**	**2018**	**2022**	**2021**	**2020**	**2019**	**2018**
Net revenues	**29310**	**24105**	**21846**	**22977**	**20609**	**100,00**	**100,00**	**100,00**	**100,00**	**100,00**
Operating Expenses										
Personnel	4990	4240	3785	3444	3170	17,02	17,59	17,33	14,99	15,38
Marketing	1336	1136	971	1105	988	4,56	4,71	4,44	4,81	4,79
Network and processing	743	730	727	721	686	2,53	3,03	3,33	3,14	3,33
Professional fees	505	403	408	454	446	1,72	1,67	1,87	1,98	2,16
Depreciation and amortization	861	804	767	656	613	2,94	3,34	3,51	2,86	2,97
General and administrative	1194	985	1096	1196	1145	4,07	4,09	5,02	5,21	5,56
Litigation provision	868	3	11	400	607	2,96	0,01	0,05	1,74	2,95
Total operating expenses	**10497**	**8301**	**7765**	**7976**	**7655**	**35,81**	**34,44**	**35,54**	**34,71**	**37,14**
Operating income	**18813**	**15804**	**14081**	**15001**	**12954**	**64,19**	**65,56**	**64,46**	**65,29**	**62,86**
Non-operating Income (Expense)										
Interest expense	(538)	(513)	(516)	(533)	(612)	-1,84	-2,13	-2,36	-2,32	-2,97
Investment income (expense) and other	(139)	772	225	416	464	-0,47	3,20	1,03	1,81	2,25
Total non-operating income (expense)	**(677)**	**259**	**(291)**	**(117)**	**(148)**	**-2,31**	**1,07**	**-1,33**	**-0,51**	**-0,72**
Income before income taxes	**18136**	**16063**	**13790**	**14884**	**12806**	**61,88**	**66,64**	**63,12**	**64,78**	**62,14**
Income tax provision	**3179**	**3752**	**2924**	**2804**	**2505**	**10,85**	**15,57**	**13,38**	**12,20**	**12,15**
Net income	**14957**	**12311**	**10866**	**12080**	**10301**	**51,03**	**51,07**	**49,74**	**52,57**	**49,98**

Source: Author's elaboration

APPENDIX P V: Estimates of the Balance Sheet items for the period 2023-2027 (Forecast)

(in millions USD)	2023F	2024F	2025F	2026F	2027F
Assets					
Cash and cash equivalents	16473	17297	18162	19070	20024
Restricted cash equivalents—U.S. litigation escrow	348	398	455	520	592
Investment securities	1044	1195	1366	1559	1776
Settlement receivable	2351	2586	2845	3130	3443
Accounts receivable	2069	2276	2504	2754	3029
Customer collateral	2586	2845	3130	3443	3787
Current portion of client incentives	1401	1541	1696	1865	2052
Prepaid expenses and other current assets	8525	11691	15364	19611	24509
Total current assets	**34799**	**39831**	**45521**	**51951**	**59211**
Investment securities	2351	3621	5121	6885	7298
Client incentives	3762	4138	4552	5007	5508
Property equipment and technology net	4190	5447	7081	9205	11967
Goodwill	18810	20691	22760	25036	27540
Intangible assets net	23812	22621	21490	20416	19395
Other assets	6327	7107	7277	6682	6781
Total assets	**94051**	**103456**	**113802**	**125182**	**137700**
Liabilities					
Accounts payable	442	486	535	588	647
Settlement payable	3764	4140	4554	5010	5511
Customer collateral	2537	2791	3070	3377	3715
Accrued compensation and benefits	1486	1635	1798	1978	2176
Client incentives	7524	9311	11380	13770	16524
Accrued liabilities	4703	5690	6828	8137	9639
Current maturities of debt	2568	2824	3107	3417	3759
Accrued litigation	1430	1573	1730	1903	2093
Total current liabilities	**24453**	**28450**	**33003**	**38181**	**44064**

Long-term debt	22666	24933	27426	30169	33186
Deferred tax liabilities	5718	6290	6919	7611	8372
Other liabilities	3593	3952	4347	4782	5260
Total liabilities	**56431**	**63626**	**71695**	**80742**	**90882**
Equity					
Preferred stock	2633	2379	2048	1627	1102
Common stock and additional paid-in capital	20522	21548	22626	23757	24945
Right to recover for covered losses	-47	-52	-57	-63	-69
Accumulated income	17776	19346	21053	22908	24924
Total accumulated other comprehensive income (loss) net	**(3264)**	**(3392)**	**(3564)**	**(3791)**	**(4083)**
Total equity	**37620**	**39831**	**42107**	**44440**	**46818**
Total liabilities and equity	**94051**	**103456**	**113802**	**125182**	**137700**

Source: Author's elaboration

APPENDIX P VI: Estimates of the Income Statement items for the period 2023-2027 (Forecast)

(in millions USD)	2023F	2024F	2025F	2026F	2027F
Net revenues	**31906**	**35313**	**38994**	**42942**	**47114**
Operating Expenses					
Personnel	5252	5813	6419	7069	7756
Marketing	1488	1647	1819	2003	2197
Network and processing	980	1085	1198	1319	1447
Professional fees	600	664	733	808	886
Depreciation and amortization	996	1103	1218	1341	1471
General and administrative	1528	1691	1867	2056	2256
Litigation provision	492	545	601	662	727
Total operating expenses	**11336**	**12547**	**13855**	**15257**	**16740**
Operating income	**20570**	**22766**	**25139**	**27684**	**30374**
Non-operating Income (Expense)					
Interest expense	(741)	(820)	(906)	(998)	(1094)
Investment income (expense) and other	499	552	610	672	737
Total non-operating income (expense)	**(242)**	**(268)**	**(296)**	**(326)**	**(358)**
Income before income taxes	**20328**	**22498**	**24843**	**27358**	**30017**
Income tax provision	**4094**	**4531**	**5003**	**5510**	**6045**
Net income	**16234**	**17967**	**19840**	**21849**	**23972**

Source: Author's elaboration