INSTITUTO
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Equity Research: Eletronic Sports Inc.

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Master in Finance

Supervisor:
PhD Pedro Manuel de Sousa Leite Inácio, Assistant Professor,
ISCTE Business School

September, 2024

BUSINESS SCHOOL

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Resumo

Este trabalho baseia-se na avaliação da empresa Electronic Arts, uma empresa norte-americana de jogos e entretenimento fundada em 1982. A empresa opera em várias plataformas, incluindo computadores pessoais, consolas e smartphones, com foco principal em software de jogos. Notavelmente, o seu sucesso é atribuído a franquias de jogos de destaque, especialmente na categoria de futebol. Desde que o contrato da empresa com a FIFA expirou em 2023, o rótulo da marca do jogo de futebol mudou, e novos desafios surgem para a empresa; uma análise sobre essa mudança também será abordada ao longo deste trabalho.

A avaliação foi realizada utilizando dois métodos: Fluxo de Caixa Descontado (FCD) e Avaliação Relativa por Múltiplos. Na abordagem FCD, os fluxos de caixa futuros da empresa são estimados e descontados ao seu valor atua. A combinação desses fluxos de caixa somado ao valor terminal resulta no valor da Empresa. Posteriormente, o valor dos capitais próprios é determinado adicionando as disponibilidades e equivalentes do balanço patrimonial e subtraindo a dívida da empresa. Dividindo-os depois pelo número de ações em circulação, obtém-se o preço estimado por ação. No processo de Avaliação Relativa por Múltiplos, as finanças de empresas comparáveis são analisadas para estabelecer uma comparação entre as suas avaliações e a da Electronic Arts.

Após uma avaliação minuciosa utilizando os métodos FCD e Avaliação Relativa por Múltiplos, surge uma recomendação de **compra** para as ações da Electronic Arts. A avaliação pelo método FCFF resultou num preço de USD 152.5 por ação, seguido pelo valor obtido através da avaliação pelo método FCFE de USD 153.6 A avaliação através dos múltiplos EV/EBITDA e P/E resultou num valor de USD 144 e USD 153.5, respetivamente.

Classificação JEL: G00; G10; G30; G32; G34; G35.

Palavras-Chave: Eletronic Sports; Jogos; Equity Research; Avaliação de Empresas; M&A

Abstract

This master's project centres on evaluating the company Electronic Arts, a US-based gaming and entertainment company established in 1982. The company operates on various platforms, including personal computers, consoles, and smartphones, primarily focusing on game software. Notably, its success is attributed to prominent game franchises, particularly in the football category. Since the company's contract with FIFA expired in 2023, the brand label of the football game has now changed and new challenges are coming for the company, analysis regarding this change will also be addressed in this master project.

The valuation was conducted using two methods: Discounted Cash Flows (DCF) and Multiple Relative Valuation. In the DCF approach, the future cash flows of the company are estimated and discounted to their present value. The combination of these cash flows plus the terminal value yields the Enterprise value. Subsequently, the Equity value is derived by adding the cash and equivalent from the balance sheet and subtracting the company's debt. Dividing the Equity value by the number of shares outstanding provides the estimated price per share. In the Multiple Relative Valuation process, the financials of comparable companies are analysed to establish a comparison between their valuations and that of Electronic Arts.

Following a thorough valuation using DCF and Multiple Relative methods, a recommendation emerges for Electronic Arts shares. The valuation using the FCFF method calculated at a price of USD 152.5 per share, followed by the value obtained through the valuation using the FCFE method of USD 153.6. The evaluation using the EV/EBITDA and P/E multiples resulted in a value of USD 144 and USD 153.5, respectively.

JEL classification: G00; G10; G30; G32; G34; G35.

Keywords: Electronic Sports; Gaming; Equity Research; Valuation; M&A

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Glossary

$		
	$b	Dollar Billions
	$m	Dollar Millions
A		
	APV	Adjusted Present Value
C		
	CAGR	Compound Annual Growth Rate
	CAPEX	Capital Expenditures
	CAPM	Capital Asset Pricing Model
	COGS	Cost of Goods Sold
	CRP	Country Risk Premium
	CSR	Corporate Social Responsibility
D		
	D&A	Depreciation and Amortizations
	DCF	Discounted Cash Flow
	DDM	Dividend Discount Model
	DPS	Dividends Per Share
E		
	E	Earnings
	EBIT	Earnings Before Interest and Taxes
	EBITDA	Earnings Before Interest Taxes Depreciation and Amortization
	EMDE	Emerging Markets and Developing Economies
	EPS	Earnings Per Share
	EV	Enterprise Value
	EVA	Economic Value Added
F		
	FCFE	Free Cash Flow to Equity
	FCFF	Free Cash Flow to Firm
G		
	G	Growth Rate
	GDP	Gross Domestic Product
I		
	IMF	International Monetary Fund
	IPO	Initial Public Offering
M		
	M&A	Mergers and Acquisitions
	MRP	Market Risk Premium
O		
	OPEX	Operational Expenditures
P		
	P	Price
	PP&E	Property Plant and Equipment
R		
	ROA	Return on Assets
	ROCE	Return on Average Capital Employed
	ROE	Return on Equity
	ROIC	Return on Invested Capital
S		
	SG&A	Selling, General and Administrative
W		
	WTO	World Trade Organization
	WACC	Weighted Average Cost of Capital
X		
	xxxxA	Actual Period
	xxxxF	Forecast Period
Y		
	YE	Year End
	YoY	Year on Year
	YTD	Year to Date

1. Introduction

The Internet is helping people bring financial information and free content that helps several people think about what to do with their finances. The income for most of the population comes from work, but because of the new tendency due to social media and networks, people search for alternative sources of income. Among many alternatives, investing in financial assets is an accessible way to try to make this extra income.

Investing is not a way to make money without doing anything, when someone decides to invest, this person needs to know that he can lose part or their entire investment, and there is a risk associated. Additionally, to the investment risk, investors have a challenge to control their own emotions, since each investment has unique characteristics.

The difference between the stock price and its intrinsic value gives the investor the opportunity to make an investment decision with the intention that these two values converge over time. Moreover, determining the intrinsic value involves employing various valuation methods. This can be achieved by either projecting the company's future cash flows and discounting them at a specified rate, or by utilizing market multiples. In the latter approach, a comparable company is identified, and its market valuation is compared to that of the target company. For instance, if the market values a comparable company at a certain level, this value can be divided by the company's financial metric (such as EBITDA). Subsequently, this multiple can be applied to the target company's EBITDA to derive its estimated value.

Electronic Arts Inc. was selected as the focal company for analysis due to two primary factors. Firstly, amidst the ongoing shifts and advancements spurred by globalization and technology, it was imperative to gain insights into the future trajectory of the gaming industry. The author finds it both challenging and intriguing to fathom how companies in this sector will adapt to transformative developments. Additionally, the selection of EA Sports is driven by the recognition of a highly dynamic market environment characterized by continually evolving. Exploring how EA Sports sustains its prominence in the history of the sports gaming industry adds an especially intriguing dimension to the analysis.

Electronic Arts, established in 1982, has its headquarters situated in Redwood City, California. The company specializes in the creation and distribution of sports video games, catering to a diverse audience of gaming enthusiasts worldwide. EA Sports operates across various games, EA SPORTS™ FIFA, Battlefield™, Apex Legends™, The Sims™, Madden™ NFL, Need for Speed™, Titanfall™ e F1™. Delivering immersive gaming experiences and developing cutting-edge gaming technologies for both console, mobile, and PC platforms.

The primary objective of this research is to assess the fair value of the company and determine whether the stock market is currently overvalued or undervalued. The literature review will comprehensively explore various valuation methodologies to identify and select the

most appropriate approach for evaluating the company. Subsequently, both internal and external qualitative factors, including macroeconomic and industry prospects, as well as an overview of the company, will be carefully examined. Following this, financial statements will be estimated. In chapter 4, the actual valuation methodologies will be implemented, and chapter 5 will involve making an investment decision. In the valuation decision-making process, specific criteria will be employed. Based on the DCF model, the decision is to buy as the estimated price surpasses the market reference value (28/12/2023). Utilizing the Multiples method, the share value is also consistently under the reference value across multiples.

In conclusion, it is crucial to recognize that this investment strategy requires time to realize its potential. The key lesson is that historical returns serve as indicators rather than precise predictors of future performance. Market dynamics are unpredictable, and the notion of achieving rapid wealth is an illusion. Successful investment requires not only knowledge about the markets but also emotional stability, allowing the market to reveal the rationale behind investment decisions.

2. Literature Review

The literature review marks the commencement of the expedition undertaken in this project. Within this section, we scrutinize the pertinent pre-existing literature, integrating and elucidating fundamental definitions and concepts. Furthermore, outlining both the positives and drawbacks associated with different existing valuation methods. The selection of the most suitable approach for implementation in this project is made with due consideration to EA's context.

Even with the choice of a valuation methodology, it is important to emphasize that valuation is not a purely math process and that there is not only one possible answer, additionally, other factors such as the preconceptions of stakeholders or analysts will be reflected in the valuation. In that sense, “the precision of the answer is used as a measure of the quality of the process that yielded the answer. While this may be appropriate in mathematics or physics, it is a poor measure of valuation quality” (Damodaran 2010, p.13).

2.1. Discounted Cash Flow Method

Regarding the Discounted Cash Flow (DCF) methodology, the author Damodaran (2010) describes that the value of an asset is a function of the expected cash flows on that asset. This methodology stands as the prevailing and widely employed approach in corporate finance, capital markets, and the realms of mergers and acquisitions due to its recognized accuracy and extensive usage (Luehrman, 1998; Bösecke, 2009; Fernandez, 2013; Stowe,

2007; Koller, 2015).

The projection of an investment's future cash flows, coupled with their adjustment to present value through discounting, is a process designed to acknowledge the temporal devaluation of money. The economic rationale for employing DCF valuation lies in the firm's future cash flows to compensate investors for the temporal depreciation of currency (Stowe, 2007). In line with Damodaran's (2015) perspective, this methodology posits that the value of an asset can be determined as the present value of its anticipated future cash flows, as articulated in the following formula:

$$Value = \sum_n \frac{CF_t}{(1+r)^t} \quad (1)$$

(summation sign should be presented before the division and t = 1 up to n)

In this context, n represents the number of years projected for this asset, CF_t stands for the cash flow during period t, and r signifies the implied discount rate.

Different valuation models attempt to measure equity and firm value, but those models reveal a reliance on subjective inputs, fostering potential disagreements (Damodaran 2015). In this context, according to Damodaran (2012), there are four distinct approaches to valuation. The discounted cash flow method correlates an asset's value with the present value of anticipated future cash flows, while liquidation and accounting valuation assess a firm's current assets values often commencing with accounting estimates or book value. Relative valuation evaluates an asset's worth by analyzing pricing concerning comparable assets and key variables like earnings or book value. The fourth approach, contingent claim valuation, employs option pricing models, categorized under real options.

2.2. Free Cash Flow to the Firm (FCFF)

Free cash flow to the firm (FCFF) is a crucial metric representing the cash available to a company's capital providers after settling all operational expenses, including taxes, and fulfilling essential investments in working and fixed capital such as inventory and equipment. FCFF model outcome also subtracts capital expenditures from the cash generated through operations.

This model's main advantage according to Damodaran (2006), is robust enough to maintain its relevance even when the assumption of financing irrelevance is relaxed. Simply put, the firm's value remains grounded in the present value of after-tax operating cash flows. Indeed, this method disregards the company's capital structure, which is an advantage because when the leverage of the firm changes over time we also need to consider estimating

new debt issues that can become confusing and lead to errors in estimating the free cash flow (Damodaran, 2012). Hence, the FCFF is calculated as follows:

$$\begin{aligned} &Free\ Cash\ Flow\ to\ the\ firm \\ &\quad = After-tax\ Operating\ Income - (Capital\ Expenditures - Depreciation) \\ &\quad - Change\ in\ non-cash\ Working\ Capital \end{aligned} \tag{2}$$

The Free Cash Flow to the Firm (FCFF) model estimation presupposes projections grounded in a moment when the company's operations stabilize. The forecast of Free Cash Flows is delineated into two distinct periods: the initial period during which comprehensive projections are made for key variables described in the previous formula. The subsequent period assumes that cash flows will perpetually grow to capture the perpetuity value of the company, denoting the value of cash flows extending beyond the explicit forecasted period. According to Damodaran (2015), the continuity value, also known as the Terminal value, can be computed as follows:

$$Terminal\ Value = \frac{FCFF_{n+1}}{WACC - g} \tag{3}$$

In this context, $FCFF_{n+1}$ represents Free Cash Flow to the Firm of the Year following the Last year of the Explicit Forecasted Period. WACC stands for Weighted Average Cost of Capital and g signifies the Perpetual Growth Rate of Cash Flows, after the Explicit Forecast Period.

After knowing how to calculate the FCFF and the terminal value we can arrive at the Enterprise Value (EV), which is calculated by discounting the Explicit Forecast Period cash flows and Terminal value at the Weighted Average Cost of Capital:

$$Enterprise\ Value = \sum_{t=1}^{n} \frac{FCFF_t}{(1+WACC)^t} + \frac{Terminal\ Value}{(1+WACC)^n} \tag{4}$$

Moreover, considering the previously mentioned factor that this approach centers on a cash flow before accounting for debt expenses, the valuation of these cash flows is discounted using the weighted average cost of capital, WACC (Pinto et al., 2020).

2.3. Weighted Average Cost of Capital (WACC)

The discount rate, often considered the supplier's capital opportunity (Stowe, 2007), is the

preferred rate of return for an investment. Koller et al. (2015) argue that WACC, or Weighted Average Cost of Capital, serves as the expected rate of return that investors anticipate when making investments in the company. Consequently, it is considered the suitable discount rate for valuing free cash flow. The formula of WACC is the following:

$$WACC = \big(Kd * (1 - t)\big) * \left(\frac{D}{(D + E)}\right) * Ke * \left(\frac{E}{(D + E)}\right) \quad (5)$$

In which: Kd is the cost of debt, Ke is the cost of equity, D is the market value of debt, E is the market of value of equity and t is the marginal tax rate.

It is crucial to highlight that the tax advantages associated with debt, such as tax shields, are accounted for in WACC Modigliani and Miller (1958). In this context, Fernandez (2011, p. 5) states that "the WACC is neither a cost nor a required return, but a weighted average of a cost and a required return. To refer to WACC as cost of capital can be misleading because is not a cost".

2.4. Cost of Debt (Kd)

The cost of debt, a fundamental aspect of capital costs, embodies the expenses associated with a company obtaining a bank loan or issuing a bond, as outlined by Damodaran (2008). This cost is determined by combining two crucial variables: the risk-free rate and the default spread, with an elevated risk-free rate and a higher default spread leading to an increased cost of debt (Damodaran, 2002).

Denoted as kd, the cost of debt signifies the effective rate paid by a company to its debt holders, typically calculated on an after-tax basis. This calculation considers the tax-deductible nature of interest payments, providing a tax shield for the company. Various methods for computing kd exist, contingent on the company's characteristics (Koller et al., 2015). The computation of the cost of debt is the following:

$$After - tax\ cost\ of\ debt = \ Pre - Tax\ cost\ of\ debt * (1 - Tax\ rate) \quad (6)$$

In the case of analyzing a company with publicly traded debt, the cost of debt relies on the average yield to maturity (YTM) of its outstanding debt. For precision, Koller et al. (2015) argue that using the YTM of liquid, option-free, and long-term debt, is particularly suitable for companies with a straightforward capital structure without multiple tranches. If a company does not consistently issue public debt, analysts can derive a more accurate YTM estimate by considering the company's debt rating, ensuring a transparent estimation. In situations

involving non-listed firms, Damodaran (2001) proposes a method for estimating the cost of debt by calculating the interest coverage ratio, focusing on recently borrowed funds.

2.5. Cost of Equity (Ke)

Koller et al. (2015) Define that the equity cost is established by assessing the anticipated market portfolio return, considering the risk associated with the evaluated company. Assessing operational risk involves utilizing the unlevered beta and factoring in the proportion of equity within the firm's capital structure. Numerous studies, including the research conducted by Berk and DeMarzo in 2017, have demonstrated the widespread recognition and extensive usage of the Capital Asset Pricing Model (CAPM) as the primary model for estimating the cost of equity. This model, which assesses a stock's risk concerning the broader market, will be the focal point of our discussion. The cost of equity is determined by incorporating several key components: the risk-free rate (Rf), the risk premium (the difference between the market expected return and the risk-free rate), the slope coefficient (beta of the stock, βL), and the country risk premium.

$$Ke = Rf + \beta L * \{[E(Rm) - Rf] + CRP\} \quad (7)$$

This framework relies on three fundamental assumptions: the absence of taxes and transaction costs, coupled with investors' capacity to lend at a risk-free interest rate; the rational investor's objective is to optimize their investment; and the market is characterized by efficiency, devoid of any asymmetry in information (Berk et al., 2016).

The risk-free asset, defined as an asset devoid of default risk, is commonly represented by the yield on a government debt instrument deemed default-free. The expected market risk premium, denoted as $E(Rm) - Rf$, signifies the premium investors demand for engaging in a market portfolio relative to the risk-free rate. This model's sole company-specific element is its equity beta (βi), or the levered beta, determined by both the company's financial leverage and business risk. The equity beta illustrates how a stock's return correlates with its market movement (Goedhart et al., 2010).

Regarding equity beta, stocks riskier than the market portfolio possess a beta exceeding 1, those less risky have a beta less than 1, and riskless stocks should exhibit a beta of zero (Damodaran, 2002). Despite being a widely trusted model for estimating the cost of equity, the CAPM faces theoretical challenges due to its simplifying assumptions, making valid tests challenging and leading to potential model invalidations (Fama & French, 2004).

Moreover, Damodaran (2002) outlines an alternative method to estimate the levered beta, commonly employed for non-publicly traded companies known as the pure-play method. This

method involves identifying comparable firms with similar business risks and adjusting for differences in financial leverage. The unlevered beta of comparable companies is "unlevered," assuming zero debt risk, and then relevered to account for the target company's capital structure, yielding an estimate for its equity beta.

In this context, Damodaran (2003) emphasizes that a company's unlevered beta (βU) is influenced by product cyclicality, discretionary nature, and operating leverage. The levered beta (βL), representing equity investment risk, is defined by the assumed financial leverage risk.

$$\beta L = \beta U * (1 + (1 - t) * (\frac{D}{E}) \quad (8)$$

The formula to calculate levered beta incorporates the unlevered beta, corporate tax rate, and debt-to-equity ratio.

2.6. Free Cash Flow to Equity (FCFE)

The Free Cash Flow to Equity (FCFE) assesses equity value through the following method, as articulated by Fernandez (2019):

$$Equity\ Value\ (EQV) = \sum_{t=1}^{n} \frac{FCFE^t}{(1+ke)^t} + \frac{Terminal\ Value}{(1+ke)^n} \quad (9)$$

FCFE represents the cash remaining for shareholders after addressing fixed asset investments, working capital needs, and financial charges equivalent to a portion of the debt's principal. In addition, FCFE can be derived from Free Cash Flow to the Firm (FCFF) by adjusting for after-tax interest and principal payments to debt holders and adding new debt.

Given that FCFE is distributed exclusively to shareholders, its value is discounted at the cost of equity (ke). Although the primary concept is that FCFE equals the value of cash flows paid to shareholders in the form of dividends, this does not imply that firms distribute all this value due to considerations such as the volatility of earnings compared to dividends and the strategic retention of extra cash for future capital costs (Damodaran, 2012).

Fernandez (2013) argues about the concept of Equity Cash Flow (ECF) by deducting after-tax principal and interest payments from FCF and including new debt. Consequently, the ECF is the amount of cash flow available to stockholders after taxes, reinvestment requirements, and satisfied debt cash flows, expressed as:

$$ECF = FCF - \big(Interest\ payments \times (1-t)\big) - principal\ repayments + new\ debt \quad (10)$$

As per Fernandez (2013), the company's equity value is discounted by applying the cost of equity as the appropriate discount rate, characterizing the expected yield required by the firm's shareholders. In the same line, Damodaran (2011) underscores a crucial differentiation, emphasizing that FCFE takes place after the consideration of debt cash flows.

2.7. Dividend Discount Model ("DDM")

One of the reasons why an investor acquires a company's stock is the willingness to share the profits of this business by receiving dividends throughout the investment horizon. Thinking the fundamental connection between the present value of expected dividends in perpetuity, the stock's value is formulated using Damodaran's (2006) approach:

$$Value\ of\ a\ Stock = \sum_{t=1}^{\infty} \frac{E(DPS_t)}{(1+ke)^t} \quad (11)$$

(this summation sign is right! That is the way to do it!)

In which $E(DPS_t)$ denotes the projected dividend per share for period t, and ke is the attributed cost of equity. Given the uncertainty in forecasting dividends forever, alternative methodologies have been progressed over time.

One methodology that stands out is the Gordon growth model, a explicit approach linking a firm's value to projected dividends for the upcoming year, the firm's cost of equity, and the expected perpetual dividend growth rate (Damodaran, 2006):

$$Value\ of\ a\ Stock = \frac{E(DPS_1)}{ke - g} \quad (12)$$

In which $E(DPS_1)$ represents projected dividends for the next year, ke is the required rate of return expected by equity holders, and g is the perpetual dividend growth rate.

Moreover, in alignment with the information provided earlier, the Dividend Discount Model (DDM) utilizes projected dividends as a stand-in for cash flows, ultimately sum a terminal value discounted by the cost of equity. It is recognized as the simplest and oldest DCF method, valuing a stock conservatively by solely considering cash flows distributed to stockholders Damodaran (2012):

$$Equity\ Value = \sum_{t=1}^{n} \frac{D_t}{(1+ke)^t} + \frac{Terminal\ Value}{(1+ke)^n} \quad (13)$$

Despite its advantages, the Dividend Discount Model (DDM) faces assessment due to

potential inaccuracies arising from assumptions such as the required rate of return, the subjectivity of the long-term growth rate, and the no-constant relationship between profits and dividends. Additionally, it is criticized for overlooking the impact of stock repurchases on the value returned to shareholders.

2.8. Economic Value Added ("EVA")

The Economic Value Added (EVA), is a variant that has gained widespread recognition thanks to its promotion by the consulting firm Stern Stewart. EVA is determined by multiplying the excess return derived from an investment or a series of investments by the capital invested in those specific ventures. This methodology of valuation relies on the following primary inputs: the Return on Invested Capital (ROIC), the cost of capital associated with those particular investments, and the invested capital Damodaran, (2002):

$$EVA = (ROIC - Cost\ of\ \ Capital) \times Invested\ Capital \tag{14}$$

The EVA methodology follows the principles discussed previously about the Discounted Cash Flow (DCF), utilizing the present value rule to determine the firm's value. In employing this approach, the focus shifts to utilizing book values, reflecting the capital allocated to the company's current assets. In this method, as emphasized by Mota et al. (2012), the EVA model evaluates whether the company is generating or eroding value by measuring the disparity between profitability and the cost of invested capital. The EVA equation is expressed as:

$$EVA = NOPLAT - Invested\ Capital\ X\ WACC = (ROIC - WACC)\ \text{X Invested capital} \tag{15}$$

The Market Value Added ("MVA"), evaluating not only the past value generation but also the anticipated future worth, is intricately linked to EVA, as indicated by the authors. The formulation for MVA is delineated as follows:

$$MVA = \sum_{t=1}^{n} \frac{EVA_t}{(1+ke)^t} + \frac{Terminal\ Value_n}{(1+ke)^n} \tag{16}$$

Nevertheless, a notable disadvantage of this approach to firm valuation is its reliance on book values rather than market values. This restriction stems from the challenge of estimating the market value of all the company's existing assets, resulting in an understatement of the cost of capital and consequently overstatement of EVA.

2.9. Relative Valuation (Multiples)

Relative valuation relies on market multiples, if stock prices summarize the available data in an efficient market. This method involves estimating an asset's price compared to peers, with the initial challenge being the selection of a relevant peer group a critical and intricate aspect of the technique.

The perspective of Multiple Valuation involves determining a firm's implied value by averaging common variables, often referred to as multiples, within a peer group. This peer group comprises comparable firms operating in the same industry, characterized by comparable risk and growth potential, as outlined by Damodaran (2006).

Forming a peer group is a process that can be qualified by considering the firm's possessions, including its industry association. This ensures the conception of a peer group with comparable risk profiles and similar traits such as capital structure, size, growth, risks, diversification levels, and financing sources. Otherwise, statistical approaches like regression inference may be used, integrating theoretical drivers of growth, risk, and profitability into the analysis. However, exercising caution is essential due to the potential for abnormal products arising from the non-normal distribution of multiples' values and the correlation of explanatory variables.

The following step involves choosing suitable multiples, consistent by a common variable (earnings, book value, or revenues) to assess a company's performance. Forward-looking multiples, utilizing next year’s estimates, are supposedly more predictive. The choice of multiples can significantly impact estimations, with Damodaran (2006) advising sector-specific multiples for a conventional approach.

After concluding the peer group and picking multiples, computing the median or average value is essential. This value is then multiplied by the chosen multiple’s indicator, similarly net income in the case of P/E.

According to Koller et al. (2015), the fundamental belief is that similar assets should have similar prices, forming the basis for relative valuation. The projected performance of comparable firms guides this process, deducing the target company's value based on market multiples attributed to its peers.

Multiple analysis, as per Koller et al. (2015), can uncover performance gaps, validate cash flow projections, and optimize value. However, drawbacks, including challenges in evaluating distinct firms and susceptibility to market errors, exist. Fernandez (2019) suggests using multiples as a secondary valuation approach, mitigating these limitations.

Fernandez (2002) categorizes multiples into three main types, considering company value and capitalization. Revenue multiples, like EV/sales, are valuable for firms with unpredictable or negative earnings. EV/EBITA, influenced by key inputs, is favored for comparing

organizations with similar long-term growth expectations and ROIC.

P/E multiples, preferred by investors, incorporate market perceptions of growth potential. The book value multiple, P/BV, assesses equity's market capitalization relative to adjusted book values, offering stability and suitability for historical analysis.

While relative valuation offers speed and accuracy, challenges exist, such as varied investor expectations and potentially conflicting conclusions from different multiples. Analysts must carefully consider factors driving growth and return on capital to avoid misinterpretations.

3. Macroeconomic Analysis

In 2023, the global economy continued to grapple with the repercussions of past crises, most notably the COVID-19 pandemic and the ongoing Russia-Ukraine conflict. Inflation remained a pressing concern, driven by persistent supply chain disruptions, elevated energy costs, and volatile food prices. The war in Ukraine maintained its grip on global energy and food markets, causing significant price fluctuations and contributing to broader economic instability.

Global financial conditions have contracted due to the decision to increase nominal interest rates that most central banks took to combat the high inflationary pressures. Consequently, equity markets in a great part of the world have decreased significantly, bond yields in nominal terms have increased, the United States dollar continues to appreciate and risk appetite is reducing. In parallel, corporate bond spreads have increased and capital outflows from emerging markets have escalated. The differential between the 10Y and the 2Y treasury bond yields has turned negative in the United States which only happened before followed by cyclical downturns. High interest rates are negatively impacting the housing market with mortgage lending and house sales experiencing a steep decline globally followed by house prices gradually around the world.

Another financial indicator supporting 2023’s poor financial outlook is the global tightening of labor market conditions worldwide. In a lot of the OECD countries, unemployment is low and the ratio of job seekers to job vacancies is historically low. Notwithstanding, the pace of job growth in Europe and the United States has slowed down and vacancies started to decline globally with some unemployment rates reversing in some geographies. Overall, 2023 presented a challenging and uncertain economic environment, with policymakers and businesses navigating a complex interplay of factors that hindered a more robust global recovery.

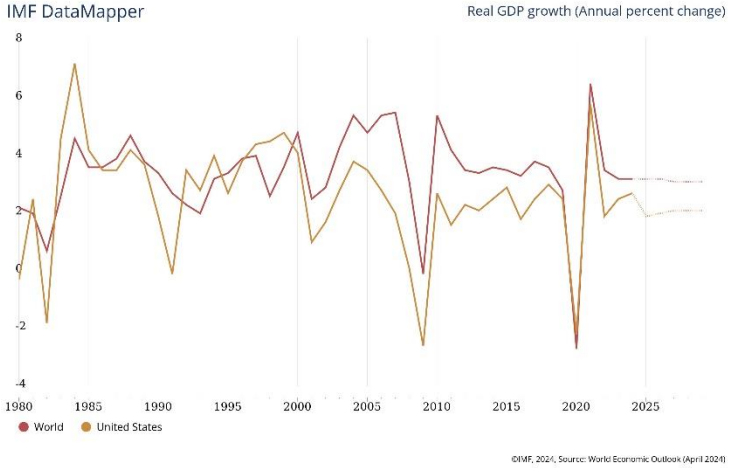
Despite the challenges mentioned before the projected global GDP growth rate is positive, around 3.2% per year during the analyzed period. This suggests that the economy is expanding, which can benefit businesses, jobs, and personal income. All these factors can

lead to an increase in private consumption, positively affecting the company's performance. It is also notable that this trend is being followed by the United States of America (US), which similarly presents positive GDP growth rates, ranging between 2.7% and 2.1% per year.

The US economy plays a vital role in the business of Electronic Arts, Inc. Aside from being the location of the company's headquarters, it is also the region where 58% of EA's revenues came from in the fiscal year 2023.

GDP Growth: 2018-2028: due to the COVID-19 pandemic US saw its GDP contract by 3.4% in 2020 due to the spread of the coronavirus and the consequent global lockdown. In 2021 GDP has rebounded to 5.7% for the US broadly in line with the rest of the world at 6%. The growth of US GDP in 2024 is expected to stand at 2,7%, which is below the expected world GDP growth of 3.2% mainly due to the inflationary pressures hindering consumer confidence and consequent spending levels. GDP in the United States is not expected to reach pre-pandemic growth levels until 2028.

Figure 1: Real GDP growth (annual percentage change)



Source: International Monetary Fund

In 2024, the inflation rate in the United States is expected to be 4.1%, following a decrease to 3.5% in 2023 after a significant rise to 8.1% in 2022 from 4.7% in 2021. This trajectory reflects the lingering effects of earlier economic disruptions. The International Monetary Fund (IMF) continues to recommend that monetary policy stays on its current path to restore price stability, while fiscal policy should aim to ease cost-of-living pressures while maintaining a restrictive stance consistent with monetary measures. By 2025, it is anticipated that the impacts of the pandemic and the geopolitical conflict will have subsided, though global inflation is predicted to remain higher than the U.S. inflation rate through 2028, indicating persistent economic challenges on the international front even as specific crises diminish.

Figure 2: Inflation rate, average consumer prices (annual percentage change)

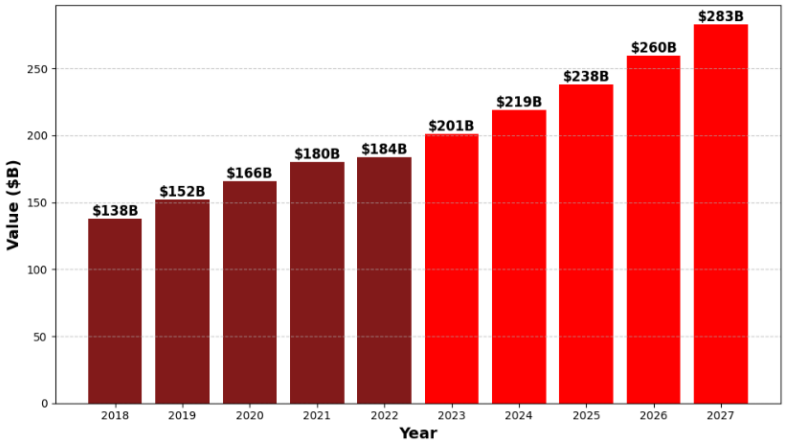
Source: International Monetary Fund

3.1. Industry Overview

The gaming industry, comprising video games' development, marketing, and monetization, stands as a dominant force in global entertainment. Video games are accessible across many platforms, including consoles, PCs, and mobile devices, reaching an extensive and diverse audience. According to the Entertainment Software Association (ESA), video games are now played in 85% of American households, underscoring their ubiquitous appeal and integration into daily life.

The COVID-19 pandemic profoundly impacted the gaming industry, accelerating several key trends. The demand for interactive entertainment soared during the pandemic, with global games market revenue reaching $180 billion by the end of 2021. This growth trajectory has continued, with 2023 seeing the market expand to $200 billion, fueled by increased digital game downloads, recurring revenue within the game themselves in which players spend money to obtain some benefit, and in-person events that emerged as a trend in many different games.

Figure 3: Game Industry Revenues



Source: Bloomberg

Digital distribution has become the primary mode of game sales, a trend that was accelerated by pandemic-related restrictions. Consumers increasingly favor downloading games from online stores, appreciating the convenience and immediacy of digital content. Cloud gaming services have gained significant traction, offering high-quality gaming experiences without the need for expensive hardware.

Esports, or competitive gaming, has firmly established itself as a mainstream entertainment phenomenon. With traditional sports resuming post-pandemic, esports have retained its popularity, drawing in millions of viewers for major tournaments and leagues across different types of games. Streaming platforms like Twitch and YouTube Gaming have become central hubs for esports content, with record numbers of viewers and content creators solidifying the prominence of competitive gaming, but in many countries, Esports also reached the television sphere.

The gaming industry can be divided into three main segments: console gaming, PC gaming, and mobile gaming. Console gaming, with systems like the PlayStation 5, Xbox Series X, and Nintendo Switch, remains a robust segment, driven by exclusive titles and next-generation hardware capabilities. PC gaming continues to attract enthusiasts with its versatility innovative graphics and high-performance gaming experience. Mobile gaming, however, remains the fastest-growing segment, projected to generate $100 billion in revenue by the end of 2024. With phones becoming more and more modern and with better capacity to play games combined with the widespread use of smartphones and the accessibility of mobile games have made this segment a dominant force in the industry.

Virtual reality (VR) and augmented reality (AR) technologies have also made significant strides, offering immersive experiences that extend beyond traditional gaming. Devices like the Oculus Quest 3 and the upcoming Apple Vision Pro are set to revolutionize how players interact with virtual environments. The advancement and integration of VR and AR technologies into mainstream gaming are expected to drive further innovation and growth.

According to the Entertainment Software Association (ESA), The average gamer is 34 years old and 73% are age 18 or older. In terms of gender distribution, males represent a slightly larger portion of the gaming population, accounting for 59%, while females make up 41%. Additionally, gamers perceive video games as offering better value for money compared to other traditional forms of entertainment like music and movies. This suggests that the gaming industry has significant potential for growth in both age and gender.

Looking ahead, the gaming industry's future is incredibly promising, with continuous technological advancements and increasing consumer engagement driving sustained growth. Market research firm Grand View Research projects the global gaming market will reach $240 billion by 2025, expanding 9% from 2024 to 2025. This growth is propelled by ongoing

innovations in game development, the expansion of digital and mobile platforms, and the rising popularity of esports and streaming services. The gaming industry's adaptability and capacity for innovation ensure its continued leadership in global entertainment.

4. EA Sports Inc.

4.1. Company History

Like many successful enterprises, EA Sports began with a vision to address a specific need in the market. Originally founded as a niche gaming studio specializing in interactive sports simulations, EA Sports emerged in 1991 under the leadership of Andrew Wilson, William "Trip" Hawkins, and Pat Marriott. Their initial venture, titled "Triple Play Baseball," laid the groundwork for what would become a pioneering force in the gaming industry.

Recognizing limitations in existing sports gaming platforms, particularly in authenticity and user engagement, EA Sports pivoted towards developing its proprietary gaming engine. By 1993, the company rebranded to EA Sports, aiming to redefine the sports gaming experience. This strategic shift marked the beginning of EA Sports' ascendancy in the digital entertainment realm.

EA Sports swiftly expanded its influence within the gaming ecosystem. In 2004, the company launched its innovative "EA Sports Online" platform, pioneering online multiplayer capabilities across its popular titles. This move revolutionized how gamers interacted globally, fostering a vibrant community, and enhancing gameplay dynamics.

The evolution continued in 2008 with the introduction of EA Sports' dynamic motion capture technology, enhancing realism and player immersion. This breakthrough not only elevated gaming standards but also solidified EA Sports' reputation for innovation within the competitive gaming landscape.

A pivotal milestone arrived in 2012 with the integration of EA Sports' titles into mobile platforms, including iOS and Android. This strategic move democratized access to EA Sports' gaming experiences, empowering users to engage seamlessly across multiple devices.

Undoubtedly, one of EA Sports' transformative innovations was the launch of its proprietary Ultimate Team mode in 2009. This groundbreaking feature revolutionized sports gaming by combining real-world player acquisitions with digital gameplay strategies, fostering an unprecedented level of player engagement and revenue generation.

In 2016, EA Sports unveiled its state-of-the-art Frostbite engine, setting new benchmarks for graphics and gameplay realism. This technological leap underscored EA Sports' commitment to pushing boundaries and delivering unparalleled gaming experiences across its diverse portfolio.

Beyond technological advancements, EA Sports made significant strides in community integration and accessibility. The implementation of EA Access in 2014 democratized gaming subscriptions, offering players affordable access to a vast library of EA Sports titles.

Furthermore, EA Sports' strategic partnerships with leading sports leagues and organizations bolstered its credibility and global reach. Collaborations with FIFA, NFL, NHL, and UFC amplified brand visibility and enriched gaming content, resonating with millions of sports enthusiasts worldwide.

In 2023 EA lost the FIFA License, now the football gaming is called EA FC, this movement can open space for new companies to enter into the football gaming industry and also other strategic partnerships can be in Danger.

Today, EA Sports stands as a cornerstone of the gaming industry, with a robust portfolio of acclaimed franchises and a global user base. With over 30 years of innovation and leadership, EA Sports continues to shape the future of interactive sports entertainment, reaffirming its commitment to excellence and player-centric experiences in 2024.

4.2. Business Model

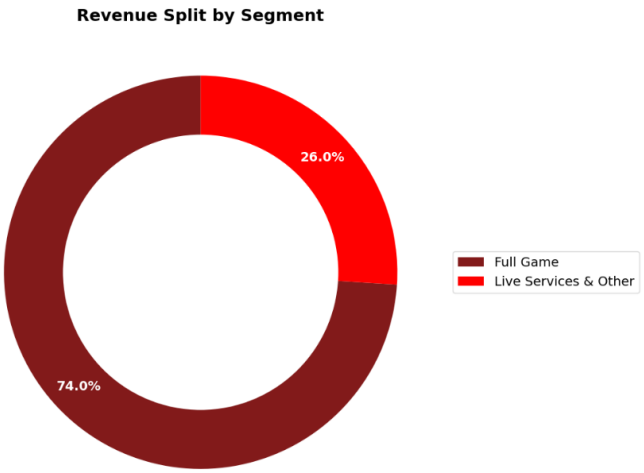
EA Sports is a leading global entity in the video game industry, dedicated to creating high-quality sports gaming experiences. With a commitment to innovation and realism, EA Sports develops, markets, and operates a wide range of sports titles enjoyed by millions of players around the world. The company's goal is to bring the thrill of sports to life through immersive and engaging gameplay.

EA Sports offers a robust platform that provides tools and services designed for reliability and excellence, ensuring a seamless gaming experience for users. Whether it is on console, PC, or mobile devices, EA Sports games deliver unparalleled excitement and authenticity. By continually leveraging new technological advancements in graphics, artificial intelligence, and online connectivity, EA Sports enhances its games to offer the most realistic and captivating sports simulations available.

EA Sports generates revenue through game sales, “Full game” purchases, and subscription services “Live services”. These revenue streams are bolstered by the company's dedication to creating additional content and features that enhance the player experience, keeping gamers engaged and invested in their favorite sports titles. As the digital landscape evolves, EA Sports remains at the forefront, constantly pushing the boundaries of what's possible in the world of sports gaming.

As of fiscal year-end-2023, total revenue stood at USD 7 426 million and was split as follows:

Figure 4: Revenue Split by Segment



Source: Elaborated by the Author, Electronic Sports Inc.

The main revenue source is Full Game Solutions, representing 74% of total revenue, or USD 5,489 million. The remaining revenue comes from Live Services & Other, which stands at USD 1,937 million, or 26% of total revenue. However, in 2019, the revenue profile was quite different. Live Services were a bigger part of revenue, accounting for 45% of total revenue. Since 2021, the split of revenue by segment has stabilized, with Full Game Solutions consistently averaging a 72% share.

4.2.1 Live Services

EA Sports offers several key subscription plans catering to different types of gamers:

a) **EA Play Basic starting from USD 5.99 a month**: This subscription plan includes access to a collection of EA's fan-favorite series and top titles, early access to select new releases, and exclusive in-game rewards. Recommended for casual gamers or those new to EA titles.

b) **EA Play Pro starting from USD 16.99 a month**: This subscription model provides unlimited access to EA's latest titles, exclusive member-only content, and early trials of upcoming games. It's ideal for avid gamers who want the best that EA has to offer.

Most subscribers opt for the EA Play Basic plan, but a significant portion of EA Sports' revenue is driven by EA Play Pro subscribers who are more engaged and typically spend more on in-game purchases.

According to EA Sports' annual report, retention rates are also higher for EA Play Pro. All EA Sports subscription plans typically have a monthly term, but those who wish to sign up for EA Play Pro can choose annual or multi-annual subscription plans. The subscription plan is automatically renewed unless notification of service cancellation is provided. All subscription payments are non-refundable, invoiced at the beginning of the subscription period, and

processed directly by EA Sports.

Last year, EA Sports introduced new features in its subscription plans, including enhanced cross-platform play and additional exclusive content, to provide greater value to subscribers and adapt to the evolving gaming landscape.

4.2.2 Full Game

Full game sales form the foundation of EA Sports' revenue model, offering comprehensive gaming experiences that draw players into the EA ecosystem. Revenues in this segment come from the following:

a) **Initial Game Purchases**: Sales of full game titles, available both digitally and physically, provide players with access to the complete gaming experience right out of the box.

b) **Special Editions and Bundles**: Higher-priced editions of games that include additional content such as season passes, bonus in-game items, and early access privileges.

c) **Pre-Orders**: Advance sales of upcoming titles, often incentivized with exclusive content or early access to the game.

d) **Downloadable Content (DLC)**: Additional content packs that expand the base game with new missions, characters, and storylines, enhancing the overall experience.

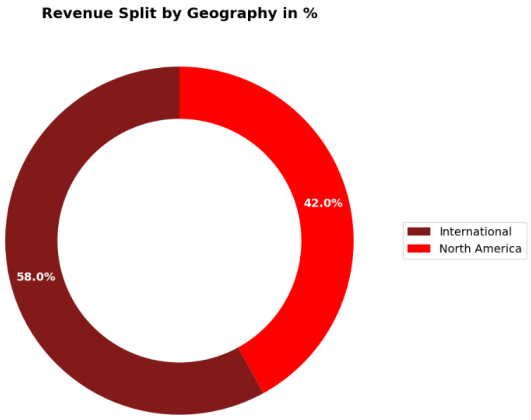
e) **Expansion Packs**: Major updates that significantly extend the life and scope of a game, often adding entirely new areas, gameplay mechanics, and story arcs.

In conclusion, full game sales are critical to EA Sports' business, driving initial engagement and establishing a base of players who are likely to invest further in live services. By offering a variety of purchasing options and continuous content updates, EA Sports aims to maintain strong player interest and sustain its core business.

4.3. Revenue Split by Geography

EA reports the revenue breakdown split into international and North America. The turnover split in 2023 shows a notable concentration in North America, which accounts for 48% of total revenue, equivalent to USD 3,151 billion. This heavy reliance on the North American market underscores EA's strategic focus on leveraging the region's robust consumer spending and gaming culture.

Figure 5: Revenue Split by Geography

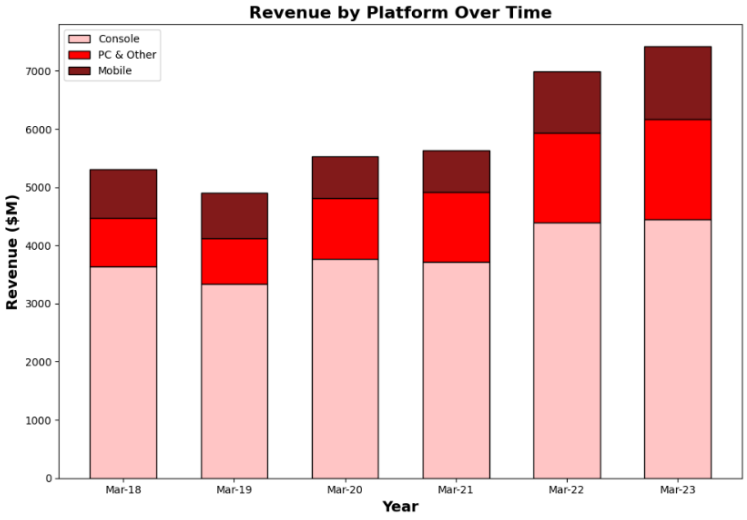


Source: Elaborated by the Author, Electronic Sports Inc.

4.4. Financial Performance

From 2018 to 2023, EA's total year-end revenue increased from USD 5,305 billion to USD 7,426 billion, reflecting a compound annual growth rate (CAGR) of 7.0%. The PC platform segment experienced the highest growth, with a CAGR of 15.4%, while revenue from the Mobile platform grew at a CAGR of 8.7%. Both growth rates surpassed the revenue growth from the console platform, which had a CAGR of 4.1%.

Figure 6: Revenue by Platform Over Time



Source: Elaborated by the Author, Electronic Sports Inc.

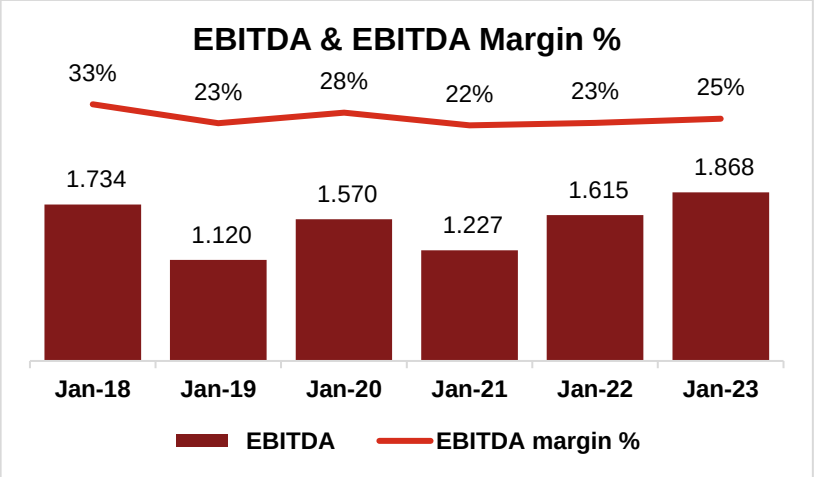
In 2023, Electronic Arts saw a reduction in its cost of revenue by approximately 3.60%, decreasing from USD 1.859 billion in 2022 to USD 1.792 billion. The decline can be attributed to several strategic and operational factors. EA focused on improving operational efficiencies and cost management practices, including better allocation of resources and optimizing server and hosting costs. The company’s shift towards digital sales and live services also played a

significant role, lowering expenses related to manufacturing, packaging, and logistics. Furthermore, EA achieved a reduction in licensing fees and royalties paid to third-party developers and licensors. Notably, EA's decision to discontinue paying royalties to FIFA could lead to a dramatic change in this figure.

In fiscal year 2023, the operating expenses demonstrated a stable scenario across various categories. Research and Development expenses continued their upward trajectory, increasing by USD 142 million or 6% compared to fiscal year 2022, reaching USD 2,328 million. Despite the growth in absolute value, looking at Research and Development in percentage of revenue the expense is stable regarding last fiscal year.

On the other hand, General and Administrative expenses also expanded, rising by 8% to USD 727 million, increasing in percentage of net revenue representing now to 9.8%. This increase was driven by elevated costs associated with contracted services, particularly legal expenses, and a continued uptick in personnel-related expenditures within this department. Meanwhile, Sales and Marketing expenses saw a divergent trend, in the percentage of net revenue this expense declined from 13.7% in the fiscal year 2022 to 13.2% in the fiscal year 2023, but in absolute terms, Sales and Marketing increased by USD 17 million or 2% to USD 978 million in the fiscal year 2023.

Figure 7: EBITDA and EBITDA Margin Over Time



Source: Elaborated by the Author, Electronic Sports Inc.

Electronic Arts (EA) has exhibited variability in its EBITDA margin over recent fiscal periods, commencing at 33% in 2018 and subsequently declining to 23% by 2022, indicative of escalating operational expenditures relative to revenue. However, a modest recovery to 25% was observed in 2023.

4.5. Stock Performance

EA Sports has been a prominent player in the gaming industry, known for its popular sports simulation titles. Listed on the stock market since September 1989, EA Sports has been a significant contributor to the interactive entertainment sector. In June 2018, the company reached a market capitalization peak of USD 43.2 billion. However, by the end of that year, the share price had declined, and the year-end market capitalization was USD 23.8 billion. Since then, the share price has been recovering but has yet to reach new all-time highs.

The global spread of COVID-19 prompted governments worldwide to implement stringent measures such as lockdowns and social distancing, profoundly impacting various industries, including gaming. EA Sports emerged as a pivotal player in this digital shift, providing immersive gaming experiences that resonated with consumers seeking entertainment from home. Recognizing the growing digital trends in entertainment, investors turned to EA Sports stock as a strategic investment in the evolving gaming sector.

Figure 8: Stock Price Evolution and Target Prices

Source: Elaborated by the Author, Electronic Sports Inc, Capital IQ.

4.6. Dividend Policy

Since 2020, Electronic Arts (EA) has initiated a dividend payment policy, marking a shift in its approach towards returning value to shareholders. The dividends paid since then have been modest, reflecting EA's strategic balance between rewarding shareholders and maintaining financial flexibility for growth initiatives such as game development and acquisitions. In the last 4 years, EA had different dividend policies, in the last twelve months the company has not paid any, aligning with its conservative approach to capital allocation within the dynamic gaming industry. This cautious dividend policy underscores EA's

commitment to balancing shareholder returns with reinvestment in its core business and strategic opportunities.

4.7. Shareholder Structure

As the year 2023 ended, the market capitalization of Electronic Arts (EA Sports) stood at USD 36.6 billion, represented by 270 million shares outstanding with a market value of USD 136.81 each. The main shareholders of EA Sports are as follows: Institutional investors (70%), individual investors (5%), and public and other investors (25%). Total company employee stock, strategic corporate investors, untraded shares, and other strategic investors result in a total of 40 million shares excluded from the float. The main individual shareholder is Andrew Wilson, the CEO of EA Sports, with 2.5% of the total 5% stock individuals hold. The share split held by the public and other investors is not disclosed. The top 10 main institutional investor shareholders' participations stand as follows: The Vanguard Group (8.5%); BlackRock Inc. (7.9%); State Street Corporation (5.8%); Fidelity Management & Research (5.0%); T. Rowe Price Group Inc. (4.2%); Capital Group Companies (4.0%); Wellington Management Group (3.6%); Northern Trust Corporation (3.0%); Geode Capital Management (2.7%); and Morgan Stanley Investment Management Inc. (2.3%). These top 10 shareholders represent 47% of the total institutional investor shares (70% of total shares).

4.8. Competitors

The video game industry remains highly competitive and dynamic in 2023. Entry barriers for new companies are low, allowing small developers to create successful games with minor investments if they offer innovative and entertaining gameplay. Despite this, established companies like EA, Activision Blizzard, and Take-Two Interactive continue to dominate due to their substantial resources and extensive portfolios.

Activision Blizzard continues to be a global leader in interactive entertainment, now a part of Microsoft after a significant acquisition deal. In 2023, Activision Blizzard reported a net revenue of approximately USD 8.7 billion, highlighting substantial growth compared to previous years. The company's major franchises, including Call of Duty, World of Warcraft, and Candy Crush, remain highly influential in the market. Activision Blizzard continues to pay cash dividends, with a notable increase reflecting its strong financial performance.

Take-Two Interactive has strengthened its position in the industry with its critically acclaimed franchises, including Grand Theft Auto, NBA 2K, and Red Dead Redemption. In 2023, Take-Two reported a net revenue of approximately USD 5.4 billion, reflecting growth fueled by the consistent performance of its existing titles and successful new releases. Grand Theft Auto V remains a significant revenue driver. Additionally, Take-Two is set to compete

directly with EA in the football game market. With Take-Two's recent acquisition of licenses and the development of new football titles, the rivalry between these two companies is expected to intensify in the coming years.

Steam, owned by Valve Corporation, continues to dominate the digital distribution market with over 50,000 games available and a daily active user base exceeding 25 million. The platform's vast library and robust community features contribute to its ongoing success. Recently, the release of Counter-Strike 2 (CS2) has further solidified Steam's position, drawing significant attention and engagement from both new and veteran players.

The video game industry in 2023 is marked by intense competition and rapid innovation. Activision Blizzard, Take-Two Interactive and Valve Corporation continue to perform well, with robust financial results and influential franchises. Take-Two's entry into the football game market signals an increasing rivalry with EA, which is likely to shape the industry's future competitive dynamics. Although in many cases the games are different and not necessarily in direct competition, they are within the same market, and direct competition can occur at any time in different games and subsegments.

5. Valuation

5.1. Methodology

After an extensive Literature Review, an analysis of EA’s trajectory in recent years, and an overview of the business segments where it operates, dividend policy, and other factors we conclude that Discounted Cash Flow (DCF) models—specifically the Free Cash Flow to the Firm (FCFF)—alongside Multiples valuation, represent the most appropriate models to evaluate the company. Considering the valuation models in the literature review, the DCF model emerges as the most trustworthy and widely accepted approach among financial analysts for company valuation.

5.2. Revenue

The revenue projection is based on two primary streams. The "Live Services" segment is anticipated to grow at the same rate as GDP plus inflation, increasing its share of total revenue from 73.9% in 2023 to 78.6% in 2028. Meanwhile, the "Full Game" segment is expected to grow at a rate slightly below inflation.

Although this method of revenue estimation might appear simplistic, it is necessitated by EA's lack of detailed breakdowns in terms of volume and prices. This approach helps forecast other economic concepts despite its simplicity.

On a consolidated basis, the projection results in a Compound Annual Growth Rate

(CAGR) of 4.34% over the projected period from 2023 to 2028. These projections highlight the robust potential for EA's overall revenue expansion despite the differences in growth rates between its revenue streams.

Table 1: Revenue by Composition

	<<< Historical	Projection >>>				
	Mar-23	Mar-24	Mar-25	Mar-26	Mar-27	Mar-28
Revenue by Composition						
Full Game	1.937,00	1.970	1.995	2.017	2.038	2.058
YoY % Chng	(2,8%)	1,7%	1,2%	1,1%	1,0%	1,0%
As % of Net Revenue	26,1%	25,1%	24,1%	23,1%	22,2%	21,4%
Live Services & Other	5.489,00	5.878	6.298	6.718	7.145	7.576
YoY % Chng	9,8%	7,1%	7,2%	6,7%	6,4%	6,0%
As % of Net Revenue	73,9%	74,9%	75,9%	76,9%	77,8%	78,6%
Total	**7.426**	**7.848**	**8.293**	**8.735**	**9.182**	**9.634**

Source: Elaborated by the Author, Electronic Sports Inc, Capital IQ.

5.3. Costs and Expenses

As 2018-2023 data shows, revenue costs expressed in terms of total revenue ranged between 26,9% and 24,1%. We assume that for the explicit period, the percentage of the cost of revenue in terms of total revenue is computed through the simple average of total revenues to total costs observed for the previous 6 years at 25,5%.

Besides the cost of revenues, EA also has operating expenditures (such as sales and marketing, research and development, general and administrative costs, and restructuring). Total operating costs as a percentage of total revenues are expected to from 57,9% in 2023 to 52,8% in 2028. From 2021 to 2023, the percentage of operating costs in terms of total revenue increased from 54,3% to 55,8% due to an increase in restructuring items. For the forecast, it is expected that the operating costs to substantially decrease and be positively impacted by scaled economies from 2024 to 2028 due to advancements in technology and strategic cost management. For the explicit period, the operating expenses are expected to decrease to 54,9% in 2024, 54,1% in 2025, 53,4% in 2026, and 53,8% in 2027 at 52,8% in 2028.

Sales and marketing, general and administrative costs, and restructuring are all projected to increase at the pace of inflation because these areas inherently involve expenses that are highly sensitive to economic conditions. Inflation drives up the costs of goods and services, wages, and operational expenses, all of which are critical components of these functions.

The research and development costs are projected to increase at a rate that matches the combined growth of GDP and inflation. This is due to the nature of EA’s business in software and gaming development, where continuous innovation is crucial. Additionally, other competitors are entering markets where EA previously faced little to no competition, such as EA FC (formerly FIFA). In this scenario, it is expected that EA will need to invest more heavily

in research and development to maintain its competitive position.

Table 2: Costs and Expenses

	<<< Historical					Projection >>>				
Date	**Mar-18**	**Mar-19**	**Mar-20**	**Mar-21**	**Mar-22**	**Mar-23**	**Mar-24**	**Mar-25**	**Mar-26**	**Mar-27**	**Mar-28**
Cost of Revenue	(1.277)	(1.322)	(1.369)	(1.494)	(1.859)	(1.792)	(2.001)	(2.115)	(2.227)	(2.342)	(2.457)
As % of Net Revenue	(24,1%)	(26,9%)	(24,7%)	(26,5%)	(26,6%)	(24,1%)	(25,5%)	(25,5%)	(25,5%)	(25,5%)	(25,5%)
Gross profit GAAP	**4.028**	**3.584**	**4.168**	**4.135**	**5.132**	**5.634**	**5.847**	**6.178**	**6.507**	**6.841**	**7.177**
Gross profit margin %	75,9%	73,1%	75,3%	73,5%	73,4%	75,9%	74,5%	74,5%	74,5%	74,5%	74,5%
Research & Development	1.320	1.433	1.559	1.778	2.186	2.328	2.430	2.549	2.665	2.780	2.917
As % of Net Revenue	24,9%	29,2%	28,2%	31,6%	31,3%	31,3%	31,0%	30,7%	30,5%	30,3%	30,3%
Sales & Marketing	641	702	631	689	961	978	1.005	1.027	1.049	1.070	1.123
As % of Net Revenue	12,1%	14,3%	11,4%	12,2%	13,7%	13,2%	12,8%	12,4%	12,0%	11,7%	11,7%
General & Administrative	469	460	506	592	673	727	759	792	826	862	905
As % of Net Revenue	8,8%	9,4%	9,1%	10,5%	9,6%	9,8%	9,7%	9,5%	9,5%	9,4%	9,4%
Amortization of Intangibles	-	14	22	30	183	158	165	173	181	189	196
As % of Net Revenue	0,0%	0,3%	0,4%	0,5%	2,6%	2,1%	2,1%	2,1%	2,1%	2,1%	2,0%
Restructuring	-	-	-	-	-	111	116	122	127	133	138
As % of Net Revenue	0,0%	0,0%	0,0%	0,0%	0,0%	1,5%	1,5%	1,5%	1,5%	1,4%	1,4%
Total Operating Expenses	**(2.430)**	**(2.609)**	**(2.718)**	**(3.089)**	**(4.003)**	**(4.302)**	**(4.474)**	**(4.662)**	**(4.848)**	**(5.034)**	**(5.279)**
As % of Net Revenue	(45,8%)	(53,2%)	(49,1%)	(54,9%)	(57,3%)	(57,9%)	(57,0%)	(56,2%)	(55,5%)	(54,8%)	(54,8%)

Source: Elaborated by the Author, Electronic Sports Inc, Capital IQ.

5.4. Depreciation and Amortization

Depreciation and amortization concern not only fixed assets but also intangible assets, such as intellectual property and licensing agreements. These agreements include rights to popular game franchises like FIFA (now EA Sports FC), Madden NFL, NHL, and NBA Live, which have substantial brand recognition and loyal customer bases.

The depreciation and amortization were projected based on the average disclosed useful life of each item using the straight-line depreciation method. This projection also includes the depreciation and amortization of the projected capital expenditures (capex). Historically, depreciation and amortization of the intangibles expenses have ranged from 2.6% to 7.2% of total revenues. For the explicit period, it is projected that depreciation and amortization expenses will start at 2.4% of total revenue and grow to 4.0% by 2028.

Table 3: Depreciation & Amortization

	<<< Historical					Projection >>>				
Date	**Mar-18**	**Mar-19**	**Mar-20**	**Mar-21**	**Mar-22**	**Mar-23**	**Mar-24**	**Mar-25**	**Mar-26**	**Mar-27**	**Mar-28**
Depreciation & Amortization	136	145	120	181	486	536	178	194	243	277	312
As % of Net Revenue	2,6%	3,0%	2,2%	3,2%	7,0%	7,2%	2,3%	2,3%	2,8%	3,0%	3,2%

Source: Elaborated by the Author, Electronic Sports Inc, Capital IQ.

5.5. Capital Expenditures

Capital expenditures (CAPEX) involve investments by the company in the acquisition, maintenance, or improvement of fixed assets, such as property, plant, and equipment (PPE).

Additionally, CAPEX includes investments in intangible assets, particularly through research and development initiatives aimed at repositioning these assets.

For 2024, the forecasted CAPEX is expected to be slightly higher than the amount disclosed in EA's guidance. Beyond 2024, the projection assumes that CAPEX will increase based on an inflationary adjustment, averaging 3.9% of total revenue throughout the projected period.

5.6. Working Capital

Net Working Capital is a key indicator of short-term liquidity, representing the difference between current assets (excluding cash and short-term investments) and current liabilities (excluding short-term debt). Current assets primarily consist of trade and other receivables, while current liabilities include components such as suppliers and accrued liabilities, along with other current liabilities. The working capital calculations were based on historical days outstanding (DSO, DPO) metrics. Averaging 4.0% of total revenue throughout the projected period.

5.7. Discount Rate

5.7.1 Capital Structure

The debt and equity weights are derived from the capital structure of peer companies, including EA, resulting in a debt-to-equity ratio of 3.5% and an equity-to-total-capital ratio of 96.5%.

5.7.2 Leverage Beta

Beta Calculation: Levered Beta (βL) is calculated using the Unlevered Beta (βu), capital structure, and corporate tax rate. The calculation yields an unlevered beta of 0.6. The unlevered beta was computed based on covariance, market variance, and correlation among peers, Ubisoft Entertainment SA Virtual Interactive Technologies Corp. Roblox Corporation Take-Two Interactive Software, Inc. PLAYSTUDIOS, Inc. Nintendo Co., Ltd.. The resulting levered beta average is 0.69.

5.7.3 Market Risk Premium

The market risk premium reflects the extra return demanded for investing in a risky asset,

such as EA's securities, as opposed to a safer option like the 10-year U.S. Treasury bill. It is determined using the following calculation:

$$MRP = E(Rm) - Rf(Historical) = 9{,}8\% - 4{,}57\% = 5{,}23\%$$

5.7.4 Cost of Debt

The following cost of debt was computed by dividing the annualized interest expense of 2023 and the total debt expenses observed on the same date (31/12/2023). As of Q4 2023, the annualized debt expense and debt level stood at USD 2.7 and USD 4.8 mn which resulted in a cost of Debt of 1.7%.

$$Kd = \frac{58}{1.180} = 3{,}1\%$$

5.7.5 Country Risk Premium

According to data from Damodaran, the country risk premium for North America is currently 0. Since EA's returns are primarily generated in the United States and is a US-based company, the country risk premium used in calculating the cost of equity is also set to 0.

5.7.6 Cost of Equity

Our cost of equity (Re) is equal to 7.4%, as per below:

$$Ke = Rf + \beta L * \{[E(Rm) - Rf] + CRP\} = 3{,}8\% + 0{,}69 * (5{,}2\% + 0) = 7{,}4\%$$

5.7.7 Risk Free Rate

The 10-year U.S. Treasury Bill was chosen as the proxy for a safe investment since the company primarily operates in the United States, and its financial statements are reported in U.S. dollars. The 3.8% risk-free rate used in the analysis reflects the 10-year Treasury yield observed on October 3, 2022, according to data from the Federal Reserve Bank.

5.7.8 Weighted Average Cost of Capital

Based on the inputs calculated, the WACC is computed as follows:

$$WACC = \big(Kd * (1 - t)\big) * \left(\frac{D}{(D + E)}\right) * Ke * \left(\frac{E}{(D + E)}\right)$$

$$WACC = \big(3{,}1\% * (1 - 19\%)\big) * (3{,}5\%) * 7{,}4\% * (96{,}5\%) = 7{,}3\%$$

As observed, not only is the entity mostly financed by equity, but it also has a very low cost of debt.

5.8. Discounted Cash Flow Models

5.8.1 Free Cash Flow to the Firm

Free Cash Flows to the Firm (FCFF) are calculated by starting with the forecasted after-tax operating profit, detailed in Chapters 5.1 through 5.6, and adding the projected depreciation and amortization. From this sum, we subtract the necessary reinvestments, determined by projected CAPEX and changes in Working Capital. The forecasted Free Cash Flows to the Firm are outlined as follows:

Table 4: FCFF & Value

>>> FCFF and Value	2024	2025	2026	2027	2028
(+) EBITDA	1.551	1.710	1.903	2.084	2.211
(-) Corporate Taxes	(261)	(288)	(315)	(343)	(361)
(-) CAPEX	(320)	(329)	(336)	(343)	(350)
(-) Δ Working capital	(129)	(3)	(2)	(2)	(15)
FCFF	**841**	**1.091**	**1.249**	**1.396**	**1.485**
Projection months	12	12	12	12	12
Discount factor	0,93	0,87	0,81	0,76	0,70
Discounted cash flow	**784**	**948**	**1.012**	**1.055**	**1.122**

Source: Elaborated by the Author, Electronic Sports Inc, Capital IQ.

The terminal value represents the worth of cash flows extending beyond the valuation period. It is calculated by determining the perpetuity of the firm's cash flows, assuming a constant growth rate. For this analysis, the perpetual growth rate is based on the expected GDP growth rate for the United States in 2028 (source: CBO). The terminal value is then derived by discounting the forecasted FCFF for 2028 using the difference between the Weighted Average Cost of Capital (WACC) and the perpetual growth rate (g). This results in a terminal value of USD 37.1 billion.

Table 5: Enterprise Value - FCFF

WACC	**7,26%**
Growth	**4,02%**
Discounted cash flow	3.800
Terminal Value	36.080
Enterprise value	**39.880**

Source: Elaborated by the Author, Electronic Sports Inc, Capital IQ.

Adding this terminal value to the discounted cash flows yields an Enterprise Value of USD 39.8 billion. After subtracting the book value of debt and adding the book value of cash, we obtain a final forecasted equity value for 2023 of USD 40.8 billion. With 267.3 million shares outstanding, the fair value of EA stock is calculated at USD 152.51 per share.

Table 6: Share Price - FCFF

Enterprise value	**39.880**
(-) Finantial Debt	(1.880)
(+) Cash	2.767
Adjusted value	**887**
Equity Value	**40.767**
Share price	**152,5**

Source: Elaborated by the Author, Electronic Sports Inc, Capital IQ.

5.8.2 Free Cash Flow to Equity

To determine Free Cash Flow to Equity (FCFE), adjustments must be made to the cash flows to incorporate the effects of debt, forecasted after-tax interest expenses, and dividends. The assumptions for debt and after-tax interest expenses are based on the cost of debt and debt growth rates from the past two years, projected to continue at the same percentage of revenue as observed in the most recent year. Additionally, as highlighted in Chapter 4.6, EA has not consistently paid dividends, so the forecast assumes no dividends for this period.

Table 7: FCFE and Value

>>> FCFE and Value	2024	2025	2026	2027	2028
FCFF	841	1.091	1.249	1.396	1.485
Interest expense after tax	(58)	(58)	(58)	(59)	(59)
Change Debt	63	67	71	74	78
Dividends	0	0	0	0	0
FCFE	**847**	**1.099**	**1.261**	**1.411**	**1.503**
Projection months	12	12	12	12	12
Discount factor	0,93	0,87	0,81	0,75	0,70
Discounted cash flow	**788**	**953**	**1.017**	**1.060**	**1.129**

Source: Elaborated by the Author, Electronic Sports Inc, Capital IQ.

(Same comment as in the previous FCFF table)

In the FCFE model, the terminal value is computed using a similar growth rate for perpetual cash flows as in the FCFF approach. However, instead of using the Weighted Average Cost of Capital (WACC) as the discount rate, the previously calculated cost of equity (7.4%) is employed. The terminal value is determined by discounting the forecasted FCFE for 2028 using the difference between the cost of equity (KE) and the perpetual growth rate (g).

Table 8: Equity Value and Share Price – FCFE

KE	**7,43%**
Growth	**4,02%**
Discounted cash flow	3.818
Perpetuity	34.476
Equity value	**38.293**
(+) Cash	2.767
Adjusted value	**2.767**
Equity Value	**41.060**
Share price	**153,6**

Source: Elaborated by the Author, Electronic Sports Inc, Capital IQ.

Adding this terminal value to the discounted cash flows yields an Equity Value of USD 38.2 billion. After adding the book value of cash, we obtain a final forecasted equity value for 2023 of USD 41.0 billion. With 267.3 million shares outstanding, the fair value of EA stock is calculated at USD 153,6 per share.

5.8.3 Sensitivity Analysis

Sensitivity analysis is a crucial step in valuing a company using the Discounted Cash Flow (DCF) model, given the significant impact that forecasts have on the valuation. The Weighted Average Cost of Capital (WACC) and the perpetual growth rate are key drivers in this model, influencing the final valuation substantially. Analysts often perform sensitivity analysis to address the inherent uncertainty in these projections, establishing a range for the WACC and growth rate to evaluate their effects on the valuation. For example, in the FCFF the WACC might vary between 6.26% and 8.26%, and the growth rate between 3.0% and 6.0%. This approach allows for a better understanding of how changes in these critical variables can affect the forecasted value, ultimately reducing uncertainty in the model.

Table 9: Sensitivity Analysis: Wacc and Growth

		Growth				
		3,02%	**3,52%**	**4,02%**	**4,52%**	**5,02%**
WACC	**6,26%**	**157**	**183**	**221**	**280**	**388**
	6,76%	**136**	**155**	**180**	**218**	**277**
	7,26%	**120**	**134**	**152**	**178**	**215**
	7,76%	**107**	**118**	**132**	**150**	**176**
	8,26%	**97**	**106**	**117**	**130**	**148**

Price per share

Source: Elaborated by the Author, Electronic Sports Inc.

The table reveals how the price per share of EA fluctuates with changes in the Weighted

Average Cost of Capital (WACC) and perpetuity growth rates. At a WACC of 6.76% or lower, the price per share is consistently above the threshold level across all growth rate scenarios, suggesting that the company may be undervalued in these cases. Conversely, when the WACC reaches 7.26% or higher, the price per share often falls below the threshold level, indicating potential overvaluation. Therefore, EA's shares are likely considered overvalued at higher WACC levels and more favorable when the cost of capital is lower.

Table 10: Sensitivity Analysis: Ke and Growth

		Growth				
		3,02%	3,52%	4,02%	4,52%	5,02%
KE	6,26%	166	192	230	291	400
	6,76%	144	163	190	227	287
	7,26%	128	142	161	187	224
	7,76%	115	126	141	159	185
	8,26%	105	114	125	139	157

Price per share

Source: Elaborated by the Author, Electronic Sports Inc.

The table illustrates the estimated price per share of EA using the FCFE method, based on varying growth rates and the cost of equity (KE). From the data, when the cost of equity is 6.76% or lower, the price per share consistently exceeds the threshold level across all growth rate scenarios, indicating that the stock may be undervalued according to the FCFE methodology. As the cost of equity rises to 7.26% or more, the price per share often falls below the threshold level, suggesting potential overvaluation in these scenarios. Therefore, the FCFE analysis implies that EA's shares are more attractive to investors at lower equity costs, while higher equity costs could indicate that the stock is currently overvalued.

5.9. Model Limitations

The main limitation in developing this model is the challenge of forecasting across a period that includes both pre-pandemic and post-pandemic conditions. The COVID-19 pandemic had a profound impact on global markets, with a notable surge in digital sales during lockdowns leading to a "new normal" where high digital sales continue to prevail. This disruption makes accurate forecasting during such volatile times particularly complex. Additionally, the model was created with restricted information access; it relies solely on publicly available data and lacks insights from EA's Management. Consequently, the assumptions used in the cash flow forecasts may not fully capture EA's growth strategy or future business outlook, given the limited disclosure in annual reports.

5.10. Relative Valuation

Relative Valuation is applied to estimate the value of an asset by comparing it to the market prices of similar assets. For this analysis, we have selected a peer group of companies

operating within the video game and interactive entertainment sector. This peer group is the same one used in determining EA Sports' target capital structure and serves as a proxy for the unlevered beta in the gaming and digital entertainment market.

5.10.1 EV/EBITDA and P/E

The analysis employs the EV/EBITDA and P/E ratios to assess EA Sports' valuation. The EV/EBITDA ratio is precious because it excludes non-operating factors such as debt and taxes and amortizes the cost of fixed assets over time. This provides a more accurate measure of the company's operational performance.

In this analysis, the P/E ratio was selected as a key valuation metric. The P/E ratio reflects actual earnings data, providing a concrete measure of a company's current market valuation relative to its earnings. This makes it a reliable and widely accepted indicator for comparing companies within the same industry. By using the P/E ratio, we can assess EA Sports' performance based on proven financial results, reducing the risk of inaccuracies that may arise from speculative future earnings forecasts.

The multiples of the companies as of the reference date, 31/12/2023, may vary due to differences in growth expectations, management strategies, or accounting practices. In summary, the selected peer group for the Relative Valuation analysis is as follows:

Table 11: Relative valuation – Overview

Company	P/E	EV/EBITDA
Ubisoft Entertainment SA	37,8x	11,2x
Virtual Interactive Technologies Corp.	35,7x	23,0x
Roblox Corporation	45,4x	26,9x
Take-Two Interactive Software, Inc.	53,5x	38,3x
PLAYSTUDIOS, Inc.	28,6x	5,6x
Nintendo Co., Ltd.	28,4x	18,7x
AVERAGE	**38,2x**	**20,6x**

Source: Elaborated by the Author, Electronic Sports Inc, Capital IQ.

While the valuation multiples suggest lower share prices—$153.5 using the P/E ratio and $144.0 based on the EV/EBITDA ratio—compared to the FCFF valuation of $152.5 they align closely with the FCFE method, which results in $153.6.

(please check this after correcting your calculations)

5.11. Valuation Overview

Even though the FCFF valuation indicates a significantly higher implicit share price compared to other methodologies, all computed valuations suggest a share price above EA

Sports' market price as of December 31, 2023 ($137).

The variation among the different valuation methods can be partially explained by EA Sports' different financial characteristics compared to its peers. For example, EA Sports has a distinct capital structure and growth outlook, which may not align perfectly with the industry averages used in valuation multiples.

While Cash Flows to Firm (FCFF) and Cash Flows to Equity (FCFE) are relatively similar, differences in the discount rates used in each model can lead to variations in valuation results. The FCFF model uses a discount rate that reflects the company's overall cost of capital, while the FCFE model incorporates a higher cost of equity, which results in lower discounted cash flows and terminal values. This discrepancy can affect the final valuation outcome.

Overall, given that EA Sports' market price as of December 31, 2023, was $137, the valuation methodologies suggest that EA Sports is potentially undervalued. This could indicate market growth expectations differ from those reflected in the DCF models, possibly due to recent developments in the gaming industry or changes in market dynamics. EA Sports may have a higher risk profile than accounted for in the DCF models, impacting the cost of equity and overall valuation.

The FCFF model suggests a potential return of approximately 11.5%, supporting a buy recommendation for EA Sports shares. All other methodologies align with this recommendation, though with slightly lower upside potential.

6. Conclusion

The current project aimed to assess the fair value of Electronic Arts (EA) shares as of December 31st, 2023. Several valuation methodologies were applied, including Discounted Cash Flows (DCF) using Free Cash Flow to the Firm (FCFF) and Free Cash Flow to Equity (FCFE), as well as Relative Valuation using Price-Earnings (P/E) ratio and EV/EBITDA multiple.

These different approaches yielded varying results, with the FCFF model standing out by providing a valuation of $152.5 per share, higher than the other methods. To validate this finding, a sensitivity analysis was conducted. It indicates that if the Weighted Average Cost of Capital (WACC) does not exceed 6.3%, the return on investing in EA’s shares is positive across all perpetuity growth rate scenarios considered, thereby supporting the investment recommendation suggested by the FCFF model.

Overall, the average equity valuation per share was calculated at $150.9, while the median equity value per share amounted to $153.0, compared to the market share price of $136,8, as of December 31st, 2023.

Despite discrepancies between the valuation results from different methodologies, all

outcomes indicate a positive return, exceeding 5.0%. Therefore, the recommendation is to invest (buy) in EA shares.

However, potential investors should consider that, although all assumptions are based on historical, macroeconomic, or industry data with a moderately conservative approach, this equity research was conducted using publicly available information.

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Annexes

Annex A: Balance Sheet

	<<< Historical		Projection >>>				
Year	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Property and equipment, net	550,0	549	711	872	1.034	1.195	1.357
Goodwill	5.387,0	5.380	5.380	5.380	5.380	5.380	5.380
Acquisition-related intangibles, net	962,0	618	618	618	618	618	618
Deferred income taxes, net	2.243,0	2.462	2.462	2.462	2.462	2.462	2.462
Other assets	507,0	481,0	481,0	481,0	481,0	481,0	481,0
Non-current assets	**9.649,0**	**9.490,0**	**9.651,6**	**9.813,2**	**9.974,8**	**10.136,4**	**10.298,0**
Cash and cash equivalents	2.732	2.424,0	3.536,3	4.764,2	6.108,4	7.572,1	9.110,1
Short-term investments	330	343,0	343,0	343,0	343,0	343,0	343,0
Receivables, net	650	684,0	650,0	684,0	726,3	767,5	808,3
Other current assets	439,0	518,0	439,0	518,0	514,6	536,3	557,7
Current assets	**4.151,0**	**3.969,0**	**4.968,3**	**6.309,2**	**7.692,3**	**9.218,9**	**10.819,1**
Total assets	**13.800,0**	**13.459,0**	**14.619,9**	**16.122,4**	**17.667,1**	**19.355,3**	**21.117,1**
Equities & Liabilities							
Common stock	3,0	3,0	3,0	3,0	3,0	3,0	3,0
Retained earnings	7.607,0	7.357,0	7.357,0	7.357,0	7.357,0	7.357,0	7.357,0
Accumulated other comprehensive income (loss)	15,0	-67,0	-67,0	-67,0	-67,0	-67,0	-67,0
Equity	**7.625,0**	**7.293,0**	**7.293,0**	**7.293,0**	**7.293,0**	**7.293,0**	**7.293,0**
Senior notes, net	1.878	1.880	1.880	1.880	1.880	1.880	1.880
Income tax obligations	386	607	607	607	607	607	607
Deferred income taxes, net	1	1	1	1	1	1	1
Other liabilities	397	393	4.490	6.057	7.667	9.419	11.266
Non-current liabilities	**2.662,0**	**2.881,0**	**6.977,5**	**8.545,5**	**10.154,5**	**11.907,2**	**13.754,0**
Accounts payable	101,0	99,0	-107,9	-112,5	-116,9	-121,4	-127,3
Accrued and other current liabilities	1.388,0	1.285,0	-1.443,7	-1.504,6	-1.564,5	-1.624,5	-1.703,5
Deferred net revenue (online-enabled games)	2.024,0	1.901,0	1.901,0	1.901,0	1.901,0	1.901,0	1.901,0
Current liabilities	**3.513,0**	**3.285,0**	**349,4**	**283,9**	**219,6**	**155,1**	**70,2**
Liabilities	**6.175,0**	**6.166,0**	**7.326,9**	**8.829,4**	**10.374,1**	**12.062,3**	**13.824,1**
Total equity and liabilities	**13.800,0**	**13.459,0**	**14.619,9**	**16.122,4**	**17.667,1**	**19.355,3**	**21.117,1**

Annex B: Income Statement

Income statement											
					<<< Historical		Projection >>>				
Date	Mar-18	Mar-19	Mar-20	Mar-21	Mar-22	Mar-23	Mar-24	Mar-25	Mar-26	Mar-27	Mar-28
Net revenue	**5.305**	**4.906**	**5.537**	**5.629**	**6.991**	**7.426**	**7.848**	**8.293**	**8.735**	**9.182**	**9.634**
(%) Growth	n.a	(7,5%)	12,9%	1,7%	24,2%	6,2%	5,7%	5,7%	5,3%	5,1%	4,9%
Cost of Revenue	(1.277)	(1.322)	(1.369)	(1.494)	(1.859)	(1.792)	(2.001)	(2.115)	(2.227)	(2.342)	(2.457)
As % of Net Revenue	(24,1%)	(26,9%)	(24,7%)	(26,5%)	(26,6%)	(24,1%)	(25,5%)	(25,5%)	(25,5%)	(25,5%)	(25,5%)
Gross profit GAAP	**4.028**	**3.584**	**4.168**	**4.135**	**5.132**	**5.634**	**5.847**	**6.178**	**6.507**	**6.841**	**7.177**
Gross profit margin %	75,9%	73,1%	75,3%	73,5%	73,4%	75,9%	74,5%	74,5%	74,5%	74,5%	74,5%
Research & Development	1.320	1.433	1.559	1.778	2.186	2.328	2.430	2.549	2.665	2.780	2.917
As % of Net Revenue	24,9%	29,2%	28,2%	31,6%	31,3%	31,3%	31,0%	30,7%	30,5%	30,3%	30,3%
Sales & Marketing	641	702	631	689	961	978	1.005	1.027	1.049	1.070	1.123
As % of Net Revenue	12,1%	14,3%	11,4%	12,2%	13,7%	13,2%	12,8%	12,4%	12,0%	11,7%	11,7%
General & Administrative	469	460	506	592	673	727	759	792	826	862	905
As % of Net Revenue	8,8%	9,4%	9,1%	10,5%	9,6%	9,8%	9,7%	9,5%	9,5%	9,4%	9,4%
Amortization of Intangibles	-	14	22	30	183	158	165	173	181	189	196
As % of Net Revenue	0,0%	0,3%	0,4%	0,5%	2,6%	2,1%	2,1%	2,1%	2,1%	2,1%	2,0%
Restructuring	-	-	-	-	-	111	116	122	127	133	138
As % of Net Revenue	0,0%	0,0%	0,0%	0,0%	0,0%	1,5%	1,5%	1,5%	1,5%	1,4%	1,4%
Total Operating Expenses	**(2.430)**	**(2.609)**	**(2.718)**	**(3.089)**	**(4.003)**	**(4.302)**	**(4.474)**	**(4.662)**	**(4.848)**	**(5.034)**	**(5.279)**
As % of Net Revenue	(45,8%)	(53,2%)	(49,1%)	(54,9%)	(57,3%)	(57,9%)	(57,0%)	(56,2%)	(55,5%)	(54,8%)	(54,8%)
Operating income	**1.598**	**975**	**1.450**	**1.046**	**1.129**	**1.332**	**1.373**	**1.516**	**1.660**	**1.807**	**1.899**
Operating Margin	30,1%	19,9%	26,2%	18,6%	16,1%	17,9%	17,5%	18,3%	19,0%	19,7%	19,7%
Depreciation & Amortization	136	145	120	181	486	536	178	194	243	277	312
As % of Net Revenue	2,6%	3,0%	2,2%	3,2%	7,0%	7,2%					
EBITDA	**1.734**	**1.120**	**1.570**	**1.227**	**1.615**	**1.868**	**1.551**	**1.710**	**1.903**	**2.084**	**2.211**
EBITDA margin %	32,7%	22,8%	28,4%	21,8%	23,1%	25,2%	19,8%	20,6%	21,8%	22,7%	22,9%
Interest & Other (Expense / Income)	15	83	63	(29)	(48)	(6)	-	-	-	-	-
Pre-Tax Income	**1.613**	**1.058**	**1.513**	**1.017**	**1.081**	**1.326**	**1.373**	**1.516**	**1.660**	**1.807**	**1.899**
Tax	(306)	(201)	(287)	(193)	(205)	(252)	(261)	(288)	(315)	(343)	(361)
Net income	**1.307**	**857**	**1.226**	**824**	**876**	**1.074**	**1.112**	**1.228**	**1.344**	**1.464**	**1.538**

Annex C: Free Cash Flow to the firm

>>> FCFF and Value	2024	2025	2026	2027	2028
(+) EBITDA	1.551	1.710	1.903	2.084	2.211
(-) Corporate Taxes	(261)	(288)	(315)	(343)	(361)
(-) CAPEX	(320)	(329)	(336)	(343)	(350)
(-) Δ Working capital	(129)	(3)	(2)	(2)	(15)
FCFF	**841**	**1.091**	**1.249**	**1.396**	**1.485**
Projection months	12	12	12	12	12
Discount factor	0,93	0,87	0,81	0,76	0,70
Discounted cash flow	**784**	**948**	**1.012**	**1.055**	**1.122**

WACC	**7,26%**
Growth	**4,02%**
Discounted cash flow	3.800
Terminal Value	36.080
Enterprise value	**39.880**
(-) Finantial Debt	(1.880)
(+) Cash	2.767
Adjusted value	**887**
Equity Value	**40.767**
Share price	**152,5**

Annex D: Free Cash Flow to Equity

>>> FCFE and Value	2024	2025	2026	2027	2028
FCFF	841	1.091	1.249	1.396	1.485
Interest expense after tax	(58)	(58)	(58)	(59)	(59)
Change Debt	63	67	71	74	78
Dividends	0	0	0	0	0
FCFE	**847**	**1.099**	**1.261**	**1.411**	**1.503**
Projection months	12	12	12	12	12
Discount factor	0,93	0,87	0,81	0,75	0,70
Discounted cash flow	**788**	**953**	**1.017**	**1.060**	**1.129**

KE	**7,43%**
Growth	**4,02%**
Discounted cash flow	3.818
Perpetuity	34.476
Equity value	**38.293**
(+) Cash	2.767
Adjusted value	**2.767**
Equity Value	**41.060**
Share price	**153,6**

Annex E: WACC

WACC

Parameters		Source
Risk free rate	3,8%	www.cbo.gov/publication/58848
Country risk	0,0%	
Market premium	5,2%	Damodaran
Unleveraged Beta (βu)	0,67	Capital IQ (CIQ)
% Debt - [D/(D+E)]	3,5%	CIQ: capital structure
% Equity [E/(D+E)]	96,5%	CIQ: capital structure
Corporate tax	19,0%	Income Tax and Social Contribution rate in US.
Leveraged Beta (βL)	0,69	Calculation.
Size premium	0,0%	Duff & Phelps
EUA Inflation	2,7%	Statista - Long term inflation
Cost of equity	**7,4%**	
Cost of debt in DoI (pre-tax)	3,1%	Company information
Cost of debt in DoI (post-tax)	2,5%	Calculation.
WACC	**7,3%**	

Annex F: Beta

Capital IQ DATA

Base - date: 31/12/2023

Companies	Points	Covariance	Market Variance	Beta	Correlation R2	Beta Adj
Electronic Arts Inc.	60	0,002	0,003	0,818	0,620	38% 0,879
Ubisoft Entertainment SA	60	0,000	0,003	-0,016	-0,008	0% 0,322
Virtual Interactive Technologies Corp.	51	0,002	0,003	0,598	0,081	1% 0,732
Roblox Corporation	33	0,005	0,003	1,606	0,427	18% 1,404
Take-Two Interactive Software, Inc.	60	0,002	0,003	0,745	0,458	21% 0,830
PLAYSTUDIOS, Inc.	36	0,001	0,003	0,417	0,168	3% 0,611
Nintendo Co., Ltd.	60	0,001	0,002	0,506	0,329	11% 0,796

Annex G: D/E

Companies	Evolution	2018	2019	2020	2021	2022	2023	(D/EV) 5Y
Electronic Arts Inc.		0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
Ubisoft Entertainment SA		3,7%	4,5%	2,3%	10,4%	22,9%	28,4%	12,0%
Virtual Interactive Technologies Corp.			4,0%	4,0%	3,9%	8,9%	23,4%	8,8%
Roblox Corporation					0,0%	0,0%	0,0%	0,0%
Take-Two Interactive Software, Inc.		0,0%	0,0%	0,0%	0,0%	11,9%	8,7%	3,4%
PLAYSTUDIOS, Inc.				0,0%	0,0%	0,0%	0,0%	0,0%
Nintendo Co., Ltd.		0,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%

Annex H: Working capital

Working Capital							
Year	2022	2023	2024	2025	2026	2027	2028
N° of days	360	360	360	360	360	360	360
Sales	6.991	7.426	7.848	8.293	8.735	9.182	9.634
COGS	(4.003)	(4.302)	(4.474)	(4.662)	(4.848)	(5.034)	(5.279)
Tax	(205)	(252)	(261)	(288)	(315)	(343)	(361)
Accounts receivable	650	684	726	767	808	850	892
DSO	33	33	33	33	33	33	33
Other current assets	439	518	515	536	558	579	607
DSO	- 39	- 43	- 41	- 41	- 41	- 41	- 41
Total current assets	**1.089**	**1.202**	**1.241**	**1.304**	**1.366**	**1.429**	**1.499**
Suppliers	(101)	(99)	(108)	(112)	(117)	(121)	(127)
DPO	9	8	9	9	9	9	9
Accrued and other current liabilities	(1.388)	(1.285)	(1.444)	(1.505)	(1.564)	(1.625)	(1.704)
DPO	125	108	116	116	116	116	116
Total current liabilities	**- 1.489**	**- 1.384**	**- 1.552**	**- 1.617**	**- 1.681**	**- 1.746**	**- 1.831**
Working capital, net	(400)	(182)	(311)	(313)	(315)	(317)	(332)
Working Capital Variation		(218)	129	3	2	2	15
Working capital/net revenue	(6%)	(2%)	(4%)	(4%)	(4%)	(3%)	(3%)

Annex I: PP&E

PP&E			
	Gross Carrying amount	Accumulated Depreciation	Net
Intangible assets	1.707	(1.089)	618

In USD thousands	Gross	Accumulated Depreciation	Net
PP&E	1.616	(1.067)	549
Intangible	1.707	(1.089)	618

	Gross	Accumulated Depreciation	Net
Fixed Assets	1.616	1.067	549

Annex J: Fixed Assets & Depreciation

>>> Fixed assets													
Unit	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
1. Existing fixed assets & intangibles													
1.1 Fixed Assets & Depreciation													
Gross Fixed Assets													
Fixed assets				1.616	1.616	1.616	1.616	1.616	1.616	1.616	1.616	1.616	1.616
Total Fixed assets	-	-		**1.616**	**1.616**	**1.616**	**1.616**	**1.616**	**1.616**	**1.616**	**1.616**	**1.616**	**1.616**
Depreciação	**Tax**												
Fixed Assets	10%			(1.067)	(905)	(744)	(582)	(421)	(259)	(97)	64	226	387
Accumulated Depreciation - Existing Fixed Assets			-	**1.067**	**- 905**	**- 744**	**- 582**	**- 421**	**- 259**	**- 97**	**64**	**226**	**387**
Depreciation					(162)	(162)	(162)	(162)	(162)	(162)	(162)	(162)	(162)
Net Fixed Assets													
Fixed Assets		-	-	549	711	872	1.034	1.195	1.357	1.519	1.680	1.842	2.003
Total Fixed Assets		-	-	**549**	**711**	**872**	**1.034**	**1.195**	**1.357**	**1.519**	**1.680**	**1.842**	**2.003**

Annex K: Intangibles & Amortization

>>> Fixed assets												
Unit	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
1.2 Intangibles & Amortization													
Intangible Assets													
Gross Intangible Assets				1.707	1.707	1.707	1.707	1.707	1.707	1.707	1.707	1.707	1.707
Total Intangible Assets		-	-	**1.707**	**1.707**	**1.707**	**1.707**	**1.707**	**1.707**	**1.707**	**1.707**	**1.707**	**1.707**
Amortization	**Tax**												
Accumulated amortization	10%			(1.089)	(1.089)	(1.089)	(1.089)	(1.089)	(1.089)	(1.089)	(1.089)	(1.089)	(1.089)
Accumulated Amortization - Existing Intangible Assets			-	**1.089**	**1.089**	**1.089**	**1.089**	**1.089**	**1.089**	**1.089**	**1.089**	**1.089**	**1.089**
Amortization of the period					-	-	-	-	-	-	-	-	-
Net Intangible Assets													
Intangible		-	-	618	618	618	618	618	618	618	618	618	618
Total Intangible Assets		-	-	**618**	**618**	**618**	**618**	**618**	**618**	**618**	**618**	**618**	**618**

Annex L: Capex

>>> Fixed assets													
Unit	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
2. CAPEX													
2.1 CAPEX - Fixed Assets	**10,0%**												
CAPEX (Tangible)					**320**	**329**	**336**	**343**	**350**	**357**	**364**	**372**	**379**
	10,0%												
2024	320				(16)	(16)	(32)	(32)	(32)	(32)	(32)	(32)	(32)
2025	329				-	(16)	(33)	(33)	(33)	(33)	(33)	(33)	(33)
2026	336				-	-	(17)	(34)	(34)	(34)	(34)	(34)	(34)
2027	343				-	-	-	(17)	(34)	(34)	(34)	(34)	(34)
2028	350				-	-	-	-	(18)	(35)	(35)	(35)	(35)
2029	357				-	-	-	-	-	(18)	(36)	(36)	(36)
2030	364				-	-	-	-	-	-	(18)	(36)	(36)
2031	372				-	-	-	-	-	-	-	(19)	(37)
2032	379				-	-	-	-	-	-	-	-	(19)
	379												
	379												
	379												
	379												
	379												
Total - Depreciation Fixed Assets CAPEX					**(16)**	**(32)**	**(82)**	**(116)**	**(150)**	**(186)**	**(222)**	**(259)**	**(296)**

Annex M: Fixed assets overview

EA Equity valuation

>>> Fixed assets													
Unit	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
3. Overview													
Fixed Assets (net) BoP					549	691	826	919	985	1.023	1.033	1.014	966
(+) Capex (Fixed Assets)					320	329	336	343	350	357	364	372	379
(-) Depreciation					(178)	(194)	(243)	(277)	(312)	(347)	(383)	(420)	(458)
Fixed Assets (net) EoP				**549**	**691**	**826**	**919**	**985**	**1.023**	**1.033**	**1.014**	**966**	**887**

Annex N: Key Financial Ratios

Key financial Ratios	2022	2023	2024 - Budget
Gross margin	**73,4%**	**75,9%**	**74,5%**
EBITDA margin	**23,1%**	**25,2%**	**19,8%**
Net profit margin	**12,5%**	**14,5%**	**14,2%**
ROE	**11,5%**	**14,7%**	**15,3%**
ROA	**6,3%**	**8,0%**	**7,6%**
Asset turnover	**0,51**	**0,55**	**0,54**
Current Ratio	**1,18**	**1,21**	**14,22**
Debt/equity	**0,25**	**0,26**	**0,26**

Annex O: Key Financial Ratios Among Peers

	Date	P/E	EV / EBITDA	EV / Revenue	EBITDA/Net Income	Mkt Cap / Equity	Mkt Cap / Revenue	Mkt Cap / Assets	Net Debt / Equity	Net Debt / EV	EBITDA Margin	EBIT Margin
Electronic Arts Inc.	**31/12/2023**	**34,1x**	**19,1x**	**4,8x**	**1,4**	**4,6**	**4,9**	**2,7**	**0,4**	**7,8%**	**25,2%**	**20,5%**
Ubisoft Entertainment SA	**31/12/2023**	37,8x	11,2x	2,0x	-4,9	1,6	1,4	0,6	0,7	31,6%	20,9%	0,1%
Virtual Interactive Technologies Corp.	**31/12/2023**	35,7x	23,0x	37,1x	0,0	2,5	28,4	33,3	0,0	22,8%	0,0%	0,0%
Roblox Corporation	**31/12/2023**	45,4x	26,9x	10,0x	0,9	415,5	10,2	4,6	6,3	-1,5%	17,3%	14,7%
Take-Two Interactive Software, Inc.	**31/12/2023**	53,5x	38,3x	5,6x	-0,6	3,2	1,8	0,3	-1,3	-8,7%	15,4%	9,7%
PLAYSTUDIOS, Inc.	**31/12/2023**	28,6x	5,6x	0,8x	-2,2	1,3	1,2	1,0	-0,4	-50,4%	13,9%	4,6%
Nintendo Co., Ltd.	**31/12/2023**	28,4x	18,7x	3,8x	1,2	3,5	5,0	2,8	-0,8	-30,9%	33,5%	32,8%
AVERAGE		**38,2x**	**20,6x**	**9,9x**	**-0,9**	**71,3**	**8,0**	**7,1**	**0,7**	**(6%)**	**7%**	**7%**

Annex P: Dashboard and Assumptions

Input and Assumptions

General Assumptions

	Value	Unit	Increases/Decreases	
Revenue from Full Game	(1,0%)	DoI	Analyst assumption + inflation	
Revenue from Live Services & Other		DoI	Inflaton + GDP	Year 1
CAPEX	320	DoI	Inflation	Year 1

Costs

Cost item	Value	Unit	Increases and base
Cost of Revenue		DoI	Average last 6 years
Research & Development	(1,0%)	DoI	GDP basis + Premium
Sales & Marketing	(1,0%)	DoI	Inflation basis + Premium
General & Administrative		DoI	Inflation basis
Amortization of Intangibles		DoI	Inflation basis
Restructuring		DoI	Inflation basis

Revenue

- The revenue cases used in the model are as follows:

Revenue case		Scenario increase/decrease
Base case		
Best case	1	+5%
Worst case		-5%

Tax

Income tax	19%

Macroeconomics

	2024 (Y1)	2025 (Y2)	2026 (Y2)	2027 (Y2)	2028 (Y2)
Inflation	2,72%	2,24%	2,12%	2,03%	2,01%
Risk free	3,84%	3,78%	3,78%	3,79%	3,79%
GDP	4,36%	4,91%	4,54%	4,33%	4,02%

Others

item	Value	Unit	Source
Depreciation tax rate	10,0%	%	Company Data