



Equity Valuation Spotify Technology SA

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Abstract

This study estimates the fair market value of Spotify Technology S.A., utilizing a relative and an absolute equity valuation approach. As this study addresses the challenge of estimating the value for a high growth technology company operating in a dynamic and competitive market, a discounted cash flow (DCF) analysis and an earnings-multiple-based relative valuation approach have been applied. Furthermore, the scope encompasses key drivers such as revenue growth, margin expansion and market trends, as well as a complementary analysis of the music streaming industry and Spotify's competitive positioning. Key results outline that Spotify Technology S.A. significantly diverges in price as compared to its fair market value estimate. Therefore, I propose a strong sell recommendation. Moreover, this research contributes to the field of corporate finance by highlighting the importance of robust assumptions and consistency in valuation methodologies, leading to practical insights for analysts valuing similar high growth technology companies in dynamic sectors.

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Resumo

Este estudo estima o justo valor de mercado da Spotify Technology S.A., utilizando uma abordagem de avaliação relativa e absoluta do capital próprio. Como este estudo aborda o desafio de estimar o valor de uma empresa de tecnologia de alto crescimento que opera num mercado dinâmico e competitivo, foram aplicadas uma análise de fluxo de caixa descontado (DCF) e uma abordagem de avaliação relativa baseada em múltiplos de ganhos. Além disso, o âmbito abrange os principais factores impulsionadores, como o crescimento das receitas, a expansão das margens e as tendências do mercado, bem como uma análise complementar do sector do streaming de música e do posicionamento competitivo da Spotify. Os principais resultados indicam que a Spotify Technology S.A. diverge significativamente no preço em comparação com a sua estimativa de valor justo de mercado. Por conseguinte, proponho uma forte recomendação de venda. Além disso, este estudo contribui para o domínio das finanças empresariais, salientando a importância de pressupostos sólidos e da consistência das metodologias de avaliação, o que conduz a perspectivas práticas para os analistas que avaliam empresas tecnológicas de elevado crescimento semelhantes em sectores dinâmicos.

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1. Introduction

Equity valuation derives its legitimation from observable differences between market prices and assets intrinsic valuations, which is also at center of this studies motivation, i.e. to identify differences between fair price estimates and market prices. Analysts continuously try to estimate mispricing of assets through applications of different valuation methodologies. But what is value and how do analysts choose the correct valuation methodology? Such definition and explanations will be given by the starting chapters of this study.

<Valuation is not an exact science= as José Carlos Tudela Martins once said, and this is true. To such extent as valuation is about predicting the future. Hence, analysts must address the uncertainties resulting from the passage of time. In order match this variability corporate finance introduced the concept of risk. As risk is at core and a complex part of valuation, it is fundamental that this study will explore such concept and the connection between risk and valuation, as discussed in paragraph 2. Literature Review.

Afterwards the focus will shift to Spotify Technology S.A. and its historical performance. As Winston Churchill sad <The farther back you can look, the farther forward you are likely to see.= In spite of that, primary chapters focus on the industry development, company cycle transition and historical financial performance. Key is to establish an appropriate forecast and derive at robust estimates. Subsequently, this equity valuation will be based on two methodologies, the discounted cash flow analysis and a relative valuation approach, the price-earnings-ratio. Which are both distinct methodologies and based on different variables but either of them has strengths and weaknesses. Why these methodologies are particularly interesting for Spotify and what might be problematic will be discussed in the later chapters, i.e. 3. Valuation and 5. Relative Valuation. Independently of the employed methodology, time is always accompanied by variation. To match such uncertainties this equity valuation based its estimates upon a sensitivity, a scenario and a simulation analysis, as outlined during the chapters 4.1. Sensitivity, 4.2. Scenario and 4.3. Monte Carlo.

At last, everything in valuation is based upon assumptions, leading to differences in fair price estimates. As this studies prices range estimate differs significantly from the current market price and the analyst note by Morningstar, the last chapter will provide clarification where those differences come from, 8. Price estimate comparison.

2. Literature Review

2.1. Definition of value

In order to accurately estimate the value of any asset, it is essential to define the concept of value being used. One critical assumption on which equity valuation is based, it that market prices can deviate significantly from an asset's intrinsic value.

If one assumes that markets, follow the strong form of efficiency, as proposed by traditional financial theory, then the true value of any asset would always be observable through the market price. Nevertheless, Sanford J. Grossman and Joseph E. Stiglitz argue that if prices fully reflected all available information, leaving no discrepancies between price and value, no rational investor would incur the costs of analyzing an asset to obtain a second price estimate. Hence, rational investors would not bear the cost of gathering information and defining an estimate unless they expect to be rewarded (Sanford J. Grossman, 1980). This leads to the vital premise of equity valuation, i.e. the potential for market mispricing. Henceforth, this thesis posits that discrepancies between market price and intrinsic value can be identified through careful analysis and forecasting.

At the core of this thesis is the most used concept of value, i.e. the theorem of intrinsic valuation combined with a going concern assumption. Intrinsic value requires an understanding of a particular asset incorporating the true value from any investor's perspective. The going concern assumption implies that the company will continue its operations and business activities in the foreseeable future. <To obtain a useful estimate of intrinsic value, an analyst must combine accurate forecasts with an appropriate valuation model.= (Jerald E. Pinto, 2015).

2.2. Absolute valuation

Absolute valuation models utilize fundamental data at the core of estimating any assets intrinsic value. Practitioners use the resulting estimate as a standard measure and compare it with the asset's current market price. Which enables investors to detect potential market mispricing.

The discounted cash flow analysis (DCF) and the dividend discount model (DDM) are among the most popular absolute valuation methodologies. This thesis will employ the DCF analysis, given its extensive use in practice, comparability with the Morningstar report and applicability to Spotify Technology S.A.

At the heart of the DCF and all other absolute valuation models are risk adjusted cashflows. To such extent as these methodologies estimate an assets intrinsic value first and foremost based

on its risk adjusted cashflow capabilities. Determining an appropriate discount rate as well as projecting reasonable cashflows is the essence of absolute valuation methodologies.

Future chapters will shed some light on the definition of risk and free cash flows (FCF), as well as how to estimate the risk associated to certain FCF.

2.2.1. Free cash flow

Returns can be divided into different categories, namely dividends or cashflows at company level. Analysts most often use models based on cashflows at company level, which represent the cash distributable to all suppliers of capital or equity investors. Hence, if a company distributes all available cash to their equity holder, then the dividend discount model and the free cash flow to equity yield the same price estimate, *ceteris paribus*. The free cashflows can either be defined as free cash flow to the firm (FCFF) or free cash flow to equity (FCFE). With identical assumptions in place and same inputs, both reveal the same estimate of value. But free cash flows are not readily observable, further require a sound grasp of the business and clear understanding of the financial statements. Therefore, FCFF can be obtained in several ways. One potential way is represented by formula (1). The variables represent net income, net noncash charges (such as depreciation and amortization), after-tax interest expenses, investment in fixed capital (e.g., property, plant, and equipment), and working capital investments. For valuation purposes, working capital is defined as current assets (excluding non-operating cash) minus current liabilities (excluding short-term debt and the current portion of long-term debt and notes payable), since the value estimate already accounts for cashflows from operating activities. The estimated number represents the cash available to all suppliers of capital, i.e. common stockholders, bondholders, and preferred stockholder.

$$FCFF = NI + NCC + Int(1 - Tax\ rate) - FCInv - \check{A}CInv \quad (1)$$

Formula (2) represents a possible way of computing FCFE. The way analysts compute the free cash flow depends on the availability of information. Equation (2) includes net income, non-cash charges, investments in fixed capital, working capital investments as well as net borrowing. Whereas the result represents the distributable amount of cash to equity holder. The principal benefit of employing FCFF and FCFE is their suitability for incorporation into a DCF framework. The DCF ultimately projects future cash flows and discounts them back to their

present value. The selection process of FCFF and FCFE is mostly based on the availability of financial data and the analytical objective.

$$FCFE = NI + NCC - FCInv - \check{A}CInv + Net\ borro\hat{c}ing \quad (2)$$

2.2.2. Discount rate

In order to define the present value of such cash flows, it is mandatory to incorporate an assessment of the riskiness associated to such cash flows. In the field of finance, risk is uncertainty. A measure of not receiving the expected return on investment, weighted in percent.

Therefore, it is necessary to integrate such risk into the anticipated cash flows and apply a discount rate that reflects the estimated probability of occurrence. It should be noted, however, that FCFF and FCFE incorporate different estimates of risk.

FCFF incorporates a default spread, which represents the likelihood that a borrower will not meet its financial obligations. In contrast, FCFE incorporates a risk premium for equity risk. From the perspective of investors, risk can be classified into two components, i.e. systematic risk and idiosyncratic risk. To measure such risk, most practitioners use the capital asset pricing model (CAPM) shown by formular (3). The CAPM estimation requires three inputs, the risk-free rate, which represents a riskless asset with a known and certain expected return over the specified time horizon of the analysis, in valuation often estimated by a zero-coupon bond, respective to the functional currency. Secondly, the market risk premium, which is the additional return an investor can expect to receive on top of the risk-free rate, and the beta coefficient, which quantifies the sensitivity of an investment's return in relation to market movements.

$$K_e = R_f + \beta_i(R_m - R_f) \quad (3)$$

Furthermore, beta represents an idiosyncratic risk component. As defined in formula (4), it is the covariance of asset i in relation to the variance of the market portfolio. Therefore, it can be seen as the measure of risk associated with the addition of risk by the asset to the market portfolio. Risk premium on the other hand, measures systematic risk. Therefore, representing

the demanded return premium by investors, for investing in the market portfolio (Damodaran, Investment Valuation, Tools and Techniques for Determining the Value of Any Asset, 2012).

$$\beta_i = \frac{\sigma_{im}}{\sigma_m^2} \quad (4)$$

Once the required rate of return has been estimated, the present value of FCFE can be calculated by discounting them at the cost of equity, as illustrated in the following formula (5). Whereas r is defined as the cost of equity and FCFE represent the cash flow remaining for equity holders after all other claims have been satisfied. Lastly, summing all risk adjusted cashflows reveals an value estimate for the firms equity portion.

$$Equity\ Value = \sum_{t=1}^{\infty} \frac{FCFE_t}{(1 + K_e)^t} \quad (5)$$

Subsequently, the total value of equity can be divided by the number of outstanding shares, which provides a value estimate per share.

It should be noted, however, that there are several deviations from this formula. For example, single-stage or two-stage FCFE models. In the context of equity valuation, it is considered best practice to utilize a model that guides the firm to a state of constant growth, also called mature company life cycle. Accordingly, the formula must be modified slightly, as the going concern assumption is in place, i.e. the asset will continue to deliver free cashflows in perpetuity. Such approach is illustrated in Formula (6). Whereas the variable g represents the incorporation of the constant growth rate, in perpetuity.

$$Equity\ Value = \frac{FCFE_0(1 + g)}{K_e - g} \quad (6)$$

On the other hand, the FCFF utilizes a different discount rate, namely the weighted average cost of capital (WACC), as illustrated in formula (7). The first component represents the proportional after-tax cost of debt, while the second component represents the proportional cost

of equity. Given that FCFE represents the cash distributable to all investors, namely debt and equity, it is necessary that the discount rate incorporates weighted risk associated with such cash flows.

$$\check{A}ACC = \frac{MV(Debt)}{MV(Debt) + MV(Equity)} K_d(1 - Tax\ rate) + \frac{MV(Equity)}{MV(Debt) + MV(Equity)} K_e \quad (7)$$

The cost of equity is identical, as specified in Formula (3). In contrast, the cost of debt can be estimated in several ways, depending on the availability of data. Firstly, if the company has straight bonds outstanding, the cost of debt can be observed by looking at the weighted yield to maturity. Secondly, the median default spread is estimated using the issued ratings for the firm, which gives rise to formula (8). The cost of debt depends on two factors. The first factor can be observed by the yield of a zero-coupon bond, in respect to the functional currency. The default spread measures the probability of default or bankruptcy associated to an asset.

$$K_d = R_f + Default\ Spread \quad (8)$$

In the absence of data, practitioners frequently utilize the interest coverage ratio (9) for estimating the rating (Damodaran, Investment Valuation, Tools and Techniques for Determining the Value of Any Asset, 2012). Whereas EBIT is defined as earnings before interests and taxes. The higher the resulting ratio, the lower is the probability of default and hence, the cost of debt.

$$Interest\ Coverage\ Ratio = \frac{EBIT}{Interest\ Expenses} \quad (9)$$

Once the cost of debt (8) has been estimated, it can be utilized to obtain the market value of debt, which is not often directly observable. The majority of companies have non-listed debt, which for example, may take the form of a loan or capital leases. These values are presented in the financial statements as book values. In order to arrive at an estimate of the market value,

practitioners treat the debt as if it was a one coupon bond, as illustrated in Formula (10). In this context, interest expenses will be treated as coupon payments, while the book value of debt serves as a proxy for principal payments. These components are also known as annuity and present value.

$$\text{Estimated Market Value of Debt} = \text{Interest exp.} \left(\frac{1 - \frac{1}{(1+K_d)^t}}{K_d} \right) + \frac{BV(\text{Debt})}{(1+K_d)^t} \quad (10)$$

Once all input parameters have been estimated, the FCFF is risk adjusted by discounting them, as illustrated in Formula (11).

$$\text{Firm Value} = \sum_{t=1}^{\infty} \frac{FCFF_t}{(1 + AACC)^t} \quad (11)$$

Since the FCFF represent the cash distributable to all suppliers of capital, the market value of net debt must be subtracted, as illustrated in formular (12).

$$\text{Equity Value} = \text{Firm Value} - MV(\text{Net Debt}) \quad (12)$$

2.3. Relative valuation

Relative valuation is a commonly utilized valuation technique, favored by analysts for two principal reasons. Firstly, this approach necessitates fewer assumptions and is considerably more straightforward to implement than a DCF model. As well as the process of framing an asset as either undervalued or overvalued in comparison to a free cashflow models is relatively simple. Nevertheless, the relative valuation approach represents an attempt to estimate the relative value of an asset or company, rather than its intrinsic value (Damodaran, Investment Valuation, Tools and Techniques for Determining the Value of Any Asset, 2012).

Analysts employ two principal methodologies, i.e. enterprise multiples and price multiples. Such relative valuation techniques are applied with respect to standardized values, for example, earnings, assets, book value, sales, or any firm-specific measure that is applicable. The appropriate application of so-called multiples encompasses four fundamental steps, definitional

tests, descriptive tests, analytical tests, and application tests. Employing such steps helps the analyst to reduce the bias of the value estimate.

2.3.1. Consistency in multiples

The appropriate application of multiples requires consistency, given the potential for discrepancies across various dimensions, such as whether the multiple is trailing or forward, or whether it is applied with respect to equity or enterprise value.

Therefore, it is essential that the denominator and the numerator are defined respectively. Discrepancies may emerge from discontinuous applications across the peer group. Such as, corporations operating under non-matching fiscal years, which can give rise to temporary discrepancies. In mature sectors there may be minimal variation in earnings, whereas in high-growth sectors there can be significant deviations in comparables over time. Therefore, it is crucial to maintain uniformity. Furthermore, it is also important to consider the accounting standards employed by the companies as modifications to accounting policies may result in biased outcomes or the distortions of the multiples within the peer group (Damodaran, Investment Valuation, Tools and Techniques for Determining the Value of Any Asset, 2012).

2.3.2. Sector and market distributions

It is not uncommon for practitioners to possess an understanding of the different distribution patterns within a particular sector. However, they frequently lack knowledge to grasp the complexity of the broader market. In order to ascertain whether a market is undervalued or overvalued, it is important to have an understanding of specific ranges that the market and the firm-specific sector have.

The market serves as an initial indicator for determining whether the sector may be overvalued or undervalued. In the second instance, an understanding of the distribution within the firms' specific sector is vital for gauging the relative valuation. Subsequently, it is crucial to determine which specific trajectories within the multiple distribution are utilized. Given that samples frequently exhibit extreme outliers and lack complete datasets, for example, the price-to-earnings ratio (PER) is inherently positive and cannot take on a negative value. Consequently, firms with negative earnings are excluded from the analysis, which results in a skewed distribution. Some analysts employ a variety of percentiles, including the 10th, 25th, 75th, or median, to get a robust value estimate.

An alternative approach is to use an aggregated form. Therefore, aggregating the earnings and prices of the sector in their entirety, including negative earnings. Thus, reducing the potential

of biased results and gain insights into the multiple distribution (Damodaran, Investment Valuation, Tools and Techniques for Determining the Value of Any Asset, 2012).

2.3.3. Drivers of multiples

The application of multiples necessitates not only a comprehensive understanding of the respective distribution but also an in depth understanding of the fundamental drivers and their interconnections. Furthermore, all multiples, whether equity or enterprise, are driven by three fundamental factors, i.e. risk, growth, and cash flow potential.

However, the specific estimate of growth, risk, and cash flow potential will vary depending on the multiple in use. Hence, it is essential to examine the underlying factors and drivers that drive the multiple, in order to gain a comprehensive understanding.

The value of equity in a firm with a stable growth rate can be expressed through formula (13). The numerator represents the dividend per share over the time frame of one year, while the denominator encompasses the cost of equity and the firm specific growth rate.

$$Equity\ Value = \frac{DPS_1}{K_e - g_n} \quad (13)$$

If one divides the left and right side of the equation by the book value of the company, as illustrated in the following equation (14). It is observable that the price-to-book ratio (PBR) is influenced by a number of key parameters, including the return on equity, payout policy, cost of equity, and growth rate.

$$\frac{Price}{Book\ Value} = \frac{ROE * Payout\ Ratio * (1 + g_n)}{K_e - g_n} \quad (14)$$

Moreover, it is vital to grasp the extent to which specific fundamentals influence the ratio. Consequently, practitioners seek to increase the return on equity by two percentage points, holding all other variables constant, and subsequently assess the magnitude of the respective delta.

Finally, each multiple has a so-called companion variable, which is the dominant input parameter driving the ratio with the greatest magnitude. Not only for the magnitude of change

in the companion variable but also for all other parameters. A DCF can be also employed as a basis for fundamental future financials (Damodaran, Investment Valuation, Tools and Techniques for Determining the Value of Any Asset, 2012).

2.3.4. Controlling for differences

It is not uncommon for practitioners to use multiples in respect to comparable companies. Nevertheless, the notion of an exact equivalent is mostly theoretical. It is often impossible to identify a company that is an exact match for the target company, given that every firm possesses distinctive characteristics. Analysts typically attempt to identify comparable entities within the same industry. However, despite their efforts, differences remain, even when they examine the most closely related firms. Henceforth, the pivotal issue is how to control for these deviations. To solve this problem, Aswath Damodaran proposes four potential solutions to control for such differences.

It is recommended that a subjective adjustment is made in cases where the ratio in question is significantly different from the mean ratio of the industry. In such instances, it is useful to analyze the individual characteristics of the firm. In order to identify the potential reasons for the observed deviation from the mean. In the absence of an explanation, the firm may be regarded as either overvalued or undervalued. Additionally, modified multiples are employed. Assuming that an observable deviation in the companion variable within the peer group is observed, where all other variables are identical or have just minor deviations. Hence, the difference in the companion variable can now be controlled for by dividing the main ratio by the companion variable and comparing the resulting ratio across the sector. Sector regression analysis may also be employed. This approach is applicable to comparable company analysis when there is a substantial number of comparable firms and the relationship between the multiple and the variables is consistent. Thus, a regression analysis is conducted with the objective of explaining the multiple by controlling for the variables that show divergent patterns across the dataset. Market regression is a viable option too. This is an approach that utilizes companies from a variety of sectors. Therefore, the definition of a comparable firm is based on fundamental financial characteristics rather than qualitative characteristics, i.e. the industry. One advantage of this approach is that the resulting insights are more meaningful for firms operating in industries with relatively few competitors. Furthermore, important insights will be gained about the industry, such as whether the industry is currently overvalued or undervalued, which minimizes the potential of comparing mispriced assets and getting skewed value

estimates (Damodaran, Investment Valuation, Tools and Techniques for Determining the Value of Any Asset, 2012).

2.4. Considerations for Spotify Technology SA

Applications for Spotify will be based on the determination of Spotify's prospective company life cycle. As following paragraphs will point out, Spotify is reaching a mature company life cycle. Therefore, the intrinsic valuation measure shift from revenue based towards earnings based. This transition enables the serious applicability of a DCF model, since Spotify now generates consistent positive FCF. Additionally, a two-stage forecast model is reasonable, since the application of such models require a stable growth stage to define the terminal value. The explicit period will encompass a time frame which will lead to such stable state. The exact time horizon of the explicit stage will be determined by the detailed bottom up forecast in the later chapters.

Considerations for the relative valuation also shift with the transition to a mature company life cycle. Therefore, applicable pricing metrics shift from revenue driven metrics to earnings driven metrics. Thus, this equity valuation will use the multiple determined in formular (15), the PER. This multiple has certain advantages, especially for mature companies, as it uses a measure which is dependent on the capital structure employed, implying that well managed firms with an optimal capital structure will have a higher ratio, *ceteris paribus*.

Enabling the possibility of measuring the final financial result, i.e. net income of the firm, allows to control for all external and internal firm specific characteristics. Hence, the ratio is dependent on where the company is located, how it is managed. Hence, measuring the assets specific ability to generate cashflows.

$$Equity Value = Net Income_{Spotify} * \frac{Price_M}{Net Income_M} \quad (15)$$

Such an approach is recommended by Aswath Damodaran, and applicable to this project because Spotify Technologies S.A. does not have any comparable companies within its niche sector. Either they deviate significantly in main inputs, or do not operate solely in the music streaming industry, thus, not providing financials achieved by their music streaming service. Furthermore, the employed market regression solely focuses on fundamental financial data, rather than factoring in qualitative measures.

3. Valuation

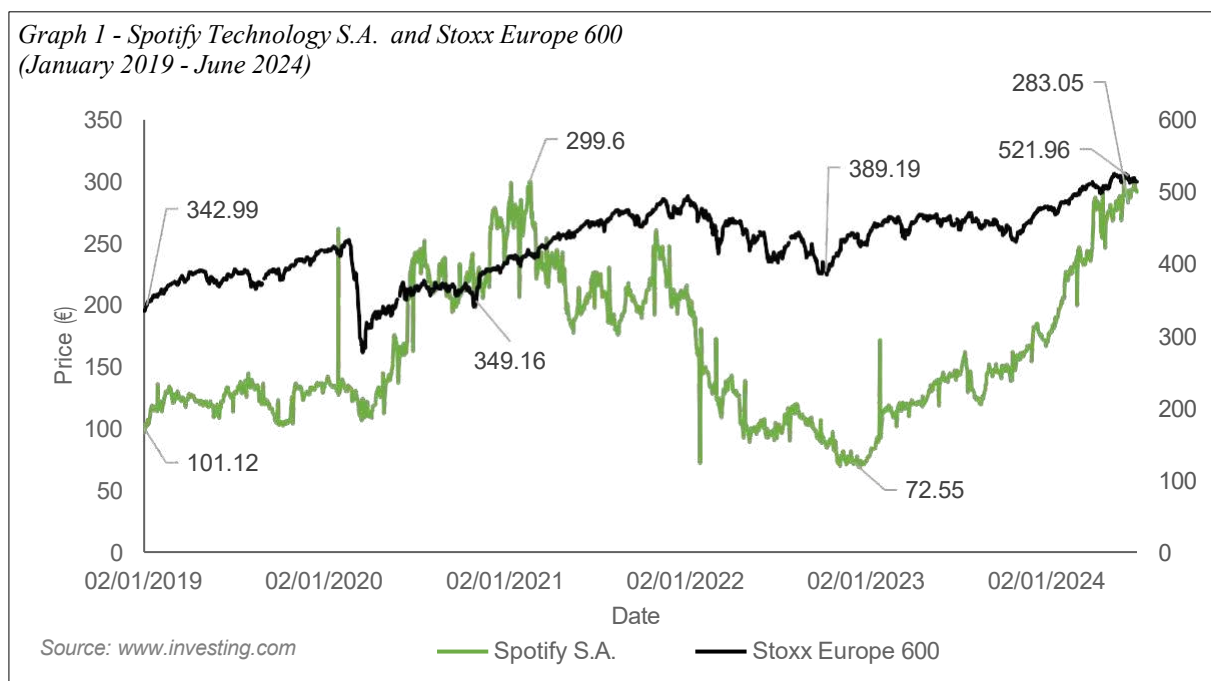
3.1. Company Overview

Spotify Technology S.A. (Spotify) was founded in 2006 by Daniel Ek and Martin Lorentzon. Since its foundation, Spotify became a global leader in the field of audio streaming services. The company is headquartered in Luxembourg and its operational center is based in Stockholm, Sweden. Spotify has transformed the music industry by providing a user-friendly platform that offers almost unlimited access to millions of podcasts, audiobooks and songs.

The company had its initial public offering on the 3rd of April 2018. Its common shares are currently traded at €288.90 as of 30th of June 2024, with 200.808.171 outstanding shares, whereas 148.568.211 are in free float. Therefore, the market capitalization has been €58,013,480,601.90 at the respective date.

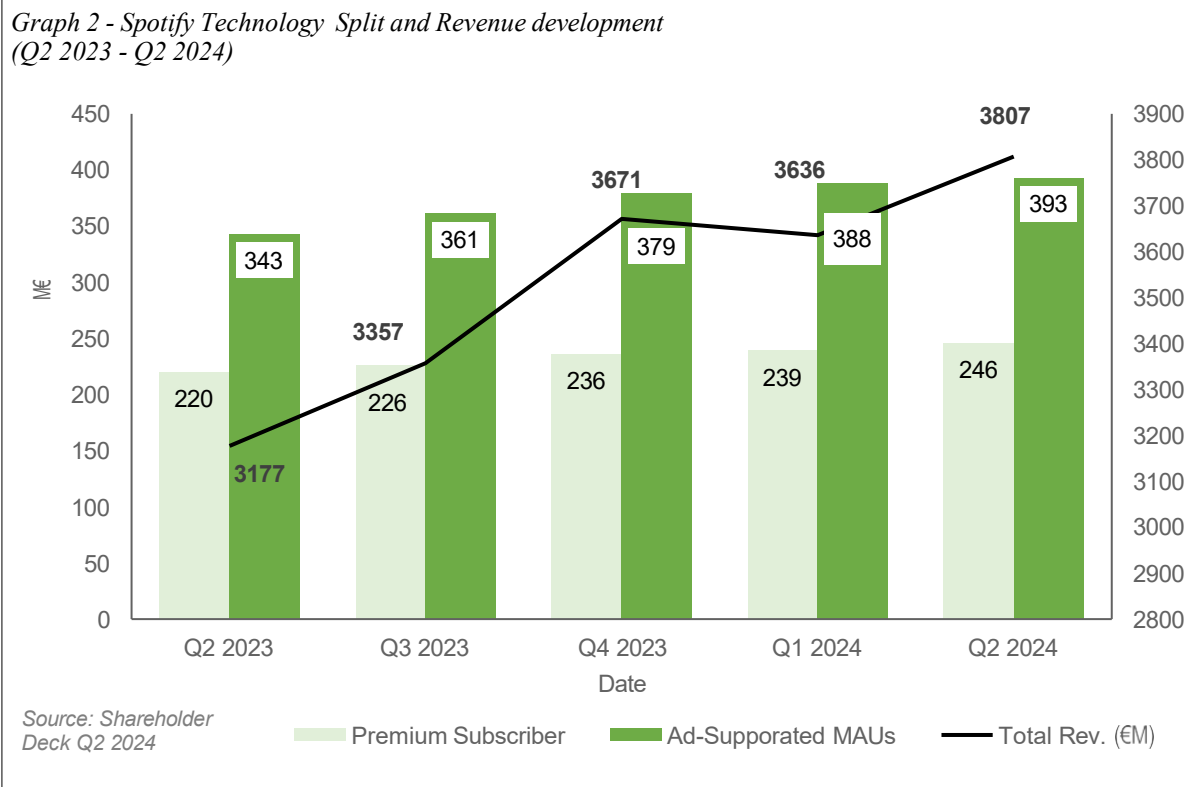
As seen in graph 1, Spotify's stock price development compared to the Technology Stoxx Europe 600 is rather volatile and went through a sharp decline post COVID-19, with its minimum at €72.55. Furthermore, the movement is similar but with a higher magnitude to prosperity and crisis. Which is underpinned by the beta coefficient of 1.58.

Nevertheless, Spotify experienced a rapid growth phase in 2023 and thereafter. Starting with a price per stock of €101.12 in January 2019, increasing to €288.90 by June 2024. Representing a compounded annual growth rate of 21.2%.



The business model of Spotify employs a freemium segment, offering users the option of an ad-supported free tier or a premium version which is an ad-free subscription. As of Q2 2024, Spotify has 626 million monthly average users (MAU), separated into 246 million paying subscribers, reflecting a 14% annual growth rate year-on-year (Y/Y). On the other hand, 393 million Ad-Supported MAU, representing an 15% growth rate Y/Y. The premium trajectory increased its revenue stream in Q2 2024 by 21% Y/Y, to \$3.351 billion, which results from an increased customer base and price increases. The Ad-Supported business line increased its revenue by 13%, to \$456 million. The past growth is consistent with the company's strategic focus on innovation, data-driven insights, and the deep integration of technology into the entertainment and music sectors. Spotify's continuous efforts to innovate in areas such as algorithmic song recommendations, exclusive content, and artist partnerships have contributed to the strength of its leading position in the industry.

As shown in graph 2, Spotify grew significantly over the past year, but compared to its prior growth, Spotify experienced a relative decrease in its growth rate. Combined, Spotify increased its MAU by 13.5%, and its revenue in the same period by 19.8%.



Spotify's operating income has been €266 million in Q2 2024, leading to an operating margin of 7%. Furthermore, the free cash flow in Q2 2024 reached €490 million, representing the record high in the company's history. Spotify had tremendous problems in achieving

continuous positive cash flows in the past, nevertheless, since 2024 Spotify steadily realizes a positive operating income and positive free cash flows. Additionally, Spotify starts to achieve rather strong margins in its industry, i.e. a total gross margin in Q2 2024 of 29%, consisting of 31% from the premium service, and 13% in the Ad-Supported segment. Furthermore, an absolute decline in personnel and marketing expenses, which decreased from €1,499 million in 2022 to €1,400 million in 2023. Which were driving the decline by 16% Y/Y in operating expenses.

3.2. Industry Analysis

Spotify Technologies S.A. provides its services in a highly competitive and dynamic sector, the technology entertainment sector, which is classified as an oligopoly market with 8 key players around the world, as seen in Table 5: Historical market development (2017 – 2022), consisting of Alphabet, Amazon, Apple, Deezer, Reliance Industries, Sirius Xm Holdings, Soundcloud Limited, and Spotify. The total addressable market (TAM) is based on 1 billion users, with an average revenue per user (ARPU) of \$29.99 per annum, resulting in a TAM of €29.99 billion, as of 2024. The market is expected to expand to 1.1 billion users by 2027, accompanied by an increase in ARPU to €30.33, i.e. expected to reach a TAM of €33.6 billion by 2027, which furthermore implies a compounded annual growth rate (CAGR) of 8.4% as well as an increase in user penetration rate up to 14.1% by 2027, which is currently 12.7%. The highest penetration rates in this sector are achieved in the United States with 42.6%, United Kingdom 38.2%, Sweden 35.8%, and Germany 29.6%. China and Australia have a penetration rate of over 20% and the African continent is consistently under 10%. Brazil, Argentina, Chile, and Colombia are above 15%. Spotify's free tier MAU geography split in Q2 2024 is as following, Europe 28%, North America 18%, Latin America 22%, and the rest of world cohort 33%. On the other hand, the premium subscriber split is significantly different, Europe 38%, North America 27%, Latin America 22%, and the remaining 13%, which indicates that Spotify has similar regional strengths in market penetration and premium subscriber conversion as the whole sector, i.e. high in Europe and North America but weakens to convert Ad-supported users in Africa and the eastern hemisphere into premium subscribers.

3.2.1. Competitive Analysis

The thread of new entrants in the music streaming industry is relatively low, since the entry barriers are high, meaning that it requires significant investments to enter the market. Capital would be needed to build the technological infrastructure, acquire content licensing, and

massive capital spending on marketing and sales. Therefore, player in the music streaming sector will not experience high pressure through new entrants but very much more rely on defending their market shares. Whereas Spotify currently holds 31.7%, Tencent Music 14.4%, Apple Music 12.6%, Amazon 11.1%, YouTube Music 9.7%, NetEase 6.7%, Yandex 3.4%, Deezer 1.3% and the remaining competitors 9.7%.

Secondly, the bargaining power of suppliers is extremely high in the music streaming industry. As publishers, artists, and music labels can ultimately control their licensing strategy and whom they are selling them to. In detail, Spotify prices its licenses often through payment per stream, i.e. they pay their content suppliers €0.003 to €0.005 per click. Converting fixed into a variable costs, since instead of paying a fixed negotiated amount, the spending relies on its own software traffic and hence on its revenue. Illustrated by the song Blinding Lights from The Weeknd, which is the most streamed song with 4,486,377,963 clicks, leading to €22,431,889 operating expenditures, for one song.

Nevertheless, Spotify tries to mitigate such dependencies through diversification. Thus, Spotify offers a diverse range of content, e.g. video podcasts, audiobooks, songs, regular podcasts, and exclusive artist deals. As of 2023 Spotify contained over 100,000,000 tracks and 5,000,000 podcasts. In 2024 Spotify expanded its podcast offering by 250.000 shows and included over 250.000 new audiobook titles into their premium subscription content. Nevertheless, the sector is well known for its thin margins, which on average ranges between 20% to 30% gross margin. Where Spotify is placed in the middle, consistently achieving a gross margin of 26%.

Since, the music industry is an oligopolistic market, customers could easily switch to competitors, which are listed in Table 5: Historical market development (2017 – 2022). Hence, it is vital to create a sticky business model so that the expansion of prices does not lead to tremendous customer loss. Spotify tries to constantly improve their user experience and the customers dependencies on Spotify's services, such as customers can create their own playlists, which can contain hundreds of songs. In such extent it is hard for user, to shift their provider. Furthermore, they implemented in 2024 an AI-Playlist tool, creating individual and customized playlists which get better and better, based on the data collected. Combined with the ability to create playlist by using user defined prompts. All these implementations create stickiness so that they can slowly increase prices without losing their customer base. Resulting in a subscriber growth rate of 12% Y/Y and an increase in ARPU of 8% Y/Y in Q2 2024.

On the other hand, Ad-Supported revenue grew by 13% Y/Y. This expansion is due to increased pricing along with gains on impressions sold, which is part of the ad-supported revenue strategy. Spotify is also trying to expand it by implementing the Quick Audio tool in 2024, a generative AI-based tool, enabling advertisers to create scripts and voiceovers. Additionally, it is highly important to point out that creation of stickiness and stability on both of their revenue streams is vital for Spotify, so they can continue to realize positive free cashflows. With a revenue split of 88% premium subscriber and 12% advertising such dependency on both streams is coherent.

The threat of substitutes in the music streaming industry is relatively small, since customer preferences shift more and more to on-demand music streaming and personalized music services. Represented by the CAGR of 8.4% in the TAM until 2027. Traditional services such as radio and other forms of media consumption opportunities are declining. Preferences shift towards Spotify's business model and services. Therefore, overall demand and market growth creates much more of a tailwind than a headwind.

Lastly, competitive rivalry. This area has the potential to be a massive headwind for Spotify, as Spotify follows a vertical approach, and only offers niche solutions in small margin segment. Whereas Apple, Amazon and other competitors follow a horizontal approach, such as creating whole ecosystems for their customers serving as providers of all-in-one solutions. Hence, they are operating in high and low margin segments, enabling them to follow different pricing strategies to eliminate competition. Therefore, Spotify needs to offer better solutions in their niche segment. This requires Spotify to maintain high research and development (R&D) expenditures, to foster the innovative data-driven and user-based service offering. Which is at the center of its business model. Spotify has currently the largest customer base, thus it is of highest importance that they can defend their market share against the highly pressuring horizontal business models.

3.3. Spotify's transition

In order to employ the correct valuation methods, combined with an appropriate forecast it is necessary to detect the current life cycle stage of Spotify. The following two chapters, namely

3.3.1. Strategy shift and 3.3.2. Implications will outline that Spotify is on the brink of becoming a mature growth cycle company. Based on the qualitative and quantitative argumentation for such transition, this thesis will highlight the resulting implications for the value estimate.

3.3.1. Strategy shift

Historically, Spotify experienced rapid growth, with its share price valuation highly based on user acquisition and market expansion. As Spotify's market share is 31.7%, its position as a market leader requires a strategy change. The business model is shifting, moving from a growth-at-all-costs approach to one which is focused on optimizing costs, stabilizing growth, and generating predictable cash flows. Nevertheless, this new position in the market brings several hurdles for the business model, now it is expected to deliver consistent returns to shareholders, by optimizing their costs, stabilize their growth and earn predictable cashflows.

Founded in 2006, Spotify has now been operating for over 18 years. As Spotify transits from its high growth phase into a mature growth stage, its focus has shifted from market share expansion in aggressive manner to sustaining profitability and delivering value to shareholders. Which is based on the new management strategy, the pursuit of revenue stream diversification. Spotify has started to acquire several businesses to expand into new spaces of the streaming industry, whereas diversification indicates an evolution of the company growth cycle. Therefore, they have acquired Gimlet Media in 2019, a podcast production company. Parcast also in 2019, a podcast studio, so they can broaden their podcast offerings. The Ringer in 2020, a media company, focused on pop culture podcasts. Megaphone in 2020, an advertising and publishing platform. In 2021 they bought Podz and Whooshkaa, a startup machine learning company and a podcast technology platform. They latest two acquisitions have been Findaway an audiobook distribution platform and Sonantic a UK-based artificial intelligence platform. All those acquisitions targeting the stickiness of their services and diversify their offerings. So that Spotify will finally be able to generate constant positive cashflow.

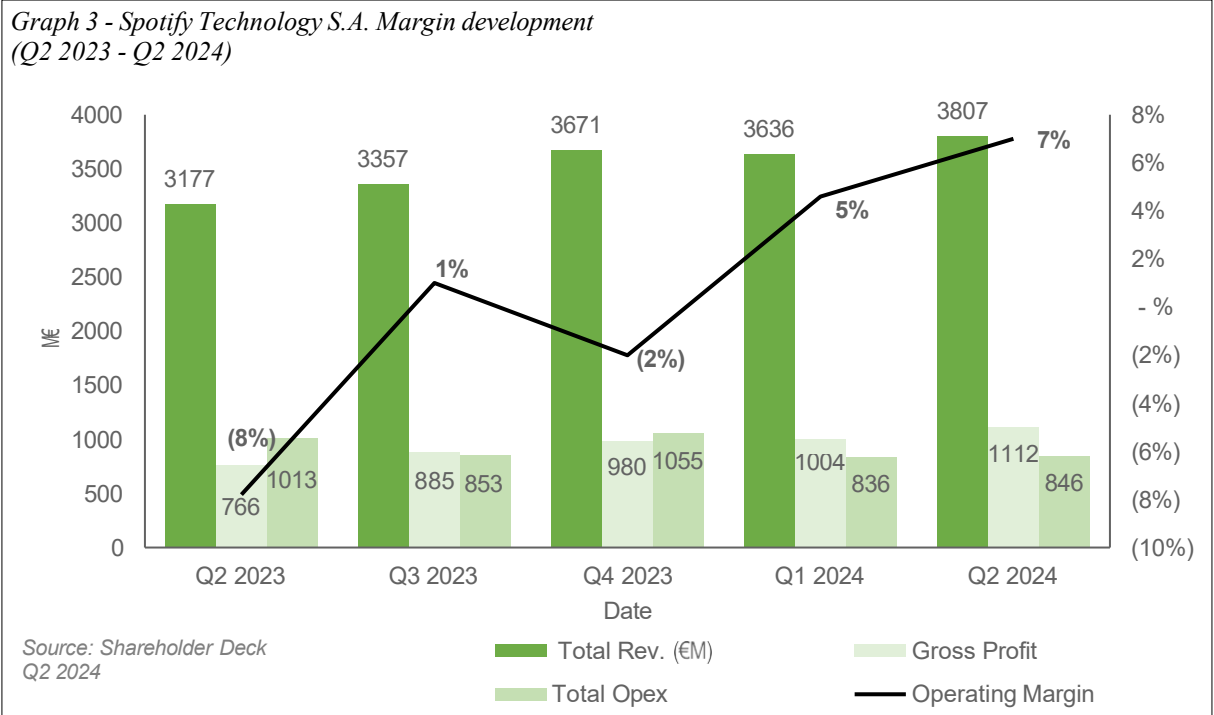
Spotify's revenue growth has moderated as the market matures, also reflected in Spotify's shift from rapid expansion centric to stabilization focused. Whereas the stabilization focused approach increases operational efficiency and revenue stream diversification. Based on Spotify's gradually improving margins.

Spotify is also actively monitoring and managing its working capital. As chapter 3.4.4. Working capital will show, Spotify's working capital is consistently decreasing since several years. Thus, the management achieves negative deltas in working capital, which impacts the FCFF positively.

Graph 3 quantitatively underlines the management strategy shift. Indicated by the operating margin increase of 15%. Coming from (8%) in Q2 2023, increasing to 7% by Q2 2024. In the

same period, operating expenses are decreasing on a total basis, €1,013m in Q2 2023, to €846m in Q2 2024. Resulting from the target strategy to decrease overhead costs and realize stable operating margins in the future.

The loewen part of the operating expense decrease is coming from a reduction in selling, general and administrative spending. Decreasing from €2,241m by Q2 2023, to €1,929m in Q2 2024. Furthermore, Spotify’s gross profit is increasing from €766m in Q2 2023 to €1,112m in Q2 2024, representing a 41.1% growth Y/Y. Thus, Spotify’s cost structure is decreasing on an absolute basis while the revenue growth rate is reaching a moderate level. Such developments show that Spotify shifts its strategy from a growth-at-all-costs approach to a margin centered strategy, i.e. the mature growth cycle.



3.3.2. Implications

Spotify’s strategic shift has significant implications on the selection of the correct valuation approach as well as its employed characteristics. Hence, the absolute valuation approach and the two-stage DCF approach will need to reflect such transition. Spotify’s explicit forecast period will account for the next 3 years, during which the company will stabilize margins, cut costs, and achieve greater predictability in earnings. Overhead reductions and cost efficiency, particularly in marketing and administration, will be necessary to offset the company’s limited ability to increase profits significantly due to the industry's low-margin nature, and the bargaining power of their suppliers.

Furthermore, implications for the relative approach have to be considered, as Spotify moves into a more mature growth stage, traditional revenue multiples are less relevant. Instead, valuation will focus on earnings-based metrics, such as Price-Earnings-Ratio (PER). Which emphasizes the company's shift from prioritizing growth to optimizing margins and generating positive cash flows.

Key questions regarding the transition are: Can Spotify raise prices without significant customer loss, given the price elasticity of demand for its service? Is Spotify's service sufficiently sticky to retain users and reduce its churn? Can Spotify generate consistent cash flows in a low-margin industry, and how sustainable is this model in the long run? How quickly can Spotify execute its strategic shift, and what are the key risks involved? Can Spotify defend its market share, particularly if competitors maintain lower pricing patterns?

All those questions need to be addressed and will be discussed in the following paragraphs.

3.4. Forecast

This section will focus on the detailed forecast of Spotify's financials, with the target of reaching a stable growth state, which results from a bottom-up approach. This forecast will comprise 3 explicit years in which Spotify transits towards a stable growth state with enhanced margins, relative lower costs and a mature revenue growth. Furthermore, each chapter describes the exposure of the position and its prospective development to come up with the best estimate possible. A detailed growth rate and topline forecast can be seen in the appendix, Table 9: Growth ratios and Table 14: Revenue forecast.

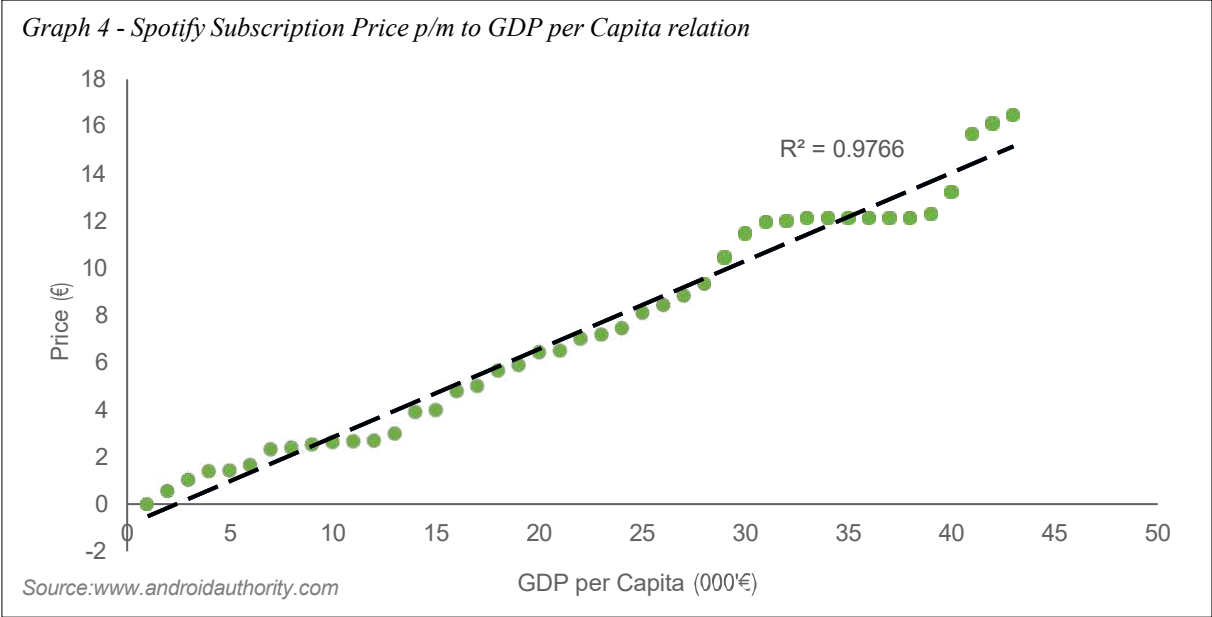
3.4.1. Subscriber based revenue

For the premium subscriptions forecast, which is referenced as the revenue resulting from revenue stream 1. For the estimation of revenue stream 1, one fundamental equation is utilized, as seen in equation (16). Which defines the revenue stream 1 as a function of the total number of subscribers multiplied by the revenue per user.

$$\text{Revenue Stream 1} = \text{Number of Subscriber} * \text{Revenue per User} \quad (16)$$

It is necessary to breakdown the different subscribers by region. Since Spotify determines its pricing strategy through the gross domestic product per capita level, thus each region has different pricing patterns. Spotify clusters its geography split into five regions, i.e. Asia and

Pacific, Europe, North America, South America, and Africa. Therefore, an explanatory regression was performed. Which the respective prices as dependent variable and the gross domestic product per capita as independent variable. Firstly, to determine how strong this relationship is. Secondly, to be able to explain future variation in pricing patterns by region. As seen in Graph 4, the gross domestic product per capita describes 97.66% in the variation of Spotify’s pricing patterns. Furthermore, it is possible to estimate future subscription pricings by the forecast on gross domestic product per capita level, done by (World Bank, 2024).

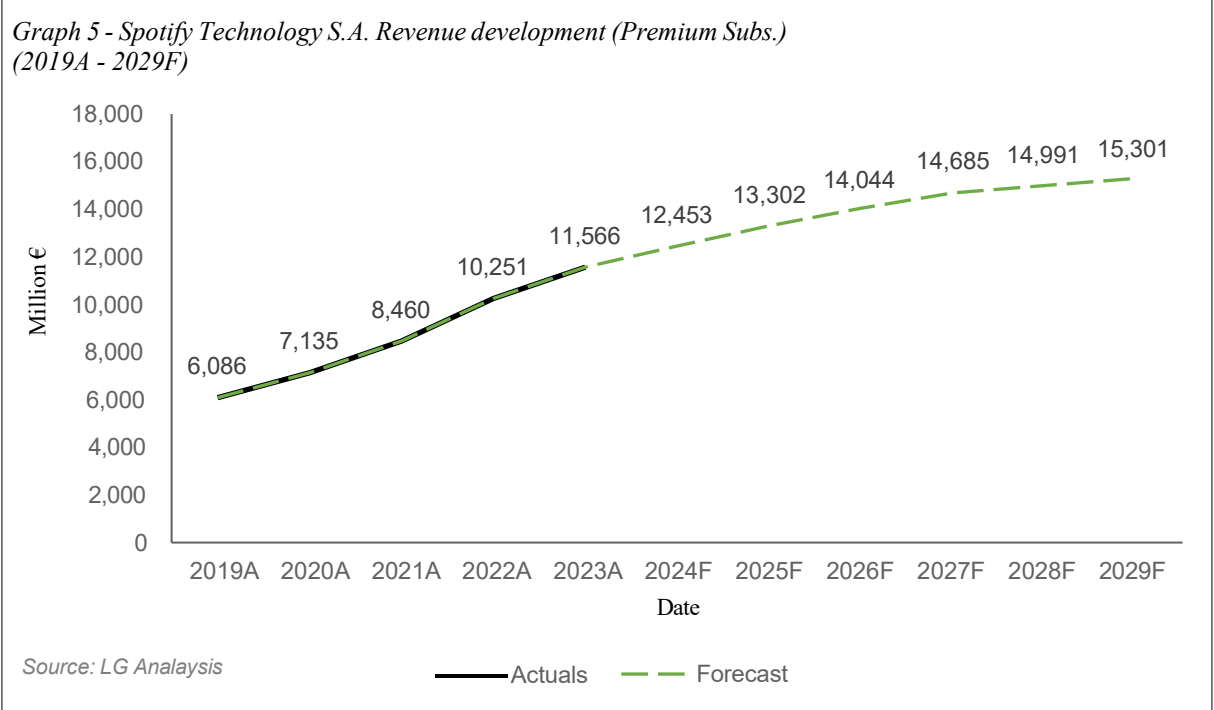


Secondly, the number of subscribers is a function of the total population by region and its prospective penetration rate. Since, the penetration rates differ significantly within the clustered regions, a weighted average approach was employed to estimate the respective rates. Afterwards, the future number of subscribers can be estimated by multiplying the total population in the clustered regions and its penetration rate, with data obtained from (Statista, 2024). Hence, an estimate of the total potential user base. Afterwards, adjusting this estimate by the market share belonging to Spotify and its respective premium user percentage to end up with the estimate on total premium users, as seen in equation (17).

$$\begin{aligned}
 & \text{Number of Subscriber} \\
 &= \text{Population}_x * \text{Penetration Rate}_x * \text{Market Share} \\
 & \quad * \% \text{ of Premium Subscribers}
 \end{aligned}
 \tag{17}$$

Whereas in the base case scenario, the market share and the percentage of premium subscribers is held constant, which is based on past patterns and future estimates. Thereafter, the respective prices as predicted by the regression are multiplied by the number of subscriptions resulting from equation (17).

As seen in Graph 5, Spotify’s estimated revenue stream 1 will reach a stable state in 2028F and reach €14,991m by then.



3.4.2. Ad-Supported revenue

The forecast on revenue stream 2, defined as the revenue resulting from ad-based revenue, i.e. the free tier. Which follows a similar regional cluster as the estimates on revenue stream 1.

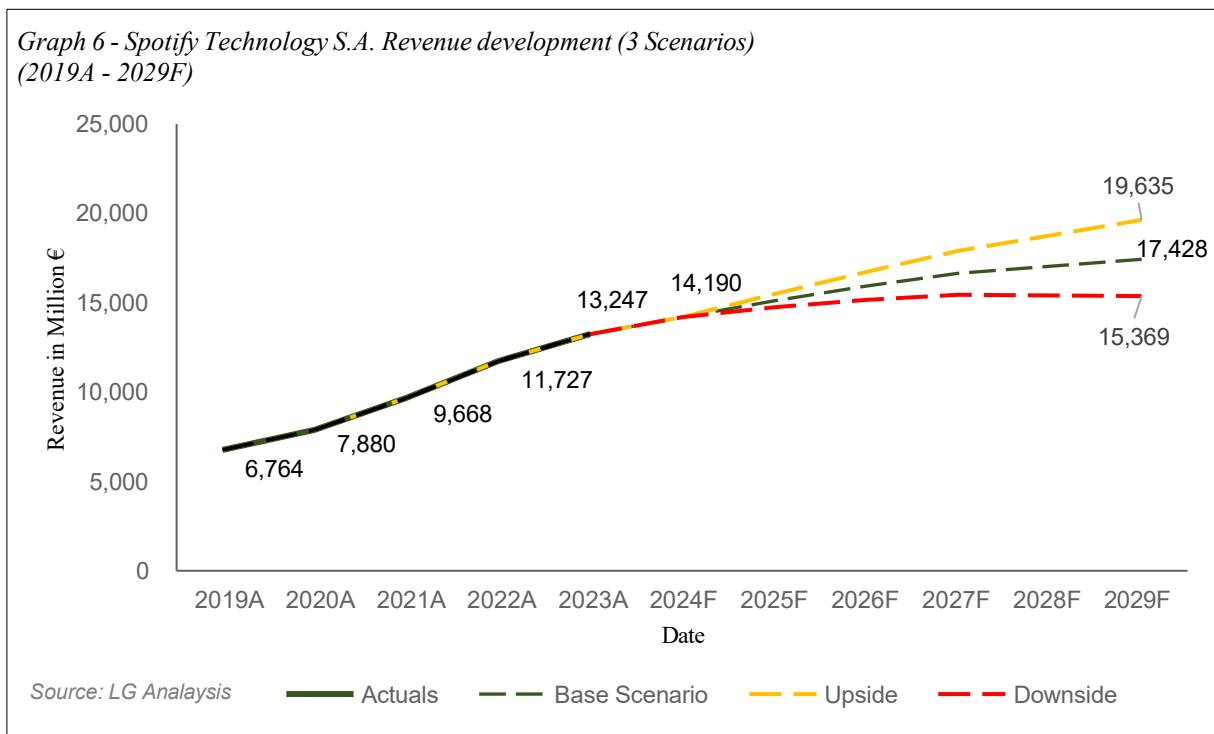
Nevertheless, it can be estimated through a different equation, seen in equation 18. Therefore, revenue stream 2 is a function of the number of users in the free tier (*calculated as: 1 - % of premium user*) multiplied by firstly, the average time each user spends on the application. Secondly, the ad load Spotify can provide. Thirdly, the click through rate on the advertisement. Lastly, the respective prices per click.

Such parameters follow the same geography cluster as the premium tier. As already indicated by the forecast on revenue stream 1, revenue stream 2 also reaches its stable state in 2028F.

$$\text{Revenue Stream 2} = \text{Annual average user}_x * \text{Time per User}_x * \text{Ad Load}_x ** \text{Click through Rate}_x * \text{Cost per Click}_x \quad (19)$$

Nevertheless, as seen in graph 6, it is not certain whether Spotify can defend its market share and premium user base. Therefore, an additional downside and upside scenario have been created, to define and control such assumptions.

Hence, a diversion of 0.5% Y/Y over 6 years, in market share and premium user base leads to a 27.76% range in total revenue. Resulting from an upside scenario with a final market share of 35% and premium user of 37% by 2029F. The downside consists of 29% market share and 43% premium user. Starting from the base case of 32% market share and 40% premium user base. Such base case has the highest likelihood. Spotify has been historically on a very stable level, in both parameters.



The estimated weights per revenue streams is also in line with the historicals. Consisting of a 88% part for revenue stream 1 and 12% from revenue stream 2.

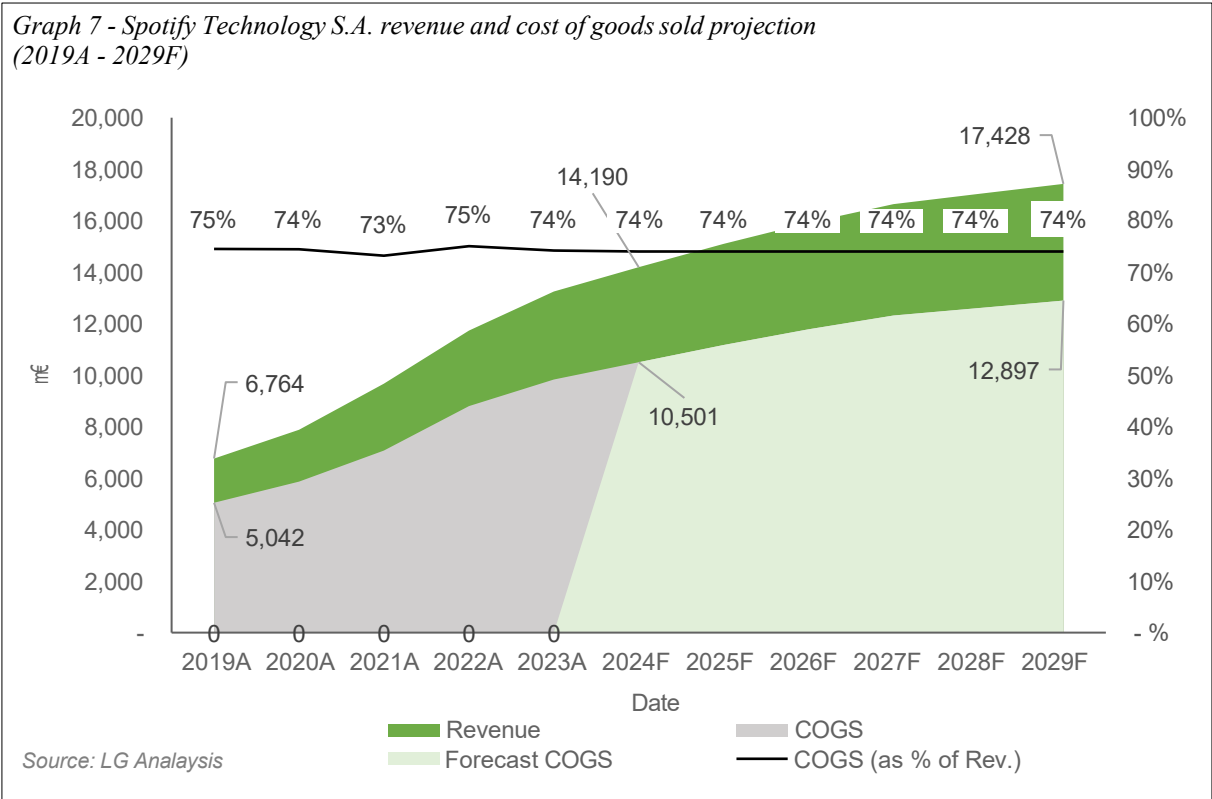
3.4.3. Operating expenses

To forecast operating expenditures for Spotify, it is vital to understand its nature. The variable costs resulting from the costs of goods sold, i.e. royalties to provider of licenses, are significant.

As earlier mentioned in the porter five forces analysis, the bargaining power of suppliers in the music streaming industry is tremendous. Not only Spotify but furthermore all provider of songs and podcasts are price takers. Hence, license costs depend solely on the price settings by the provider. The industry and pricing strategies show, that these costs are constantly between 72% and 75%.

Spotify is no exception to this, in the past the costs of goods sold (COGS) have been and are expected to stay constantly between 73% to 75%. As seen on Graph 7, the base case COGS forecast is based on the past patterns. In 2019 Spotify had a 75% ratio of COGS to revenue, in absolute terms €5,042m to €6.764m. Which had decreased over time in relative terms to 74% by the end of 2022, going through an all-time low in 2021A with 73%. Which may result from their tremendous growth during the financial year 2020, with a CAGR of 22.7%.

Due to the thin margin nature of the music streaming industry, every percentage point has a significant impact on the financial performance of a company. The forecast deals with the fact that Spotify is the market leader in the music streaming industry, which also comes with certain advantages such as leverage in negotiations. Thus, Spotify is expected to operate its business at a 74% COGS to revenue ratio. Not going down to their all-time low in 2021, since they shifted their strategy towards maintaining their market share rather than capturing more than their current market share of 31.7%.



Spotify's fixed costs mainly result from selling, general and administrative (SG&A) expenditures. Historically, Spotify's SG&A costs have been in line with the industry's average, ranging from 15% to 19%.

SG&A is separated into two main cost categories, i.e. sales and marketing (S&M), and general and administrative (G&A), in their respective order accounted for 70% and 30% of overall SG&A expenses. Its development was stable in the past, until Spotify shifted gears and started to cut jobs, in order to become a profitable business.

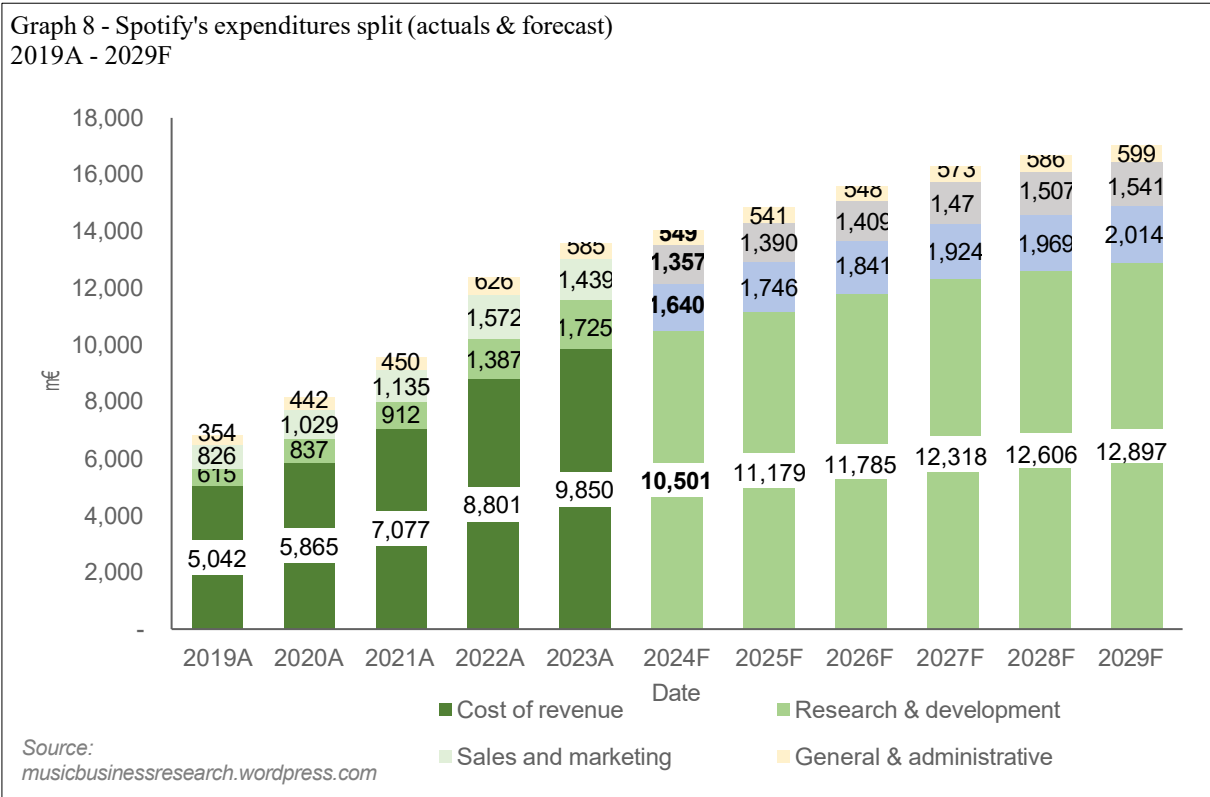
By early 2023 Spotify dismissed 500 employees, accounting for 5% of total workforce. Furthermore, they reduced their S&M spending, which is in line with their target strategy, to become profitable and maintaining instead of expanding its market share. Since an expansion in customer base would require an increase in S&M rather than a cost cutting program. All these shifts resulted in a drop from 19% to 16% of SG&A costs, as percentage of revenue.

Spotify announced in late 2023 an even more extensive cost cutting program will arise. The first is a further reduction in head count, as they plan to cut 2500 employees by 2024, which amounts to 25% of total workforce. Therefore, Spotify will reduce its wages and salaries by €38m in 2024, which enters the forecast by a €38m decrease in G&A spending.

Secondly, Spotify implements a new firm rule: <Today, Spotify hosts well over 100 million tracks. Tens of millions of them have been streamed between 1 and 1,000 times over the past year and, on average, those tracks generated \$0.03 per month. Because labels and distributors require a minimum amount to withdraw (usually \$2-\$50 per withdrawal), and banks charge a fee for the transaction (usually \$1-\$20 per withdrawal), this money often doesn't reach the uploaders. And these small payments are often forgotten about. But in aggregate, these small, disregarded payments have added up to \$40 million per year, which could instead increase the payments to artists who are most dependent on streaming revenue.= (Alda, Music Streaming - Worldwide, 2024). Therefore, as seen by Graph 8 G&A costs drop from a total of €585m to €549m, assuming an exchange rate of 0.9, by 2023 to 2024F.

Thirdly, research and development (R&D) costs have evolved steadily, increasing from €826m in 2019A to €1.439m by 2023A. In relative terms, R&D was always an important investment for Spotify, developing from 9% to 12% respectively, as percent of revenue. Nevertheless, in the past this investment was particularly important to capture market share, become a disruptive leader, and create a sticky service for their users. Since, management strategies and incentives shifted, this forecast does not expect a further increase in relative terms. Spotify is firstly, now

at the top of R&D spending in their industry. Secondly, investors do not only care about growth anymore but want to realize free cash flow.



Thus, Spotify can maintain a relative 12% spending on R&D, and ceteris paribus realize an operating profit of €172m by 2024F, resulting in an operating margin of 1%.

The remaining cost part capital expenditure (CAPEX) is not material, Spotify was spending less than 1% on CAPEX over the past three years. Spotify outsourced such dependencies, all services are run on cloud basis. Therefore, CAPEX as well as depreciation and amortization (D&A) are insignificant for Spotify's business model. For further forecast considerations, CAPEX is held constant at 0.05% as they have been historically. Additionally D&A is estimated at a relative level of 100% of CAPEX. A table can be seen in the appendix, Table 13: Operating profit projection

3.4.3. Tax rate

Since Spotify have not been profitable in the past, and their taxable income ranged from -€709m to €249m over the past 5 years, it is not realistic to get the best estimate by looking at past performance.

Whereas the future will give rise to an estimate. In awareness of the positive projections, Spotify will reach the average industry tax rate swiftly. During to industry, country and firm specific characteristics, the projected tax rate will not be the marginal tax rate.

Regarding Spotify, which is headquarter in Luxembourg, and thus subject to the country specific regulations. Luxembourg's average tax rate is 23.87%, consisting of three inputs, i.e. corporate income tax rate, which drops from 17% to 16%, municipal business tax, and solidarity surcharge (PwC Luxembourg, 2024). Hence, the best estimate possible is the average tax rate, i.e. 23.87%. Nevertheless, high uncertainties surrounding such estimate. Hence, later chapters will control for such tax rate estimate and perform a sensitivity analysis respectively Table 2: Sensitivity analysis.

3.4.4. Working capital

A working capital analysis is obligatory to determine the capital requirements of the business. Hence, to determine the reinvestment needs of Spotify, to maintain its operating activities.

As outlined earlier, Spotify's business model solely consists of providing music stream services to customers while achieving revenue through subscriptions and advertising. Regarding their subscription-based business model with 88% coming from such revenue cohort, a negative working capital is anticipated. Subscription-based revenue results in customer advances, and accrued expenses for license royalties. Which both have a significant negative impact on the working capital level and the cash conversion cycle.

As seen in Graph 9, the average cash conversion cycle is (1), indicating that Spotify can continue its current operations without additional capital requirements. Furthermore, Spotify's days sales outstanding ranging between four to seven days on a quarterly basis, which is compared to other industries relatively low, but in line with their business model and industry standards. On the other hand, days payables outstanding range from five to seven days. The relation of days payables to days receivables lead to the negative cash conversion cycle. At the same time Spotify does not have any inventories. The detailed working capital and cash conversion analysis can be seen in the appendix, Table 11: Net working capital and Table 10: Cash conversion cycle.



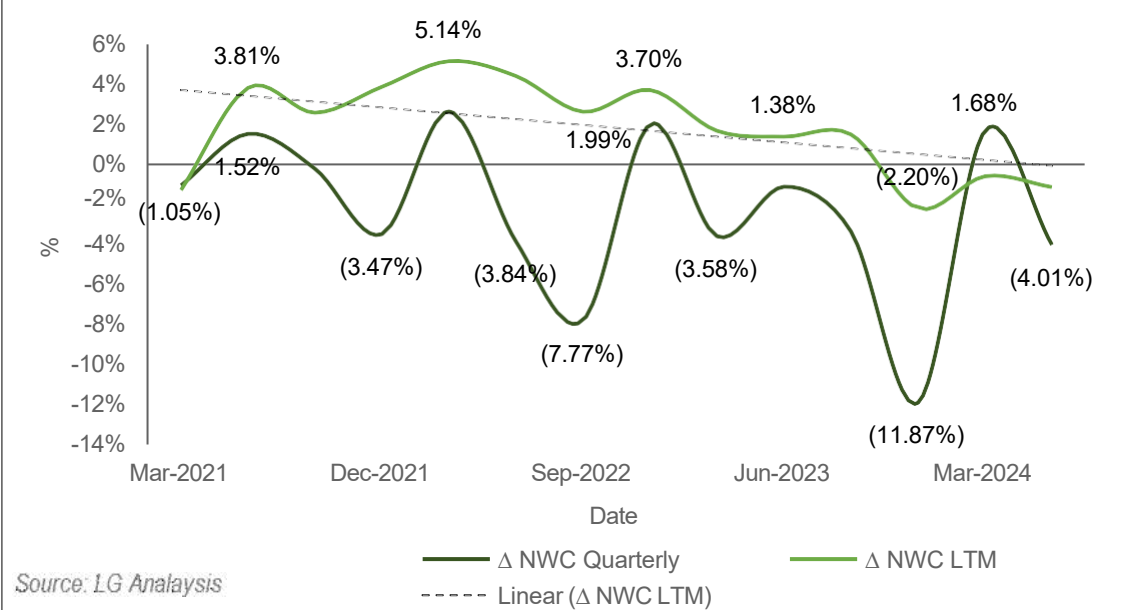
As seen in Graph 10, Spotify seems to gain bargaining power. The net working capital is decreasing since December 2021, which underlines the shift in management strategy towards becoming a profitable and sustainable business model. Until the end of 2021 Spotify's delta in net working capital increased on a last twelve-month basis, hence, the business required cash to maintain its operations. But since then, this level is continuously decreasing, reaching its negative peak of (2.20)% by March 2024. This decrease is mainly due to a change in three positions, i.e. accrued expenses, customer advances, and payables.

Accrued expenses increased from €1,389m in March 2020 to €2,228m by March 2024. From March 2020 accounts payables increase from €377m to €715m by March 2024, an increase by 90%. Lastly, customer advances increase from €317m to €634m during the same time frame.

All of those positions have a negative impact on the working capital level, which lowers the capital requirements of the business and contributes to the sustainability of the operating activities, and result in an increase in FCF.

Therefore, estimated capital requirements and changes in working capital is negative. Nevertheless, since boundaries are already pushed on such positions with significant impact on the working capital level, it is not realistic that this trend will sustain on a perpetuity basis, much more maintain slightly negative due to the nature of Spotify's business model. Finally, the change in net working capital estimate is (0.61)%, as percentage of revenue.

Graph 10 - Spotify Technology S.A. NWC Analysis (Q1 2021 - Q2 2024)



3.4.5. Discount factor

Spotify has its operation separated into four major regions, Europe, Latin America, North America, and the so call rest of the world mainly consisting of Africa and China. Thus, to estimate the equity risk premium for the respective cash flows, a weighted country risk premium approach is appropriate, in respect to the proportional revenue.

Since Spotify has two revenue streams, i.e. premium and free tier. All regions are listed in respect to their proportional revenue which is afterwards scaled to 100%. The respective estimated country risk premiums are 4.60% for Europe, 9.00% for Latin America, 4.60% north America, and 13.20% for the rest of the world. Those have been multiplied by the scaled weight to get the total weighted country risk premium of 6.90%.

Secondly, a 10-year zero coupon bond of Germany was employed to estimate the risk-free rate, i.e. 2.21%. Which is utilized since Spotify Technology S.A. is headquartered and listed in Europe and the Euro is its functional currency. Thus, Spotify reports in Euros which furthermore implies that their overall exposure is relative to the Euro, in which German zero-coupon bonds provide a robust risk-free estimate. Thirdly, the beta of Spotify is observable at Refinitiv Eikon, reporting a beta of 1.58, which represents a monthly average over the past 5 years. Thus, following to the capital asset pricing model, Spotify's estimated cost of equity is 13.11%.

On the other hand, Spotify has no credit rating outstanding. Nevertheless, it is possible to estimate a rating with its last trailing twelve-month income statement. Utilizing the interest coverage ratio as a proxy, which is calculated by dividing the operating income by interest expenses, resulting in a coverage ratio of 10.86x. Which implies a AAA rating and a spread of 0.59%. Adding the spread to the risk-free rate of 2.21% yields a total after tax cost of debt of 2.80%.

Secondly, the cost of debt can be estimated through the observable yield to maturity of its outstanding zero-coupon bonds, which is 5.48%. The debt structure of Spotify is split into two parts. Firstly, interest bearing straight debt, including capital leases which represent €346m. Secondly, zero coupon bonds, which account for a market value of €1,350m. Hence, the total interest expenditures were divided by the portion of interest-bearing debt, resulting in 10.98%. Furthermore, the historical cost of debt was used to convert the book value of straight debt into its market value. Yielding an €677,005,588 estimated market value of debt plus the market value of bonds outstanding, i.e. €1,350,000,000, gives a total estimated market value of €2,027,005,588 for debt. The respective weights are 33.40% and 66.60%. Which are employed to estimate the weighted cost of debt of 7.32%.

Finally, each component is weighted proportionally to the total capital, to determine the WACC (7). Thus, weight of equity 96.67% multiplied by cost of equity 13.11% and the weight of debt of 3.33% multiplied by after tax cost of debt of 7.32% resulting from the historical cost of debt and 3.33% from the estimated rating. Ending in Spotify's estimated weighted cost of capital of 12.76% in respect to the interest coverage ratio, and 12.91% regarding the historical cost of debt approach.

3.5.6. Treasury Stock Method

Spotify Technology S.A. has 9,394,011 options outstanding, which can have a significant impact on the estimated price per share. In order to account for such risk, the treasury stock method (TSM) is employed. One underlying assumption needs to be considered, such as the treasury stock is used to repurchase shares, to decrease the dilutive effect of convertibles.

All 9,394,011 outstanding options are in the money, at an average strike price of 173.18€. Resulting in a treasury stock of 1,626,854,824.98€. Such proceeds can be used to repurchase 5,529,758 shares at a share price of 294.20€, resulting in a total dilution of 3,864,252 shares.

Finally, Spotify has currently (*as of 30.06.2024*) 199,959,172 shares outstanding, further, adding the dilution from the convertibles, adds up to a total diluted share count of 203,823,424.

4. DCF

The DCF is composed in respect to the three scenarios, i.e. base case, upside, and downside. Starting with the revenue, subtracting the operating expenses and multiplying by the estimated corporate tax rate of 23.87% provides an estimated net operating profit after tax (NOPAT). Additionally, the reinvestment was subtracted to get the FCFF. Such reinvestment is composed out of three components, i.e. D&A, change in operating working capital, and CAPEX. Furthermore, the net debt position amounts to €2,210m, factoring in the market value of interest-bearing debt, bonds outstanding and cash and cash equivalents as well as deferred tax assets. This position is particular important to bridge the enterprise value to equity value.

The DCF consists of two stages, the explicit period and the terminal value. The aim of the explicit period is to forecast Spotify's FCFF until they reach a stable state in which the terminal value method can be applied. Those respective cash flows were then discounted to January 2025 and summed up. Thus, provides an estimate of the enterprise value. Secondly, adding the net debt to get an estimate for the equity value, which is lastly, divided by the total diluted share count, illustrative in Table 1: DCF FCFF (Base case).

Table 1: DCF FCFF (Base case)

Project Spotify - DCF FCFF analysis (Base case)										
m€	2019A	2020A	2021A	2022A	2023A	2024F	2025F	2026F	2027F	2028F
Revenue	6,764	7,880	9,668	11,727	13,247	13,999	14,902	15,710	16,420	16,804
Operating expenses	(6,837)	(8,168)	(9,571)	(12,384)	(13,358)	(13,855)	(14,674)	(15,391)	(16,087)	(16,463)
Operating income	(73)	(288)	97	(657)	(111)	144	228	318	333	341
Tax expenses (23.87%)	55	(128)	283	60	27	(34)	(54)	(76)	(79)	(81)
NOPAT	(18)	(416)	380	(597)	(84)	109	173	242	253	259
Reinvestment	(121)	(60)	(60)	15	(6)	(85)	(98)	(112)	(125)	(136)
FCFF	103	(356)	440	(612)	(78)	195	272	354	378	395
Cost of Capital							12.91%	12.91%	12.91%	12.91%
Cumulated WACC factor							0.89	0.78	0.69	0.62

PV(Terminal value)	2,598
PV(CF over the next 4 years)	781
Value of operating assets	3,379
Debt	2,027
Cash	4,214
Value of equity	5,566
Deferred tax asset	23
Total value of equity	5,589
Diluted number of Shares (in M.)	204
Estimated value /share	27.42
Current price per share	294.20
% Under or Over Valued	-90.68%

Implied forward Mult.	EV/Rev	EV/EBIT
	0.24x	23x

A benchmark valuation provided by Statista's report in 2024 is utilized to get a first glance on the resulting value estimates. Accordingly, the average enterprise to operating income ratio (EV/EBIT) for the western European entertainment software industry is 20x.

The base case scenario ends up in an estimate of 27.42€ per share, implying an 90.68% overvaluation but a forward EV/EBIT multiple of 23x, whereas the value comes by 77% from

the terminal value and 23% explicit period. The upside scenario estimates a value of 29.15€ per share, implied forward EV/EBIT of 25x, the value comes by 77% from the terminal value and 23% explicit period. Lastly, the downside provides a value estimate of 26.22€ per share, representing a forward EV/EBIT multiple of 21x, the value comes by 76% from the terminal value and 24% explicit period. The overall variation in value estimate is 10.01%. All of which is observable in Table 4: Football field analysis.

4.1. Sensitivity

The sensitivity analysis regarding the WACC, encompasses a marginal deviation in WACC, and is of high importance because it has a significant impact on the share price estimate. Such as a decrease in the WACC, from 12.91% to 11.91% increases the estimated price per share by 4.85%, which is absolute terms an increase from €27.42 to €28.75. Furthermore, an increase in WACC by 1%, i.e. to 13.91% results in a downside of 4.02%, which is in absolute terms, an estimated price per share of €26.32. The sensitivity is identical for the terminal growth rate, but inverted. As both variables determine the denominator with opposite impact.

The second sensitivity was created in respect to the estimated tax rate. Since the estimated tax rate is not observable and estimated by a country industry average from a study conducted by PricewaterhouseCoopers. To match such uncertainty, a decrease of 1% in the tax rate, i.e. from 23.87% to 22.87% results in an increased value estimate of 0.44%, which has the same magnitude for the upside. An illustrative example can be seen in the appendix, under Table 2: Sensitivity analysis. Furthermore, a tax rate of 24.87% results in an estimated price per share of 27.54€, *ceteris paribus*.

Table 2: Sensitivity analysis

WACC	Firm Value	Stock Price		Tax Rate	Firm Value	Stock Price	
12.91%	3,379	27.42		23.87%	3,379	27.42	
6.41%	7,523	47.75		17.37%	3,539	28.21	
6.91%	6,786	44.14		17.87%	3,527	28.15	
7.41%	6,194	41.23		18.37%	3,515	28.09	
7.91%	5,709	38.85		18.87%	3,502	28.03	
8.41%	5,303	36.86		19.37%	3,490	27.97	
8.91%	4,959	35.17		19.87%	3,478	27.90	
9.41%	4,664	33.73		20.37%	3,465	27.84	
9.91%	4,408	32.47		20.87%	3,453	27.78	
10.41%	4,183	31.37		21.37%	3,441	27.72	
10.91%	3,985	30.39		21.87%	3,428	27.66	
11.41%	3,808	29.53	1% Δ in CoC	22.37%	3,416	27.60	1% Δ in CoC
11.91%	3,650	28.75	4.85%	22.87%	3,404	27.54	0.44%
12.41%	3,508	28.05		23.37%	3,391	27.48	
12.91%	3,379	27.42		23.87%	3,379	27.42	
13.41%	3,262	26.84	1% Δ in CoC	24.37%	3,367	27.36	1% Δ in CoC
13.91%	3,154	26.32	(4.02%)	24.87%	3,354	27.30	(0.44%)
14.41%	3,056	25.84		25.37%	3,342	27.24	
14.91%	2,966	25.39		25.87%	3,330	27.18	
15.41%	2,882	24.98		26.37%	3,317	27.12	
15.91%	2,805	24.60		26.87%	3,305	27.06	
16.41%	2,733	24.25		27.37%	3,293	27.00	
16.91%	2,666	23.92		27.87%	3,280	26.94	
17.41%	2,603	23.62		28.37%	3,268	26.88	
17.91%	2,545	23.33		28.87%	3,255	26.81	
18.41%	2,490	23.06		29.37%	3,243	26.75	

4.2. Scenario

The scenario analysis was conducted to measure the uncertainty surrounding the terminal growth rate and the cost of capital estimates. By creating a simulation on possible future scenarios, ranging from a terminal growth rate of 0.34% up to 4.34%, and a cost of capital estimate from 10.41% up to 15.41%. As the base estimate is 12.91%, for the cost of capital and the estimate for the terminal growth rate is 2.34%. The most likely scenarios ranging from a terminal growth rate of 1.34% up to 3.34% and for the cost of capital from 11.41% up to 14.41%. The encompassing results range from 25.83€ per share up to 32.46€, representing a downside of 5.82% and an upside of 18.44%. Such simulation is shown in Table 3: Scenario analysis (Base case).

Table 3: Scenario analysis (Base case)

Simulation - Firm Value										
		Growth Rate								
		0.33%	0.83%	1.33%	1.83%	2.33%	2.83%	3.33%	3.83%	4.33%
Cost of Capital	7.91%	4,406.15	4,662.21	4,957.21	5,300.73	5,705.84	6,190.71	6,781.49	7,517.12	8,458.32
	8.91%	3,983.56	4,181.78	4,406.15	4,662.21	4,957.21	5,300.73	5,705.84	6,190.71	6,781.49
	9.91%	3,649.21	3,807.18	3,983.56	4,181.78	4,406.15	4,662.21	4,957.21	5,300.73	5,705.84
	10.91%	3,378.08	3,506.92	3,649.21	3,807.18	3,983.56	4,181.78	4,406.15	4,662.21	4,957.21
	11.91%	3,153.77	3,260.86	3,378.08	3,506.92	3,649.21	3,807.18	3,983.56	4,181.78	4,406.15
	12.91%	2,965.14	3,055.55	3,153.77	3,260.86	3,378.08	3,506.92	3,649.21	3,807.18	3,983.56
	13.41%	2,881.64	2,965.14	3,055.55	3,153.77	3,260.86	3,378.08	3,506.92	3,649.21	3,807.18
	13.91%	2,804.29	2,881.64	2,965.14	3,055.55	3,153.77	3,260.86	3,378.08	3,506.92	3,649.21
	14.41%	2,732.43	2,804.29	2,881.64	2,965.14	3,055.55	3,153.77	3,260.86	3,378.08	3,506.92
	14.91%	2,665.50	2,732.43	2,804.29	2,881.64	2,965.14	3,055.55	3,153.77	3,260.86	3,378.08
15.41%	2,603.01	2,665.50	2,732.43	2,804.29	2,881.64	2,965.14	3,055.55	3,153.77	3,260.86	

Simulation - Stock Price										
		Growth Rate								
		Δ on 1% -4.01%				Δ on 1% 4.85%				
		0.33%	0.83%	1.33%	1.83%	2.33%	2.83%	3.33%	3.83%	4.33%
Cost of Capital	10.41%	32.46	33.72	35.16	36.85	38.84	41.22	44.11	47.72	52.34
	10.91%	30.39	31.36	32.46	33.72	35.16	36.85	38.84	41.22	44.11
	Δ on 1% 10.84%	28.75	29.52	30.39	31.36	32.46	33.72	35.16	36.85	38.84
	11.91%	27.42	28.05	28.75	29.52	30.39	31.36	32.46	33.72	35.16
	12.41%	26.32	26.84	27.42	28.05	28.75	29.52	30.39	31.36	32.46
	12.91%	25.39	25.83	26.32	26.84	27.42	28.05	28.75	29.52	30.39
	Δ on 1% 4.18%	24.98	25.39	25.83	26.32	26.84	27.42	28.05	28.75	29.52
	13.91%	24.60	24.98	25.39	25.83	26.32	26.84	27.42	28.05	28.75
	14.41%	24.25	24.60	24.98	25.39	25.83	26.32	26.84	27.42	28.05
	14.91%	23.92	24.25	24.60	24.98	25.39	25.83	26.32	26.84	27.42
15.41%	23.61	23.92	24.25	24.60	24.98	25.39	25.83	26.32	26.84	

4.3. Monte Carlo

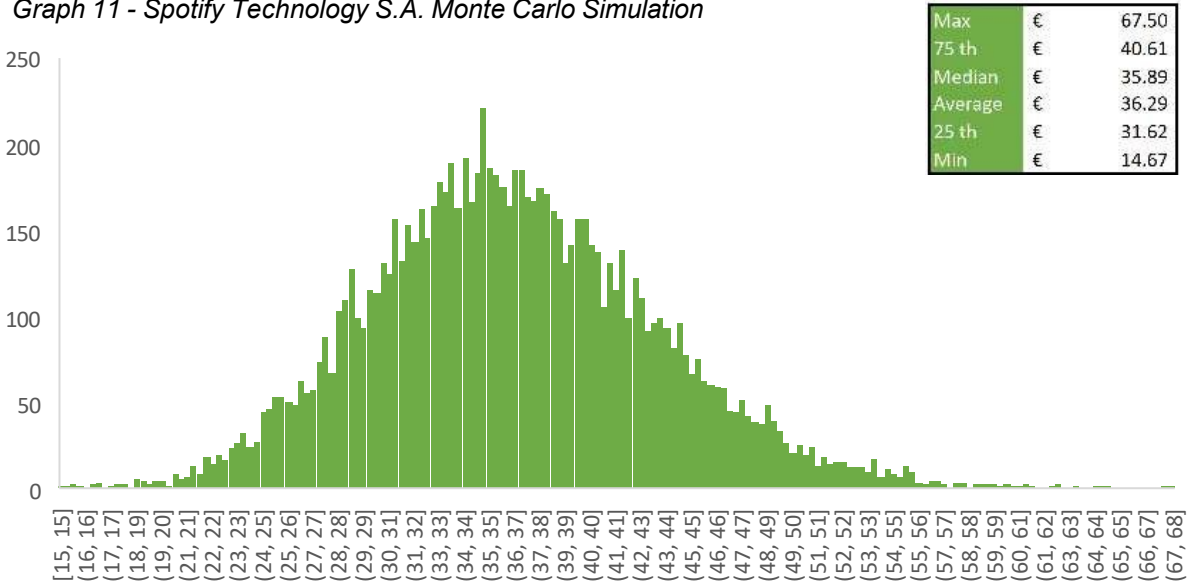
To understand the distribution of uncertainty and the various possible future scenarios, a Monte Carlo simulation was employed. With 10,000 simulated iterations. The variation of such simulations resulting from 8 implicit assumptions, with their respective distributions.

The sum of FCFF in the explicit period is simulated as a normal distribution, with a mean equal to the base case, €782.91m and a standard deviation of 15% around the mean. Which results from the three conducted revenue scenarios, with a possible upside of 15% and downside of 15%. The second input is the FCFF from the terminal value, simulated by a normal distribution around the base case of €395.49m, and a standard deviation of 30%. Since the respective period is further in the future and has much more uncertainty surrounding it, it is important to match such uncertainty with a higher degree of freedom. The debt-to-equity ratio is held constant, since Spotify never had large debt balances, nor do they mention a strategy shift in their annual reports or earnings calls. Which gives rise to the assumption that they simply roll over their debt and keep debt levels constant. The beta was simulated with a discrete distribution, i.e. 5% to 1.4, 10% to 1.45, 15% to 1.5, 20% to 1.55, 30% to 1.6, 15% to 1.65, and 5% to 1.7. Whereas the terminal growth rate is randomized between 1% and 3.5%, which is estimated to capture the most likely scenarios. Additionally, the WACC is also determined by a discrete distribution,

i.e. 5% to 10%, 40% to 11%, 30% to 12%, 20% to 13% and 5% to 14%. Listed by probability and the respective WACC. The last two inputs are held constant, which is the diluted share count and the net debt position.

As seen in Graph 11, the Monte Carlo simulation ranges from minimum estimate of €14.67 per share up to €67.50. The median value is €35.89. It is observable that under the given set of assumptions and the assumed distributions the value estimate for a one sigma region, i.e. 68.2% of all simulated estimates ranges from 29.62€ per share to 42,98€ per share. Furthermore, a two sigma region, i.e. 95% of all value estimates, ranges from a share price estimate of €24.03 to €50.43. Therefore, in 95% of all future outcomings in respect to the underlying assumptions Spotify is at least overvalued by 82.86%.

Graph 11 - Spotify Technology S.A. Monte Carlo Simulation



5. Relative Valuation

The relative valuation approach uses a standardized perimeter, to estimate the value of an asset in respect to the underlying variable. According to the valuation of Spotify Technology S.A. the forward PER is employed.

Since Spotify is now in the transition from the high growth cycle to mature growth cycle. As a company shifts its strategy, so do the investors interests. For a high growth company, significant interests lie on the ability to realize revenue growth. Nevertheless, as the company matures, investors want to realize returns. Hence, the company must become profitable, achieve positive free cashflows and positive net income, which is captured in the PER.

Therefore, the net income is a standardized measure which ultimately takes all environmental and circumstantial impacts into account. At the end, every company has to survive in the specific and individual environment in which it operates. Although, they may have different tax rates or depreciation measures. Nevertheless, these are expenses which must be paid and accounting standards which must be followed. Thus, net income is a parameter which at last measures the ability of the company to realize returns in their specific setting.

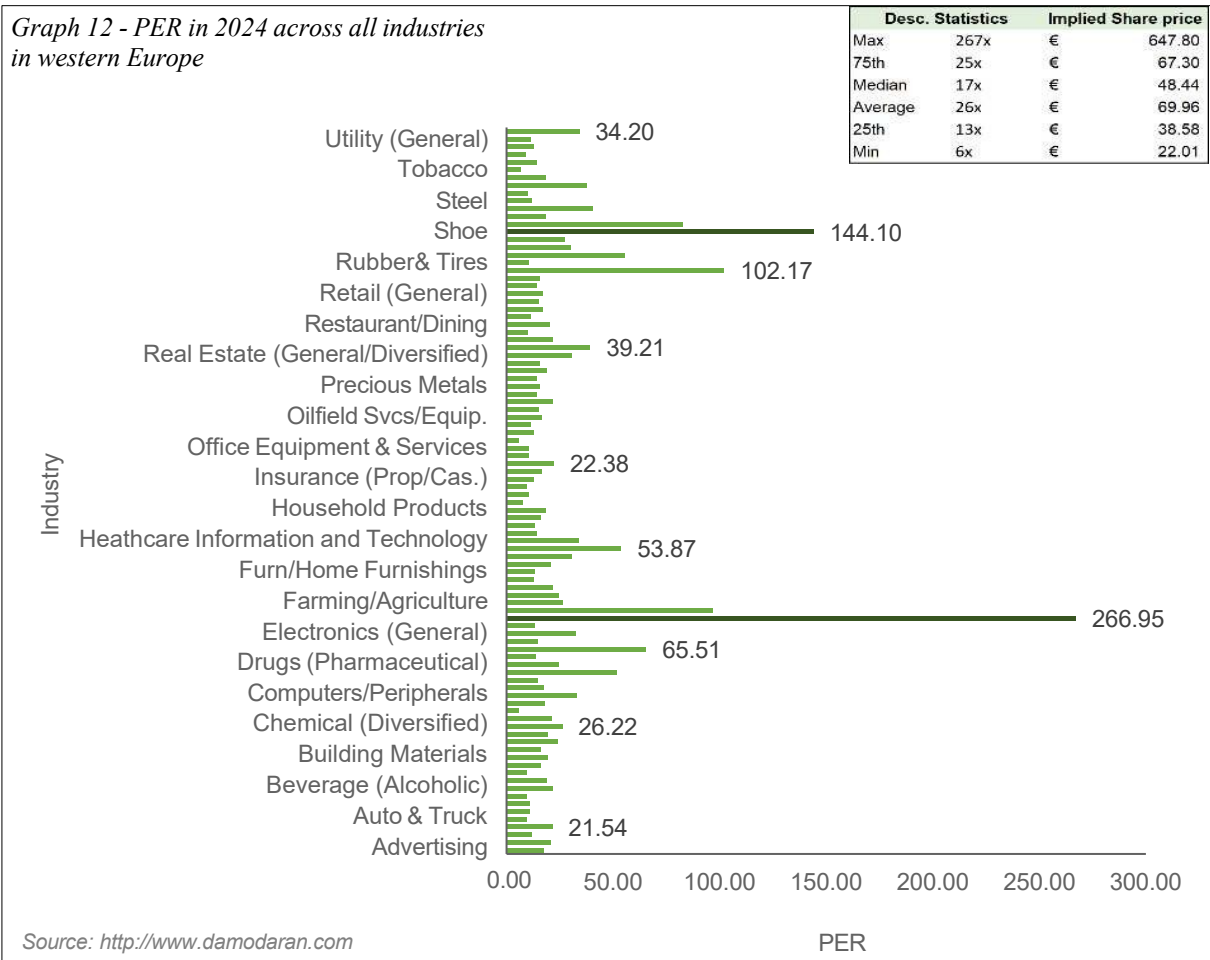
5.1. Market Distribution

To get a first glance on how the market distribution for forward PER in the European area is. A dataset from Aswath Damodaran has been utilized, namely PER for western Europe corporations. The dataset contains 6961 firms, across 94 industries in January 2024.

As seen in Graph 12, the minimum forward PER is 6x, which would imply a share price of €22.01 for Spotify. Furthermore, the median with 17x, implying a share price of €48.44. The maximum value of the data set is 267x, resulting in a respective share price of €647.80. Nonetheless, relative valuation always consists of a minimum bilateral comparison, since it requires an asset as a relative position to the valuation target. Is now the relative position already overvalued or undervalued, it will inevitably disturb the value estimate.

Furthermore, Spotify Technologies S.A. belongs either to industry Software (Entertainment) or to the Entertainment sector. Both of which are industries with the highest PER, i.e. 144.10x and 266.95x. Additionally, comparing such respective multiples with the median of the dataset, which strongly indicates that both industries are overvalue and driven by investors sentiment, not its intrinsic value.

Graph 12 - PER in 2024 across all industries in western Europe



5.2. Euro Stoxx 600 Technology

To get a clear cut, it is not enough to analyze the overall market distribution. Furthermore, requires an understanding of the respective industry. Therefore, the Euro Stoxx 600 Technology Index was utilized, and 50 companies have been selected as a sample. Since the direct industry in which Spotify operates consists mainly of Apple, Amazon, Soundcloud and Deezer. Whereas Apple, Soundcloud and Amazon do not report separate statements and Deezer has (€57,666m) earnings, which disqualifies each of them as a peer in respect to the PER.

Thus, comparing 50 companies from the Euro Stoxx 600 Technology to Spotify, which matches Spotify’s industry and its functional currency and so its geographic relative valuation. Further, Spotify can be seen as a software as a service company, which belongs to the technology sector.

Such sample selection was done in respect to their return on equity, growth rate, and market capitalization. The median of the sample is 24x, implying a share price estimate of €64.80. The minimum is 5x, implying a share price of €19.22, maximum PER implies a share price of €317.57, with a 129x PER.

5.2.1. Regression

To get another perspective on the relative value estimate for Spotify Technology S.A., the regression approach has been utilized. Whereas return in equity, growth, and market capitalization are explanatory variables and the PER represents the dependent variable.

Based on the full sample, Spotify Technologies S.A. has a PER of 34x, implying a share price estimate of 90.08€.

Nevertheless, all of which has to be seen with the belonging constraints. Spotify has a unique business model and its operations in a niche segment, leading to tremendous deviations in the main multiple drivers.

5.3. Peer Selection

After refining the dataset, two peers' stand out, in respect to their similarities on relevant metrics. Namely, Capgemini and STMicroelectronics. Both of which have a prospective growth rate ranging from 6.30% to 7.90%, a market capitalization between €25,561m and €29,764m. Thirdly, the return on equity which diverges significantly from Spotify's return on equity of 0.84%. All of which is illustrated in Table 6: Peer overview. As of the divergence in return on equity, limitations are significant and due to the nature of the industry and the niche vertical which Spotify's business model represents, an inevitable constraint.

5.3.1. Regression

Once more, utilizing the regression approach for the refined dataset, resulting in a value estimate of €22.64 per share. Two heavily divergent value estimates resulting out of the two regressions. Firstly, €90.08 per share from the first regressions and the second from the refined dataset with €22.64. Both must be considered with a grain of salt, especially one perimeter differs significantly across all the comparables, the return on equity.

5.4. PEP Ratio

Hence, getting a robust estimate necessitates to control for the diverging metric. Leading to the Price-Earnings-Profitability adjusted Ratio (PEPR). Which controls for differences in profitability, hereby the return on equity. The utilization of the PEPR works slightly differently to the PER, since it adjusts the PER for differences in profitability by dividing the PER by the return on equity, implying a linear relationship between the PER and the profitability measure.

The resulting ratios are 103.94x for Capgemini and STMicroelectronics with a PEPR 55.89x. Such adjusted ratios are multiplied by Spotify's return on equity, to get an implied PER. Which

is thereafter multiplied by the forward net income to reveal a profitability adjusted price estimate.

The implied PER ranges from 0.47x to 0.87x for Spotify, which is due to the extremely low return on equity, implying an estimated price range of €9.18 up to €10.15 per share.

6. Potential pitfalls

6.1. Subscription fatigue

Spotify's revenue stream comes by 88% from subscription-based revenue and 12% from ad-supported revenue. These weights results from a consistent subscription cohort of 40%. Spotify's high dependency on the economic situation, indicated by its beta coefficient of 1.58, imposes an inherent subscription risk. The extent to which Spotify depends on a stable subscription base is visible once the subscription ratio drops to 30%. In which the revenue streams shift its weights to 83% resulting from premium based revenue and 17% from ad-supported revenue. Further implies a total revenue of €11,851m by 2025, representing a drop in revenue of 20.5%, as well as an implied estimated value per share of €8.84. Which is a downside of 68%, in respect to the base case DCF.

Such tremendous decline in revenue, profitability and value estimate outlines Spotify's dependency on its subscriber base and its dependency on economic cycles, imposing an intense headwind. In order to reduce the risk Spotify keeps its R&D spending on a high level to improve its artificial intelligence song recommendation tool and its customized software design. So, the service gets stickier, and the churn rates decline, seen in the appendix

Table 7: Spotify Technology R&D Expenditures to Retention *rate*. R&D expenses have a positive impact on customer retention rates and create a hedge on economical dependency.

6.2. Exchange rate

As Spotify generates 63% of its revenue outside of Europe and the euro-zone. Thus, its exposure to the stability of the euro is evident. Nevertheless, Spotify explicitly states in its annual report that they do not hedge such currency risk. Hence, imposing Spotify to exchange rate risk. A decline in the euro rate by 10% would ceteris paribus, lead to 6.3% loss in revenue. Hence, if the euro declines by 10% in value the estimated value per share would drop to €26.01. Representing a potential downside of 4.8% compared to the base case scenario. So, a 1% decrease in the euro exchange rate implies a decrease by 0.48% in equity value.

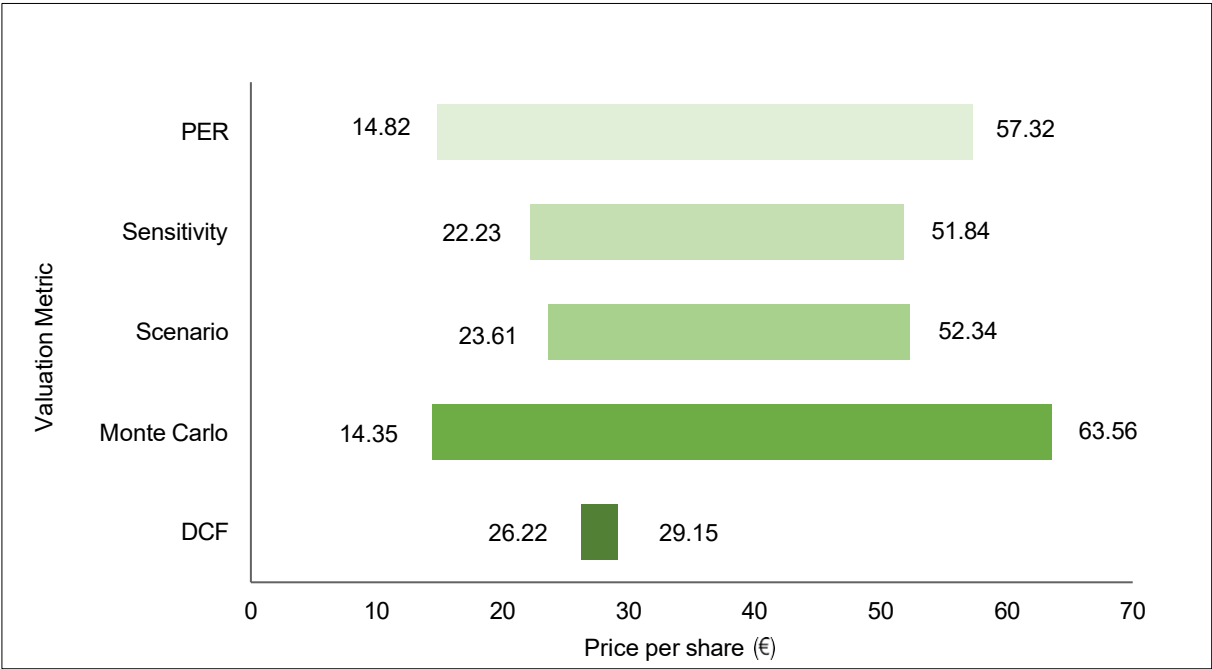
7. Price estimate

To determine the final fair price estimate for the 1st of January 2025, the DCF approach and the PER is utilized with a respective weight of 90% and 10%. The weighted split comes from the associated constraints on the relative valuation and its biased nature. Nevertheless, a value estimate for company has to incorporate its price in respect to other companies. As a DCF heavily relies on assumptions and future estimates, it is necessary to compare the absolute value estimate with the relative, to control for potential own biases. To cross-check the assumptions made I gave a 10% weight on the PER, and 90% on the DCF since the assumptions made are based on the best estimates possible.

As bottom value serves €22.23, from the downside sensitivity, as upper value €51.84, from the upside sensitivity analysis. In respect to the PER, bottom value is determined by the regression in relation to Spotify’s peers, i.e. €14.82. The upside is the 75th percentile of the overall market PER distribution, which is €57.32.

The weighted average of such inputs is €36.93, which is given a 10% up and downside, yielding an estimated price range of €33.24 to €40.63. All estimated value ranges are observable at Table 4: Football field analysis.

Table 4: Football field analysis



8. Price estimate comparison

Morningstar released an update on their Spotify Technology S.A. valuation note, adjusting its price target from \$230 up to \$250, which is €237.50, based on an exchange rate of 1.052 Euro/Dollar (30.06.2024). Major differences in the value estimate come from three variables, i.e. revenue growth, margins and returns, and their key valuation inputs.

Firstly, revenue growth is estimated to increase from 13.0% in 2023 to 19.4% by 2024. Such topline growth is not likely, after Spotify has cut its sales and marketing expenditures, dismissed more than 2,000 employees and has a constant decrease in revenue growth over the past. I consider that Morningstar misses out on identifying the right company cycle as well as identifying Spotify's overall transition during the next 2 to 4 years. Hence, such growth rates are far beyond likely scenarios and are chosen too optimistic.

Secondly, the projected EBITDA margins increase from 0.3% in 2023 up to 10.5% by 2024, and further jumps to 14.0% by 2028. Such margins are simply not achievable in the music streaming industry, due to the historically strong bargaining power of their suppliers, which have been and will continue to account for about 72% to 75%, as percentage of revenue. Additionally, overhead expenditures have been historically stable at 15%. This portion cannot be decreased beneath 10%, even after the dismissal on redundant jobs and decreases in S&M expenditures, it will remain over 10%.

Thirdly, Spotify's R&D expenditures. Representing a significant and vital position for Spotify's business model. Spotify fully relies on innovation, market leadership and their customer base. In their annual reports, Spotify point out that >50% of it is utilized for the development of products, improving their service. Spotify is dependent on such improvement, as its business model is simply and solely tailored to the music streaming industry. Whereas all other significant competitors follow a horizontal approach. Allowing them to be independent on their music streaming profits, as they simply offer it as a complementary service. Hence, Spotify needs to commit to R&D as its business model relies on it. Spotify's competitors already offer higher royalties and license payments, along with lower prices for customers, creating a strong headwind for Spotify. To survive and sustain their market leadership, Spotify must innovate and offer a better service. The relation between R&D expenditures and sustaining its customer base can be seen in

Table 7: Spotify Technology R&D Expenditures to Retention *rate*.

Lastly, the key valuation drivers, explicitly the WACC. Morningstar estimates the cost of equity at 9.0% and the pretax cost of debt at 5.8%, resulting in a WACC of 8.9%. Whereas the WACC estimate in this valuation ranges from 12.76% to 12.91%. Such divergence leads to a significant deviation in the fair value estimate. All in all, Morningstar follows a different equity story, consisting of cost cutting, margin increases and a tremendous increase in revenue growth, all at once. If all these inputs are seen on its own, they might be realistic. Nevertheless, combining all estimates into one scenario, clearly unrealistic.

Either Spotify focuses on topline growth, accompanied by expanding S&M expenditures leading to declining margins, and ultimately negative FCFF. Or Spotify is as it is currently applying, lowering its costs, mainly SG&A expenditures, leading to a decline in growth rates and improved margins.

To summarize, Spotify operates in a low margin environment, where you must either focus on growth at all costs or on improving profitability. The industry does simply not provide the possibility to achieve both at once, the Morningstar equity story is too optimistic.

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Appendix

Table 5: Historical market development (2017 – 2022)

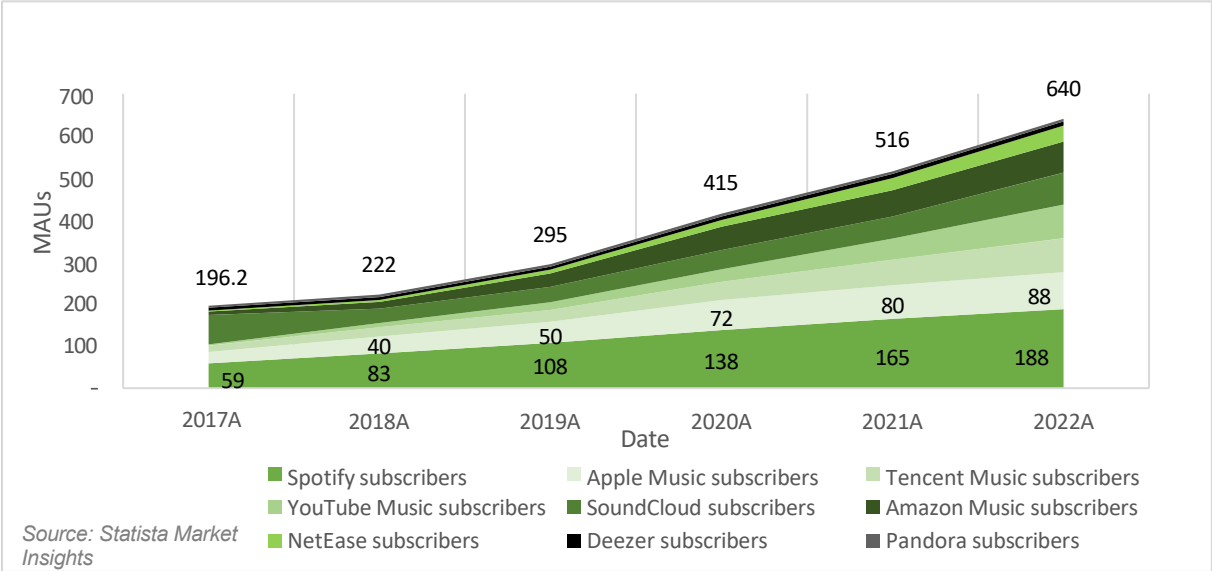


Table 6: Peer overview

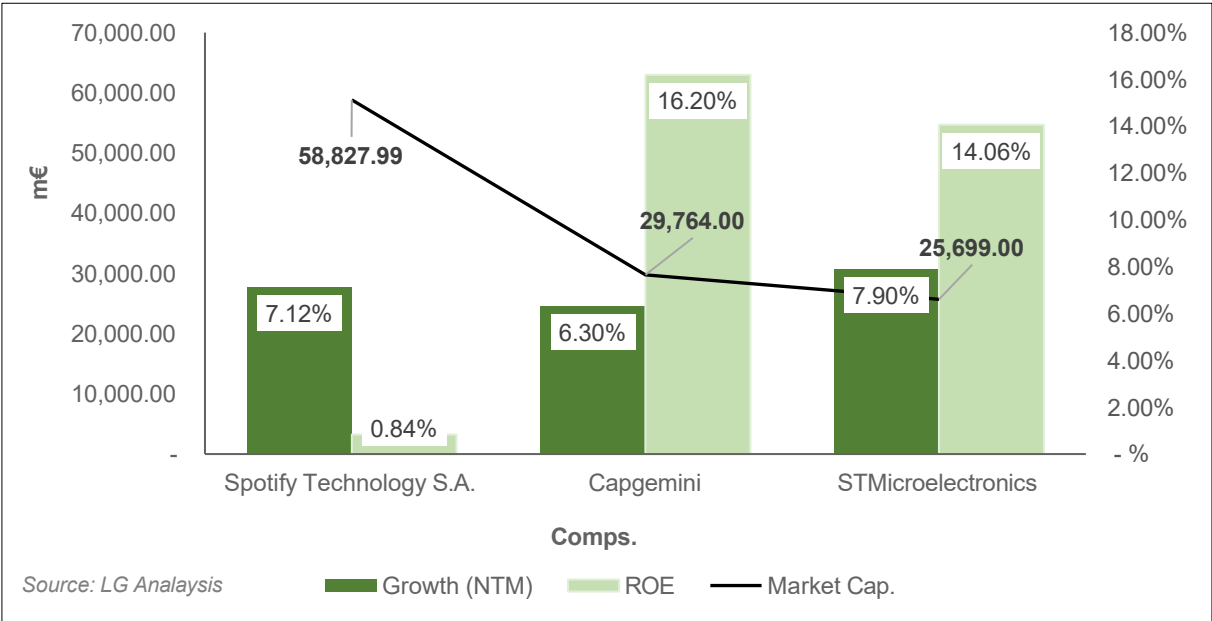


Table 9: Growth ratios

	2021A	2022A	2023A	2024F	2025F	2026F	2027F	2028F
Revenue growth	22.69%	21.30%	12.96%	5.68%	6.45%	5.42%	4.52%	2.34%
COGS (as % of rev.)	73.20%	75.05%	74.19%	74.00%	74.00%	74.00%	74.00%	74.00%
SG&A (as % of rev.)	16.36%	18.73%	15.09%	13.47%	12.97%	12.47%	12.47%	12.47%
R&D (as % of rev.)	9.17%	11.49%	11.56%	11.56%	11.56%	11.56%	11.56%	11.56%
CAPEX (as % of rev.)	0.88%	0.21%	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%
D&A (as % of capex)	29.41%	160.00%	- %	100.00%	100.00%	100.00%	100.00%	100.00%
Δ OWC (as % of rev.)	3.86%	3.70%	(2.20%)	(0.61%)	(0.66%)	(0.71%)	(0.76%)	(0.81%)
Tax rate				23.87%	23.87%	23.87%	23.87%	23.87%

Table 10: Cash conversion cycle

	Jun-2022	Sep-2022	Dec-2022	Mar-2023	Jun-2023	Sep-2023	Dec-2023	Mar-2024	Jun-2024
DSO (Quarterly)	5	5	5	4	5	5	6	5	5
LTM Average	5	5	5	5	5	5	5	5	5
DPO (Quarterly)	(7)	(8)	(6)	(6)	(6)	(6)	(6)	(6)	(7)
LTM Average	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)	(6)
Days (Quarterly)	91	91	91	91	91	91	91	91	91
CCC	(1)	(2)	(1)	(2)	(1)	(1)	(0)	(1)	(2)
LTM Average	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
DSO (LTM)	23	21	21	20	20	20	20	21	22
DPO (LTM)	(26)	(27)	(26)	(26)	(26)	(24)	(24)	(25)	(25)
Days (LTM)	365	365	365	365	365	365	365	365	365
CCC	(3)	(5)	(5)	(6)	(6)	(5)	(4)	(4)	(4)
TWC (as % of Quarterly revenue)	0.36%	(0.40%)	0.91%	(0.26%)	0.14%	0.78%	1.63%	0.60%	0.26%
TWC (as % of Other working capital)	(1.61%)	1.79%	(4.08%)	1.24%	(0.64%)	(3.54%)	(6.63%)	(2.70%)	(1.21%)
NWC (as % of Quarterly revenue)	(22.21%)	(22.80%)	(21.44%)	(21.51%)	(21.20%)	(21.35%)	(22.98%)	(21.62%)	(21.51%)
TWC (as % of LTM revenue)	1.11%	0.47%	0.49%	0.15%	0.10%	0.39%	0.60%	0.80%	0.80%
TWC (as % of Other working capital)	(4.51%)	(2.02%)	(2.14%)	(0.68%)	(0.45%)	(1.80%)	(2.66%)	(3.52%)	(3.55%)
NWC (as % of LTM Revenue)	(31.85%)	(31.02%)	(29.87%)	(29.37%)	(28.97%)	(28.54%)	(29.17%)	(29.34%)	(29.67%)
Δ NWC LTM	4.40%	2.62%	3.70%	1.67%	1.38%	1.49%	(2.20%)	(0.59%)	(1.13%)

Table 11: Net working capital

€'m	Jun-2022	Sep-2022	Dec-2022	Mar-2023	Jun-2023	Sep-2023	Dec-2023	Mar-2024	Jun-2024
Total Inventory	--	--	--	--	--	--	--	--	--
LTM Average	805	805	805	805	805	805	805	805	805
Total Receivables, Net	617	650	695	560	640	755	878	798	788
LTM Average	(696)	(696)	(696)	(696)	(696)	(696)	(696)	(696)	(696)
Accounts Payable	(578)	(695)	(588)	(592)	(623)	(655)	(662)	(715)	(750)
Trade working capital	39	(45)	107	(32)	17	100	216	83	38
Prepaid Expenses	134	127	89	90	109	89	64	77	74
Other Current Assets	203	216	218	205	164	136	104	98	84
Accrued Expenses	(1,951)	(2,020)	(2,093)	(2,025)	(2,053)	(2,108)	(2,440)	(2,228)	(2,223)
Customer Advances	(489)	(522)	(520)	(524)	(536)	(599)	(622)	(634)	(657)
Income Taxes Payable	(240)	(254)	(255)	(253)	(264)	(279)	(303)	(314)	(328)
Other Current Liabilities	(76)	(67)	(60)	(65)	(70)	(60)	(63)	(75)	(101)
Other working capital	(2,419)	(2,520)	(2,621)	(2,572)	(2,650)	(2,821)	(3,260)	(3,076)	(3,151)
Net working capital	(2,380)	(2,565)	(2,514)	(2,604)	(2,633)	(2,721)	(3,044)	(2,993)	(3,113)
Δ NWC Quarterly	(3.84%)	(7.77%)	1.99%	(3.58%)	(1.11%)	(3.34%)	(11.87%)	1.68%	(4.01%)

Table 12: Trade working capital

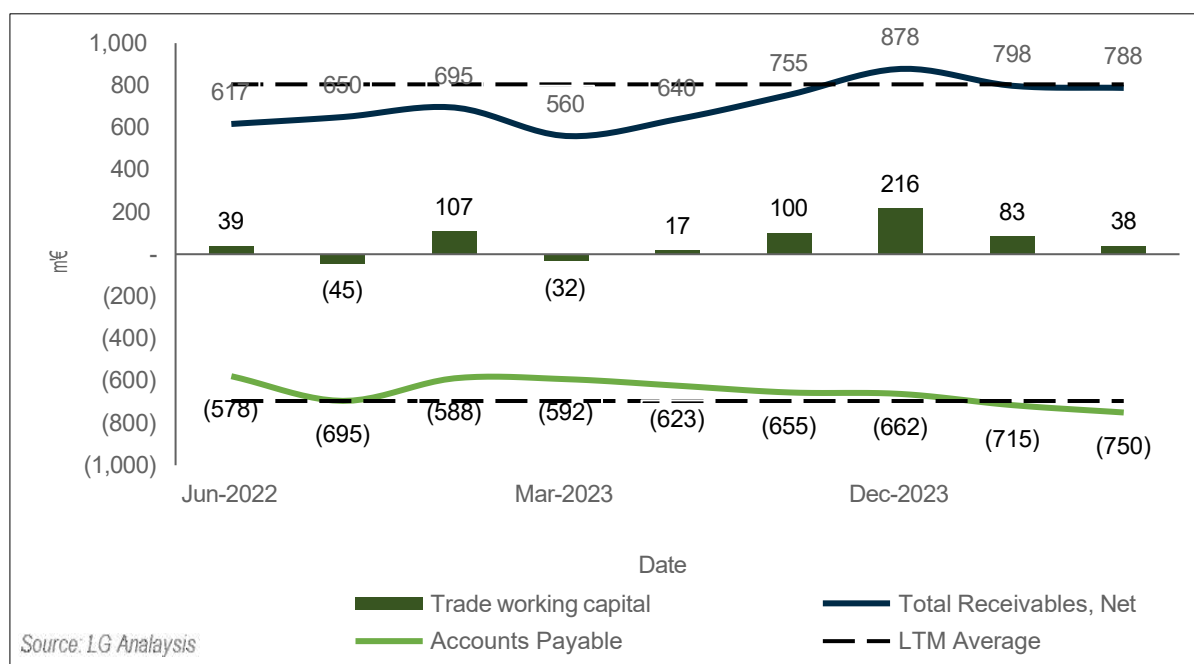


Table 13: Operating profit projection

m€	2019A	2020A	2021A	2022A	2023A	2024F	2025F	2026F	2027F	2028F	2029F
Revenue	6,764	7,880	9,668	11,727	13,247	13,999	14,902	15,710	16,420	16,804	17,193
COGS	5,042	5,865	7,077	8,801	9,828	10,359	11,027	11,625	12,151	12,435	12,723
As % of Rev.	75%	74%	73%	75%	74%	74%	74%	74%	74%	74%	74%
SG&A	1,180	1,466	1,582	2,196	1,999	1,885	1,932	1,958	2,047	2,095	2,143
As % of Rev.	17%	19%	16%	19%	15%	13%	13%	12%	12%	12%	12%
R&D	601	819	887	1,347	1,531	1,618	1,722	1,816	1,898	1,942	1,987
As % of Rev.	9%	10%	9%	11%	12%	12%	12%	12%	12%	12%	12%
Capex	(135)	(78)	(85)	(25)	(6)	(7)	(7)	(8)	(8)	(8)	(9)
As % of Rev.	(2%)	(1%)	(1%)	(0%)	(0%)	0%	0%	0%	0%	0%	0%
D&A	14	18	25	40	-	(7)	(7)	(8)	(8)	(8)	(9)
As % of Capex.	(10%)	(23%)	(29%)	(160%)	- %	100%	100%	100%	100%	100%	100%
Total Opex	6,837	8,168	9,571	12,384	13,358	13,855	14,674	15,391	16,087	16,463	16,844
Opex as % of Rev.	101%	104%	99%	106%	101%	99%	98%	98%	98%	98%	98%
Operating Profit	(73)	(288)	97	(657)	(111)	144	228	318	333	341	349

Table 14: Revenue forecast

Ad-Supported Revenue	2024	2025	2026	2027	2028	2029
Average # Ad-Sponsored Playlists	1,700	1,712	1,723	1,734	1,745	1,756
Average costs per playlist	262,500	271,395	283,274	295,644	308,240	321,019

Ad-Supported Revenue	2024	2025	2026	2027	2028	2029
Asia	73,523,700	78,307,310	83,302,818	88,418,288	93,892,017	99,324,089
Europe	509,736,150	527,606,386	546,537,177	564,929,219	584,682,197	604,383,413
Northern America	642,698,550	666,812,275	692,726,324	719,876,977	748,106,787	777,599,164
South America	58,410,495	60,246,742	63,530,312	66,979,784	70,123,216	73,358,191
Africa	6,848,127	7,130,806	7,602,267	8,124,726	8,675,022	9,254,963
Total Revenue	1,737,467,022.00	1,804,667,803.44	1,881,857,063.33	1,961,112,618.96	2,043,499,900.23	2,127,724,180.14
Implied Weight	12.41%	12.11%	11.98%	11.94%	12.16%	12.38%

Premium Revenue	2024	2025	2026	2027	2028	2029
Asia	4,093,163,267	4,392,193,796	4,647,443,533	4,856,460,754	4,934,491,339	5,010,485,427
Europe	3,414,769,523	3,609,901,556	3,788,608,839	3,941,334,793	4,014,429,381	4,086,984,349
Northern America	3,664,683,642	3,925,723,600	4,157,315,775	4,370,747,583	4,493,222,053	4,621,162,469
South America	417,483,720	443,213,895	470,224,603	492,487,701	500,440,487	508,459,523
Africa	671,319,232	726,306,268	764,260,509	797,889,261	817,831,615	838,090,376
Total Revenue	12,261,419,383.77	13,097,339,115.14	13,827,853,258.70	14,458,920,092.42	14,760,414,874.17	15,065,182,144.86
Implied Weight	87.59%	87.89%	88.02%	88.06%	87.84%	87.62%

Total Revenue	2024	2025	2026	2027	2028	2029
Asia	4,166,686,967	4,470,501,107	4,730,746,351	4,944,879,042	5,028,383,355	5,109,809,516
Europe	3,924,505,673	4,137,507,941	4,335,146,016	4,506,264,012	4,599,111,577	4,691,367,762
Northern America	4,307,382,192	4,592,535,875	4,850,042,100	5,090,624,560	5,241,328,841	5,398,761,633
South America	475,894,215	503,460,637	533,754,915	559,467,484	570,563,703	581,817,715
Africa	678,167,359	733,437,074	771,862,776	806,013,987	826,506,637	847,345,339
Total Revenue	13,998,886,405.77	14,902,006,918.58	15,709,710,322.03	16,420,032,711.38	16,803,914,774.40	17,192,906,325.00
Implied Growth Rate	5.73%	6.45%	5.42%	4.52%	2.34%	2.31%