



Equity Valuation

Casio Computer

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Abstract

This dissertation aims to determine the fair value of the Japanese company 'Casio Computer Co' as of 30/04/2024 using the Discounted Cash Flow methodology and Relative valuation. The analysis begins with an overview of the company and the markets in which it operates, as well as a macroeconomic outlook. Currently, the company is experiencing a decline in sales and profits across all four of its business lines: TimePieces, EdTech, Sound, and System Equipment. To address this, the management is implementing reforms through a 7-year plan aimed at adapting the company to evolving customer demands. The equity valuation results in an intrinsic price per share of ¥1.364,17. The comparison with the market price at the day's close of ¥1.318,00 indicates that Casio is undervalued by 3,5%. As such, a 'Hold' recommendation is issued. Compared to the equity research published by Morningstar, which suggests a fair share price of ¥1.500,00, the own analysis utilizes more conservative assumptions and results in a lower price.

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Resumo

Esta dissertação tem como objetivo determinar o justo valor da empresa japonesa "Casio Computer Co" a 30/04/2024, utilizando a metodologia do Discounted Cash Flow e a Relative valuation. A análise começa com uma visão geral da empresa e dos mercados em que opera, bem como uma perspetiva macroeconómica. Atualmente, a empresa está a registar um declínio nas vendas e nos lucros nas suas quatro linhas de negócio: TimePieces, EdTech, Sound e System Equipment. Para resolver este problema, a administração está a implementar reformas através de um plano de 7 anos destinado a adaptar a empresa à evolução das exigências dos clientes. A avaliação do capital resulta num preço intrínseco por ação de ¥1.364,17. O preço obtido, comparado com o preço de mercado no fecho do dia de ¥1.318,00, indica que a Casio está subavaliada em 3,5%. Por conseguinte, é emitida uma recomendação de "Hold". Em comparação com o estudo publicado pela Morningstar, que sugere um preço justo para as acções de ¥1.500,00, os nossos próprios pressupostos são mais conservadores, o que resulta num preço mais baixo.

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Título: Equity Valuation Casio Computer

Palavras-chave: Casio, relógios, calculadoras, instrumentos musicais electrónicos, avaliação de empresas, preço das acções, avaliação intrínseca, fluxo de caixa atualizado, avaliação relativa.

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1 Introduction

Equity valuation is a fundamental process in finance that involves determining the fair value of a company. This dissertation focuses on the equity valuation of the Japanese company 'Casio Computer', a household brand with almost 70 years of illustrious history and worldwide popularity. A pure prototype of Japanese manufacturer, Casio applied the concepts of innovation, high quality standards, and 'Kaizen' (continuous improvement) to the production of watches, calculators, and electronic musical instruments. Over the last decade, Casio has faced a sharp decline in sales, and its key market of analog watches is being disrupted by the introduction of smartwatches. In response, Casio's management has launched a 7-year plan designed to adapt the company to evolving customer demands.

As the company approaches a period of reforms, this dissertation aims to estimate its fair value and compare it with the valuations provided by the market and an independent research provider. Chapter 2 outlines prominent valuation methods and discusses their application in valuing Casio. Chapter 3 provides an overview of the company's history, current operations, and value chain. Chapter 4 introduces the business transformations defined in the management plan. Chapter 5 examines the trends and future evolution of the markets in which Casio operates. Chapter 6 presents a macroeconomic analysis. Chapter 7 analyses the historical financial performance. Chapters 8 and 9 respectively perform the DCF and Relative valuations. Finally, Chapter 10 issues an investment recommendation as of 30/04/2024 and compares it with the valuations provided by the market and the independent research provider.

2 Literature Review

In their pivotal work, ‘Security Analysis’ (1934), Benjamin Graham and David Dodd defined the concept of intrinsic value as “elusive”, later arguing it to be “[...] the value which is justified by facts”. Since then, countless approaches to intrinsic value estimation have been developed, sharpened, and subsequently abandoned, testifying to the elusive nature of value. This literature review outlines the three prominent valuation methods and discusses their application in valuing Casio.

2.1 Fundamentals of Equity Valuation

According to Damodaran (2012), the prevalent techniques among professionals and academics are the ‘Discounted Cash Flow’ (DCF) valuation, the ‘Relative’ or ‘Multiple’ valuation, and the ‘Contingent Claim’ valuation. The DCF and Relative approaches are employed in this dissertation and vastly discussed in Chapters 1.2 and 1.9, respectively. The contingent claim method is an extension of the option pricing model generally used for derivatives, which better represents the value of option-like assets within a company (Damodaran, 2012). In this specific case, the latter approach is regarded as ineffective and is therefore not further addressed.

2.2 Discounted Cash Flow

The Discounted Cash Flow (DCF) valuation has been for decades the approach preferred by practitioners. In a DCF model, the company is valued for its ability to generate cash flows at some point in the future, which are then discounted using an appropriate rate to obtain the present value (Fernández, 2007), as expressed in Formula 1:

$$PV \text{ of Future Cash Flows} = \sum_{t=1}^n \frac{Cash \ Flow_t}{(1 + r_{k \ (post-tax)})^t} + \frac{Terminal \ Value}{(1 + r_{k \ (post-tax)})^t} \quad [1]$$

Following an initial period of exceptionally high or low growth, the company is assumed to enter a 'steady state' which continues indefinitely. The value of the firm in the 'steady state' is synthesised into a single amount, namely the terminal value (TV), discussed in Chapter 1.7.

Several types of cash flow can be used in DCF analysis, with differing purposes:

- The Free Cash Flow (FCF) or Free Cash Flow to the Firm (FCFF) is the sum of cash generated by the firm's operation before any payment to investors. By using FCFF, the analyst seeks to estimate the cash available for distribution to both debt and equity holders (Damodaran, 2012). FCFF is generally obtained from earnings before taxes (EBT), adding depreciation, and then subtracting capital expenditure and changes in working capital, as expressed in Formula 2:

$$FCFF = EBT + Depreciation - Capital Expenditure - \Delta Working Capital \quad [2]$$

- The Free Cash Flow to Equity (FCFE) is the sum of cash generated by the firm's operation after any debt issuance or repayment. By using FCFE, the analyst seeks to estimate the cash left over to equity holders (Damodaran, 2012). FCFE is generally obtained by subtracting net debt repayment from FCFF, as expressed in Formula 3:

$$FCFE = FCFF - (Debt Repayment - New Debt Issuance) \quad [3]$$

The present valuation of Casio employs the DCF approach using Free Cash Flow to the Firm. After estimating the present value of all the company's future FCFF, the total firm value is calculated by adding cash and marketable securities. Then, the market value of debt and other obligations is subtracted to find the Equity Value (EqV), in a process called the 'equity bridge' (Stowe, Robinson, Pinto, & McLeavey, 2007).

2.3 Discount factor

Basic notions of the time value of money tells that any sum of money is more valuable now than in the future. Therefore, the future promised amount needs to be discounted to its present value, accounting for opportunity cost, inflation, and uncertainty.

In valuation, the appropriate discount rate depends on which free cash flow is employed. The discount rate used in valuing corporations' FCFF is defined by practitioners as the 'Weighted

Average Cost of Capital' (WACC), namely the average cost of the company's equity (k_e) and debt (k_d) proportional to their market weights in the firm's capital structure, as expressed in Formula 4:

$$WACC = \frac{E}{D + E} * k_e + \frac{D}{D + E} * k_d * (1 - T) \quad [4]$$

Prominent literature suggests that analysts should refrain from impulsively using the most updated estimates of debt and equity weights as inputs. Instead, they should prefer 'target' weights that are consistent with the long-term capital structure (Rosenbaum & Pearl, 2009). When available, utilizing management guidance on the future financing composition represents the optimal solution. Alternatively, practitioners may rely on the most common debt and equity proportions across the peer group. Finally, selecting the current capital structure remains a sound choice for companies that maintained a stable financing mix for a prolonged period.

When publicly traded, the market values of equity and debt are easily retrievable by consulting data providers such as Bloomberg or LSEG (Refinitiv Eikon). Frequently, companies finance a portion of their debt through private sources such as bank loans. In such cases, the market value is obtained by discounting promised cash flows at the applicable yield to maturity (Koller, Goedhart, & Wessels, 2015). Fernandez (2002) claims the book value of debt to be sufficiently equivalent to the market value in most cases.

A company's FCFE represents the cash flow generation's ability from the perspective of equity holders. Therefore, FCFE is discounted using only the opportunity cost of equity investors, K_e .

2.4 Risk-free rate

According to Damodaran (2012), a rate of return is characterized as free of risk (R_f) when its return can be defined in advance with certainty. The author states that the risk-free rate has neither default, reinvestment, nor currency risk. Although a pure risk-free investment does not exist, certain long-term sovereign bonds issued in the local currency represent a close alternative. Taking Yen-denominated Japanese government bonds as an example, their default risk is marginal as they are fully backed by the government's ability to print currency, while the reinvestment risk is avoidable by selecting a maturity equal to the desired investment period. In equity valuation, the maturity of the bond should exactly match the timing of the cash flow,

so that FCFE generated in year 5 is discounted by using the rate of a five-year zero-coupon bond. However, as expressed by Koller et al. (2015), professionals usually select a single long-term bond, matching the going concern status of the company. Additionally, it is crucial to ensure consistency between the currency of the sovereign bond and the company's cash flow.

The risk-free rate for countries where the government is either a risky entity or does not issue long-term bonds can be determined by removing the default risk from existing bonds using ratings provided by credit rating agencies (CRAs) or through the Credit Default Swaps (CDS) market (Damodaran, 2012).

2.5 Cost of Debt

The cost of debt (K_d) of a company with publicly traded obligations is obtained using the yield to maturity of the long-term, option-free, bonds. The YTM includes the risk-free rate along with a premium to compensate for the risk of default. As firstly suggested by Modigliani and Miller (1958), debt acts as a shield against taxes since payments to debtholders diminish taxable income. Therefore, after-tax cost of debt is estimated by applying Formula 5:

$$\text{After-tax Cost of Debt} = \text{Cost of Debt} * (1 - \text{Tax Rate}) \quad [5]$$

Estimating the cost of debt for companies that rely on private loans as source of financing requires the use of ratings provided by CRAs such as Fitch, S&P, or Moody's. Once the rating is obtained, the cost of debt is assessed using the yield to maturity of bonds issued by companies within the same category (Koller, Goedhart, & Wessels, 2015) or by referring to interest rates' tables occasionally updated by Barron's or Damodaran.

2.6 Cost of Equity

The cost of equity represents the opportunity cost of equity investors. Similar to the cost of debt, cost of equity includes the risk-free rate and a premium for risk compensation. Equity investments are generally riskier than debt because shareholders do not have priority claims over the company's assets in case of bankruptcy. Therefore, cost of equity is usually higher than the cost of debt.

Sharpe (1964) argued that capital markets' returns should only compensate investors for the systematic risk of the security, rather than the full risk, indicating that its idiosyncratic portion should be diversified by investors. The author formulated the 'Capital Asset Pricing Model' (CAPM), which was later refined by Lintner (1965) and Mossin (1966). The CAPM is widely used by practitioners to determine the expected return of an investment according to the risk-free rate, a factor for systematic risk (Beta), and the excess return of the market (Market Risk Premium, MRP):

$$K_e (CAPM) = R_f + \beta(MRP) \quad [6]$$

Other pricing models that link expected return to the risk of obtaining a different yield are the multifactor models (i.e. three- and five-factors by Fama and French, and four-factors by Carhart) and the arbitrage pricing model (APM).

The market risk premium is the excess return over the risk-free rate required by investors to compensate for bearing the equity market's risk. Estimating the MRP using historical data for equity markets other than the United States proves to be difficult due to their relatively short existence and the limited availability of accurate past data. Zenner et al. (2008) argue that the US Market Risk Premium is a reasonable indicator of the MRP for developed markets where non-market sources of risk, such as political risk, are avoidable. The authors claim that informed market participants would refrain from investing in markets providing a lower risk-adjusted return, while they would flock to markets offering a higher return, thus balancing the rate achievable in developed equity markets. To determine the MRP for non-US countries like Japan, Damodaran (2012) instead recommends adding to the US market risk premium an extra country premium (CRP) to account for the additional risk of trading in Japanese stocks:

$$K_e = R_f + \beta(Mature\ MRP + CRP) \quad [7]$$

Updated estimates of market risk and country risk are regularly provided on Damodaran's website.

Contrary to the risk-free rate and the market risk premium, which are consistent for every company within a country, traded firms are differently exposed to the market risk based on their 'Beta' (see Formula 6 & 7). All else being equal, investors demand proportionally higher returns from firms with higher Betas. According to Sharpe (1964):

“Prices will adjust so that assets which are more responsive to changes in R_g [i.e. the market] will have higher expected returns than those which are less responsive”.

The simplest method to calculate a firm’s beta is regressing the stock’s returns against the market’s returns. Several decisions need to be made regarding what to take as ‘the market’, how many years of data to consider, and whether to use daily or monthly returns. Koller et al. (2015) advise regressing against at least 5 years of monthly returns of a value-weighted, well-diversified index. The authors also find that a single company’s Beta can be heavily influenced by temporary events and instead recommend estimating Beta using a selection of peers. The methodology requires collecting peers’ Betas through the above regression, deleveraging using Formula 8, calculating the average, and finally re-levering using the target company’s capital structure.

$$\beta_U = \frac{\beta_L}{1 + (1 - T) * \frac{D}{E}} \quad [8]$$

Blume (1975) found consistent evidence that companies’ betas progress over time toward the market’s value, equal to 1. Given the forward-looking purpose of Beta in the valuation process, which characterizes the company over its entire lifespan, it is reasonable to apply the adjustment suggested by the author:

$$\text{Adjusted } \beta_L = \frac{2}{3} * \beta_L + \frac{1}{3} \quad [9]$$

2.7 Terminal Value

Facing the impossibility of reasonably projecting the performance of the company more than a handful of years in the future, practitioners rely on methods to assess the firm’s value beyond the forecasting period, namely the terminal value (TV). Choosing the best approach and the correct timeframe for calculating the terminal value is critical to any DCF valuation, as it generally constitutes the largest part of the company’s value. The first approach implies that the firm is liquidated at period-end and its assets are sold at the best bidder. The terminal value is either the estimate of the assets’ future book value or the assumed earning power of the assets at the time of the sale, net of any future debts (Damodaran, 2012). The second technique consists of making a relative valuation of the company at period-end, based on projected earnings and current or forecasted multiples. The resulting estimate, however, provides the price of the

company relative to the market rather than its fundamental value, differing from the purpose of the DCF valuation. Therefore, the methodology is not applied in the valuation of Casio.

The assumption that the company's assets are not sold at the end of the forecasting period, and instead cash flow is reinvested into the firm to continue operations, is the basis for preferring the 'Gordon Growth Model' method to calculate the terminal value. After the initial 3 to 7 years of detailed forecasting, during which practitioners can rely on sufficiently accurate projections by analysts and industry experts, the firm is assumed to continue its growth at a stable rate. This phase should begin once the company has reached the mature stage and implemented any major restructuring (Damodaran, 2012). Expressed as a formula, the TV using Gordon's constant growth method is:

$$TV_n = \frac{FCFF_n * (1 + g)}{(r - g)} \quad [10]$$

The resulting terminal value needs to be further discounted to obtain its present value at the time of valuation.

The rate of stable growth (g) represents the key variable of Formula 10. Koller et al. (2015) argue that the best estimate for g is the long-term growth rate of the industry plus the expected inflation rate. However, Damodaran (2012) suggests linking growth to company-specific inputs such as the reinvestment rate (RR) and the return on invested capital (ROIC), while capping growth at the forecasted nominal long-term growth of the economy:

$$g = \text{Reinvestment rate} * \text{Return on Invested Capital (ROIC)} \quad [11]$$

2.8 Adjusted Present Value (APV)

Luehrman (1997) claimed that the widespread popularity of the WACC methodology among generalists would soon be overshadowed by a more flexible and reliable model: the Adjusted Present Value (APV) by Myers (1974). Although the prediction turned out to be incorrect, APV's characteristics make it superior to WACC in selected cases.

The APV approach consists in performing the valuation of the leveraged firm as if it were composed of two distinct sources of values: the operations of a leverage-free company and the net effect of its financing choices (Luehrman, 1997). Similarly to a DCF valuation of a debt-

free company, the forecasted Free Cash Flow to Equity is discounted at the opportunity cost of equity (K_e). Subsequently, the impact of outstanding debt is expressed by its positive and negative effects, namely the interest tax shield and the cost of financial distress.

$$EV = PV(\text{Unlevered Firm}) + [PV(\text{Interest Tax Shield}) - PV(\text{Distress Costs})] \quad [12]$$

The distinction allows the APV methodology to handle changes in the capital structures more easily than WACC-based models, which require a relatively stable debt-to-equity ratio. Moreover, the approach provides a clearer perspective on whether the firm's value comes from operational activities or financing choices. Therefore, it is preferred by managers for evaluating decisions and making comparisons to peers.

Given the absence of indication regarding changes in capital structure from Casio's management, the APV methodology is not employed in this dissertation.

2.9 Relative Valuation

As mentioned in chapter 1.7, Damodaran (2012) argues that evaluating a company through a relative valuation means pricing the firm rather than estimating its intrinsic valuation. In practice, valuation by comparison is widely employed at all levels of the financial industry.

The 'relative' or 'multiple' valuation assumes the market to be correct, on average, in valuing firms, while misjudging individual stocks. The model involves selecting comparable firms based on business and financial characteristics, calculating their trading multiples, and finally deriving a valuation range for the target based on the average or median multiples of its peers (Rosenbaum & Pearl, 2009). The model assumes that the market is correct, on average, in valuing firms, but may misjudge individual stocks. Moreover, it assumes that prices will correct over time, fixing mispricing (Damodaran, 2012).

The main advantages of relative valuation over the DCF methodology, namely the simplicity and quickness, are only apparent. According to Goedhart, Koller, and Wessels (2005) the approach adds significant insights to the firm's valuation only when its principles are properly executed, adjustments are taken, and common mistakes are avoided. The authors list four requirements for a thoughtful analysis:

- An accurate selection of peers that goes beyond choosing firms from the same industry. The analyst should have a clear understanding of the companies' size, products, operations, growth, and financing to better exclude irrelevant firms and put resulting multiples into context.
- The employment of forward-looking multiples, when available. Forecast-based multiples demonstrate more accurate pricing power than current or historic multiples (Liu, Nissim, & Thomas, 2000).
- The use of enterprise value (EV) multiples over earnings multiples. Although widely used, earnings multiples such as the P/E ratio are influenced by differences in capital structure, as well as non-operating items and one-off earning events (e.g. write-downs). The prominent enterprise value multiples include EV/Sales, EV/EBITDA, and EV/EBIT.
- The adjustment for non-operating items. EV multiples also require adjustments for non-operating items included in the calculation of EV, EBIT, and EBITDA. The main corrections involve non-operating cash, operating leases, pensions, and stock options.

Non-financial multiples may be particularly useful in valuing new companies operating in emerging industries, where traditional metrics are not applicable (Goedhart, Koller, & Wessels, 2005). However, relying solely on unconventional multiples can lead to inaccurate valuations, as seen with metrics such as 'number of clicks' or 'page views' during the dot-com bubble (Morris & Alam, 2012).

3 Company Analysis

The chapter introduces the relevant information on CASIO COMPUTER CO LTD (hereafter ‘Casio’), that will contribute to make informed assumptions on Casio’s outlook. First, it includes a brief historical excursus of the Japanese company that explores the steps towards becoming a household name in multiple industries. Then, it outlines the company’s value chain, from R&D to manufacturing, marketing, and sales channels.

3.1 Company Presentation

Casio Computer is a Japanese company, founded in 1957 by the Kashio brothers. Casio is leader in multiple industries, known worldwide for manufacturing watches, scientific calculators, and musical instruments. Its operations originate with the invention of the all-electric calculator, and soon after, the creation of the first programmable calculator. Riding on the success in the domestic market, in the 1970s the company began offering its products to customers worldwide, with new shops in Australia, Europe, and North America.

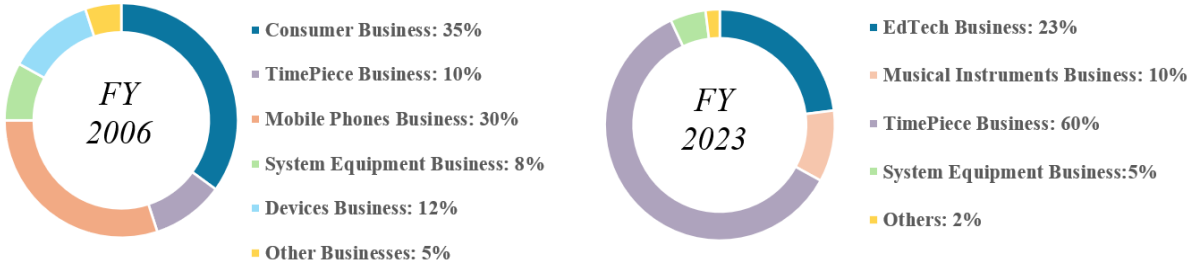
Over the years, new divisions were introduced, such as the ‘System Equipment’ and ‘Timepiece’. In the latter, Casio intercepted an unmet market demand for a wristwatch that would not break if dropped. A new brand, 'G-Shock,' was established in 1983 specifically to differentiate the latest line of shock-resistant models. G-Shock were conceived and manufactured according to the ‘Triple 10’ philosophy: a watch that would resist a fall of 10 meters, have a water resistance of 10 bars, and a battery life of 10 years.

Figure 1: Casio historical segmentation by sales in FY1957 and FY1986



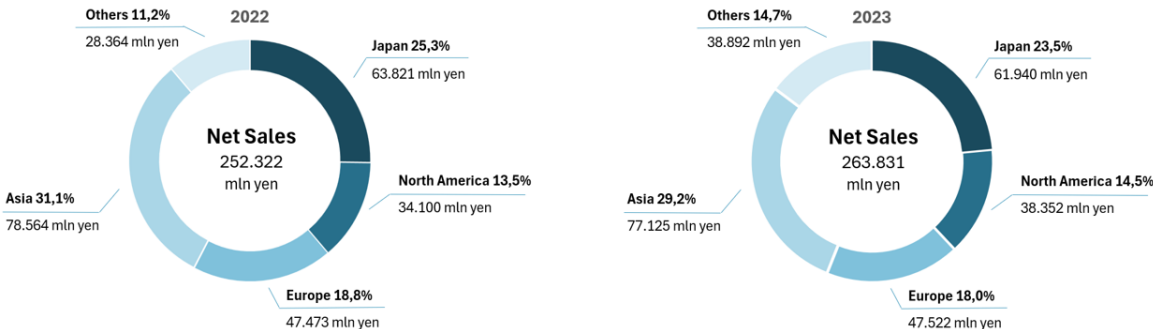
In the 1980s and 1990s, Casio expanded its product portfolio by adding multiple segments, achieving varying degrees of market penetration. The most successful introduction is represented by the ‘Electronic Musical Instruments’ business, which still today focuses on the production of affordable digital keyboards and pianos. Conversely, the ‘Electronic Dictionary’ and ‘Projector’ businesses historically accounted for only a marginal portion of company’s revenue. Furthermore, scarce profitability brought Casio’s management to prematurely end the sale of smartphones and digital cameras. Calculators, Musical Instruments, Digital Cameras, and many other products were first grouped into ‘Consumer Business’ and later differentiated.

Figure 2: Casio historical segmentation by sales in FY2006 and FY2023



Today, Casio is a global household brand name that mainly deals in three core product lines, accounting for ≈ 95% of total company sales: ‘Timepiece’, ‘EdTech’, and ‘Sound’. Its presence is geographically diversified, having trademarks rights in 192 countries, physical stores worldwide, and an official online shop. Japan represents the largest national market with almost a quarter of total sales, followed by China (15%) and the United States (11%). Other key regions are Europe (19%) and rest of Asia. After six decades of operational control held by members of the Kashio family, in 2023 Yuichi Masuda became the first non-family member to be elected as President and CEO.

Figure 3: Casio geographic segmentation of revenues in FY2022 vs FY2023



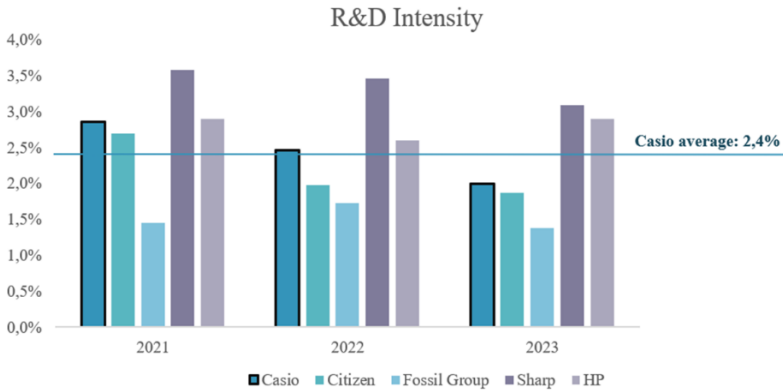
3.2 Research & Development

Since its inception, Casio has repeatedly embraced unconventional ideas, redefining the common wisdoms regarding what was once thought as unfeasible. For instance, Casio has been among the first to implement additional features on its wristwatches. Customers entering a Casio shop in the 1990s could pick among models measuring heart rate, record voice, show moon phases, or with a built-in MP3 player.

More recently, new product lines were launched and quickly dismissed due to scarce profitability, despite having technological edges over competitors. In response, the management established a paradigm shift from ‘product-oriented’ to ‘market-focused’. The latter approach is defined by Executive Manager Officer Itoh Shigenori on the 2023 Annual Report as “a focus on how to create value that will strike a chord with users”.

Over the last 3 years, the average R&D intensity (percentage of revenue that is reinvested in R&D) of 2,4% compares positively to selected peers in the Timepiece business and negatively to EdTech competitors.

Figure 4: R&D Intensity of Casio and selected peers



3.3 Manufacturing

Casio production is based in the flagship factory in Yamagata (Japan), although largely relying on foreign facilities in China and Thailand to fulfil the total annual output of ≈80 million units. The Yamagata factory produces calculators, projectors, and medical devices and includes a watch-dedicated building completed in 2017. It is specialized in premium watches and is aimed to increase vertical integration by gathering the designing and manufacturing of components

and finished products. Furthermore, it hosts the team of Casio technicians employed in certifying waterproof and high-performance models.

The four factories among China and Thailand employs low-cost and less-skilled workers to produce the more affordable wristwatch models.

3.4 Sales Channels

Casio products are available to consumers through the proprietary physical shops and e-commerce, and third-party online and offline stores. Customers exhibit a predominant preference for brick-and-mortar (B&M) purchases of watches, accounting for almost 80% of global sales in FY 2023. Offline sales range from 50% in China to above 80% in ‘Other’ (undisclosed) countries. Segmentation data are not provided for other business lines.

Consumers buying Casio timekeepers generally do so through third-party sales point, such as independent retail stores or Amazon. The company reported Direct-to-Consumers net sales ratio (sales of directly managed stores over total sales) of just 7% in FY 2023.

Casio recently announced that it will seek to increase purchases through proprietary channels, with the purpose of enhancing profitability and connection to its customers. The company plans to grow engagement with clients and to create a relationship lasting longer than the mere act of purchase. The long-term objective is to collect data on consumers preferences, allow individual-based marketing strategies, and expand the existing fanbase of 5 million loyal customers (company’s survey). In this regard, Casio launched the ‘Casio ID’ program, giving customers the opportunity to create a member profile and access exclusive advantages.

In 2023 and 2024, Casio celebrates the 40th anniversary of G-Shock brand and the 50th anniversary of the first Casio watch, respectively. The company took advantage of the commemoration to boost brand recognition by promoting its successful history and the characteristic values of durability and reliability. Moreover, new collaboration models were launched for the occasion, such as the GMW-B5000EH. The watch is designed with the American graffiti artist Eric Haze and reveals a graffiti tag when pressing the ‘light’ button.

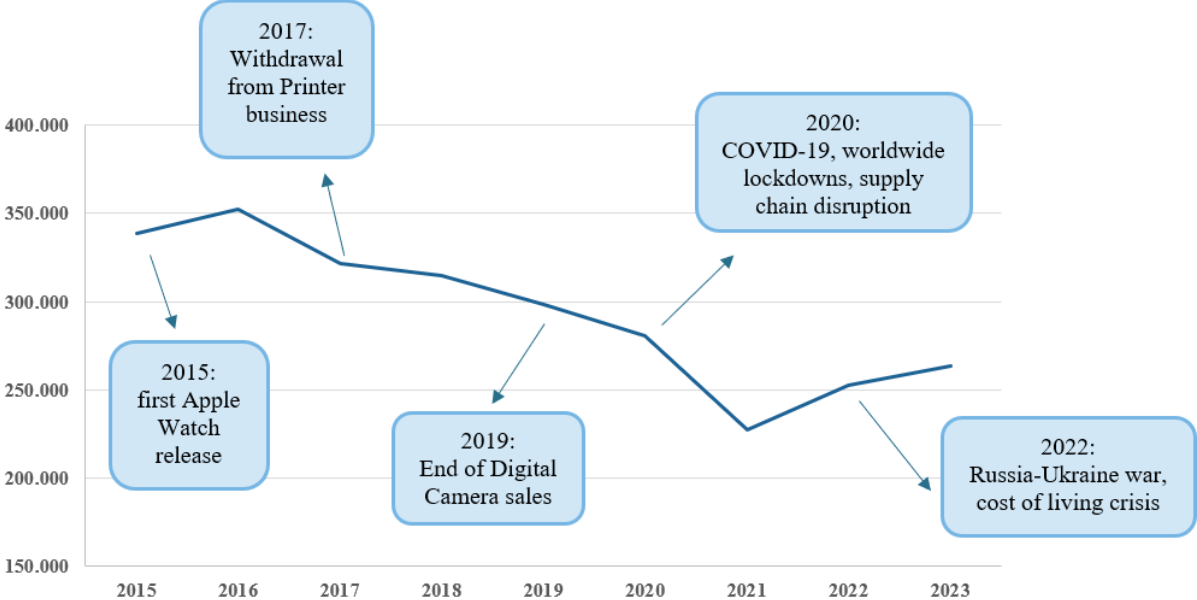
Figure 5: Segmentation of G-Shock customers and acquisition or retention strategy



4 Growth Strategy (Basic Policies for 2030)

The rapid and drastic changes to the global economy driven by the COVID-19 pandemic, its aftermath, and the Russian invasion of Ukraine severely hit Casio’s operations. The toll taken on business performance by supply chain disruption, repeated lockdowns, soaring costs, and stagnant market conditions is yet to be recovered. Even before that, however, broader changes in consumer demand, as well as the arrival of smartwatches, caused the company to lose almost 60% of the annual revenues generated just 15 years ago.

Figure 6: Casio historical sales FY2015-2023 and key events



To revitalize growth and maximize long-term corporate value, Casio management announced significant capital investments under a 7-year program named ‘Basic Policies for 2030’. The initial 3-year period, started in FY 2024, constitutes a medium-term management plan intended for strengthening the profit base and laying the foundation for additional reforms. This includes reviewing the business portfolio by focusing on core brands and restructuring the unprofitable areas, increasing presence in growing geographies, and researching for market demands that have not yet been satisfied.

The disruptive impact of the arrival of modern smartwatches on the non-luxury watch market represents the primary challenge faced by Casio in the TimePieces business. Remarkably, the

guidelines indicated by the management agenda for 2030 do not include a transition to Casio-designed smartwatch production. On the contrary, Casio plans to reinforce sales of the analog G-Shock models pursuing three guiding principles, in line with evolved consumer preference. First, increase awareness on the premium metal line, which has a higher price point and whose sales are claimed to be unaffected by the presence of smart substitutes. Secondly, incorporate smart functions while preserving a watch-like look that doesn't include an LCD monitor or touchscreen. Third, expand the fashion lineup and introduce customizable designs ('MyG-Shock').

The short-term actions are broadening commercial presence and advertising efforts in florid Indian and South-East Asian markets and reinforcing the share of purchases made through proprietary sales channels.

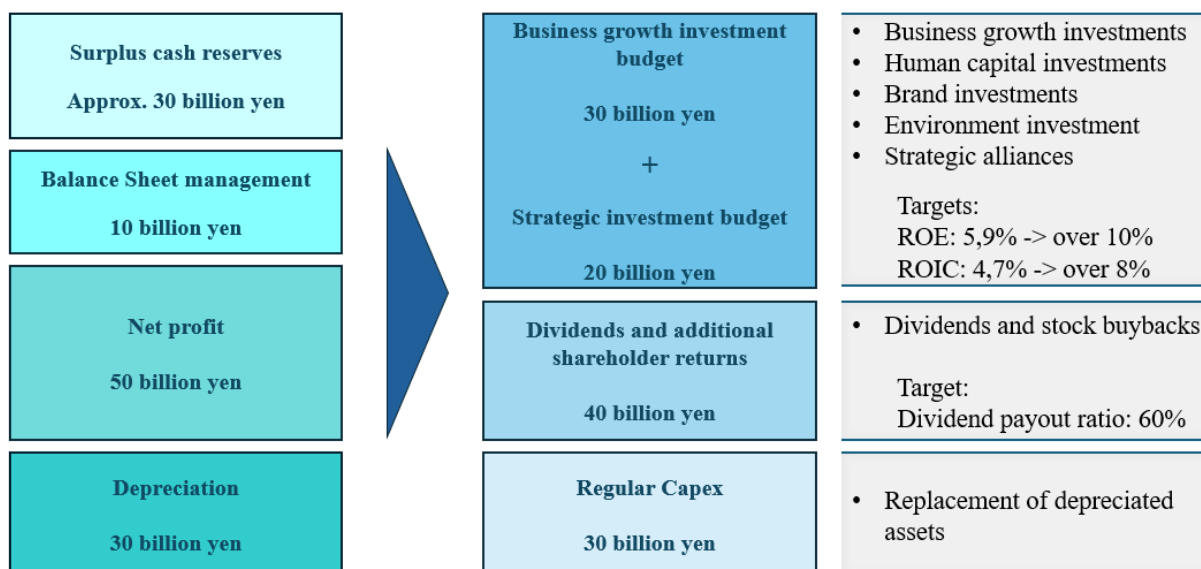
In the EdTech business, Casio's domestic and foreign strategies differ significantly. In Japan, the company will leverage the presence of 'GIGA School Project', the \$4.4bln government fund to digitalize education, and will focus on its cloud-based learning service 'ClassPad.net'. The all-in-one software is mainly targeted to high-school students and provides visual tools to help understanding mathematics. In foreign markets, Casio will strengthen the profitable business of scientific calculators by expanding sales of high-margin models, lobbying to lift bans on scientific calculators use in exams, and battling counterfeit production.

Sales in the Sound Business in FY2023 are lower than in pre-pandemic FY2019, appearing to slow down after the record demand during the stay-at-home period. The sluggish market is influenced by soaring production costs, high inflation, and decrease in the number of young Japanese players due to country's declining birthrate. Furthermore, the segment is affected by structural inefficiencies, as just 3 of the last 5 years witnessed the Sound business record profits. Under these circumstances, management expect to turn around performance by enhancing supply chain efficiency and provide instruments with characteristic stylish designs.

The capital necessary for going concern activities and to implement the initial 3-year (FY24-26) strategy are estimated in JP¥120 bln (corresponding to ≈\$816 mln), acquired through a combination of sources. On top of JP¥30 bln of regular capital investment, Casio will make use of JP¥50 bln retained from net profit for the period, JP¥10 bln from sale of idle assets including real estate, and JP¥30 bln in surplus cash reserves.

Usage of capital includes JP¥50 bln to finance the aforementioned business and strategic investments, JP¥30 bln to replace depreciated assets, and JP¥40 bln returned to shareholders.

Figure 7: Sources and uses of cash in Casio Medium Term Plan 2024-2026



5 Market Overview

Analysing the markets in which a company operates is key for understanding the ‘top-down’ drivers of company performance. These are industry-specific features, such as demand and supply trends, that similarly affect firms operating in the same domain. In the long run, competition dynamics among players smoothen company-specific competitive advantage and pull business performance toward an industry base rate.

While it could be classified under the generic taxonomy of ‘Consumer Electronics’, Casio’s diversified product portfolio clearly necessitates of stricter categories. The company’s operations are therefore divided into three core activities, as per management guidance: TimePieces, EdTech, and Sound.

5.1 TimePieces Market

The TimePieces segment represents almost 60% of Casio revenues. Casio watch sales mainly consists of G-Shock models (55%), followed by Edifice and Vintage series.

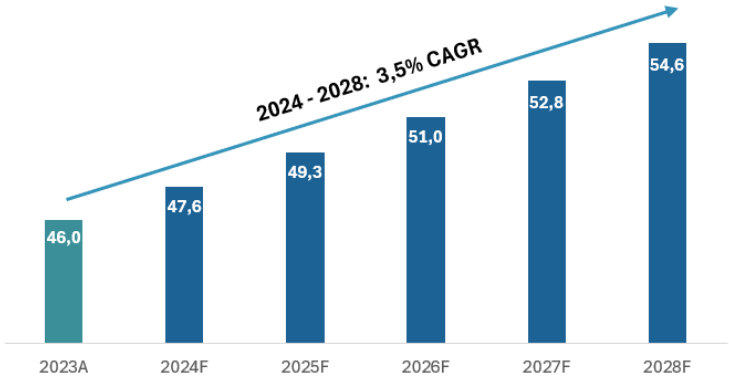
According to the official website, G-Shock bestsellers are analog and digital watches having few smart functionalities and a price ranging between \$99 and \$500; they do not include LCD monitors or companion smartphone apps.

The reference market for G-Shock is the non-luxury classical watches segment. Statista evaluates the market at \$46bln, corresponding to 60% of the entire classical watches market. The growth rate (CAGR) for the 2024-2028 period is forecasted at 3,5%. The European and North American regions (3,5% CAGR per Straits Research) appear to have reached a more mature stage than Asia-Pacific area (6,2% CAGR). Key geographies are China, standing out at \$17,80 billion sales in 2023, United States, Japan, United Kingdom, and France.

Given the ubiquitous presence of smartphones, watches have lost their monopoly in the timekeeping activity. Consequently, younger generations are increasingly often delaying their first watch purchase and favouring more expensive, status-symbol models. Other major trends in the watch industry are sustainable manufacturing, customization, and increasing relevance of second-hand online marketplaces.

Main Casio competitors in the segment are Japanese, Swiss and US producers such as Seiko, Citizen, Swatch, Timex, and Fossil. The market resembles a monopolistic competition, with low concentration and no dominant player.

Figure 8: Watch market growth 2023-2028 in bln\$



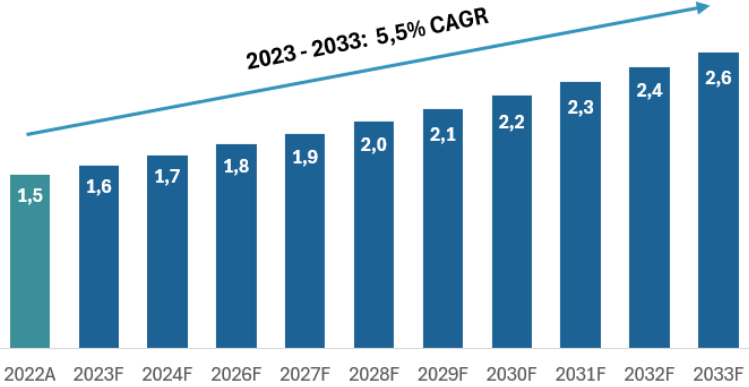
5.2 EdTech Business

Casio operations in the EdTech business consist in the manufacturing of scientific calculators and the development of an online app supporting mathematics learning. The former represents Casio major source of EdTech revenues at 66%, with the latter so far experiencing a full-scale launch only in Japan.

Calculators total market value stands at \$1,5bln in 2022, forecasted to grow at 5,5% CAGR until 2033 (Persistence Market Research).

Casio holds a majority share in the scientific calculator market across 100 countries worldwide. Other industry leaders in terms of market share are Texas Instruments, Sharp, and HP. Highly recognized brands enjoy a surplus demand from their products being the only permitted in certain STEM exams; on the other hand, they are the most exposed to counterfeit production.

Figure 9: Calculator market growth 2023-2033 in bln\$



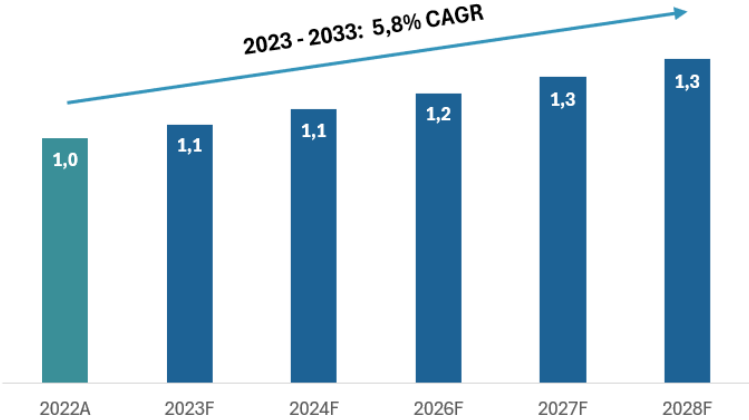
The education applications market in Japan saw a sharp increase in popularity in recent years, +85% screen time year on year in 2020 according to Statista. Global education application revenues are projected to grow at double digits rate in the next decade, according to most market research providers.

Specific to the Japanese context is the presence of the GIGA school project. The policy should significantly enlarge the number of potential users for education applications in Casio domestic market; however, its actual impact is yet to be studied.

5.3 Sound Business

The global market for electronic musical instruments is valued at \$9bln and projected to grow at 6,3% (2024-2028 CAGR), per Statista. In this segment, Casio activities are limited to the manufacturing of digital pianos and digital keyboards for non-professional use. Therefore, the reference market is significantly smaller and difficult to estimate precisely. ‘Precision Reports’ values the market for digital pianos at \$1bln in 2022, growing at 5,8% compound annual rate until 2028 and reaching a period-end market value of \$1,3bln.

Figure 10: Digital pianos market growth 2023-2028 in bln\$



The market is fragmented, and competition is fierce, as both global and regional-level firms are active in key geographies. Peer companies are Yamaha, Kawai, Pioneer, and Nord Pianos.

6 Macroeconomic environment

The global economy experienced an eventful four-year span which included the COVID-19 pandemic, the cost-of-living crisis, and full-scale wars in Eastern Europe and in the Gaza strip. This chapter will deep-dive on global macroeconomic indicators, with a focus on Casio key geographies: Japan, US, Europe, and China.

6.1 Inflation

A recent analysis from the International Monetary Fund (IMF, 2024) suggests global headline inflation peaked in the second quarter of 2022 reaching 11,6% at a quarterly annualized rate. The energy and food prices spiked due to sanctions on Russian oil import and disruption in Russian and Ukrainian grain production, adding up on the preexisting critical conditions. Since then, contractionary monetary policies established to favour deflation proved to be more effective than expectations, although weighing on economic growth. Supply-side reliefs such as labour base expansion and delivery chain normalisation contributed to lowering inflation. The IMF's World Economic Outlook (2024) forecasts global headline inflation to fall to 5,8% in 2024 and to 4,4% in 2025.

At the opposite extreme there is Japan, where the monetary authority may have finally overcome the chronic issue of deflation that has plagued the country for the past 25 years. In 2023, the CPI registered a growth rate of 3,2%, surpassing the target rate of 2% for just the third time since 2000. Another important signal came from the recent negotiations over workers' wage, which saw unions achieve a 5,28% pay rise year on year.

In the United States, the rise in watch prices has kept up with the increase in the Consumer Price Index and the Real Median Household Income over the past decade. The price index for timekeepers in the US rose 27,5%, while the broader CPI rose by 28,9% and the RMHI grew by 13,4%. (U.S. Bureau of Labor Statistics & FRED, Appendix 8.11)

In Japan, watch prices increased by 6,2% over the past 3 years, while the general CPI rose 5,6% (e-Stat).

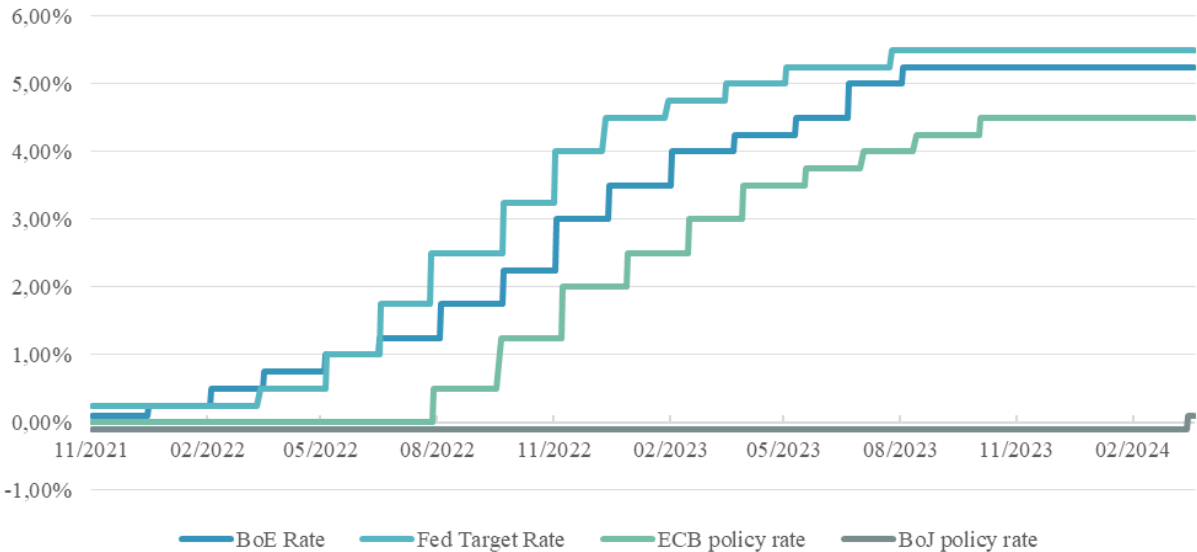
Raw materials used in manufacturing of Casio products are stainless steel, rubber, plastic, glass. Price indexes for the materials all grew double digits percentages in the last 5 years, led by stainless steel at 52% (FRED, Appendix 8.12).

6.2 Interest rates

Repeated upward adjustments to the borrowing rate have been the primary instrument used by central banks in the US and Europe to subside record inflation post COVID-19 pandemic. The Federal Reserve target rate has been set at 5,25% to 5,50% in July 2023, recording the highest level since 2001. Despite FED own forecast of reducing the rate to 4,6% by 2024 year-end, the Federal Open Market Committee announced no changes following the latest meeting in March. A similar decision has been taken by the European Central Bank on its 7th of March 2024 meeting, leaving the rate on main refinancing operations unchanged at 4,50%.

In Japan, the latest positive news on inflation led Bank of Japan to end the world’s only negative rates regime, which have been in place since 2016. Policymakers raised banks’ overnight call rate to 0%-0,1% range during the meeting in March 2024. In accordance, the benchmark yield on 10-year government bond should exceed 1,0%.

Figure 11: Central banks’ target rates



6.3 GDP Growth

The growth versus interest rate dilemma means that while sustained high rates are effective in cutting inflation, they inevitably depress economic activity. The rate hikes make credit more expensive and induce households to postpone spending, therefore holding off companies from investing and hiring. This has remained true for the past couple years too, even if with notable exceptions.

The IMF World Economic Outlook (2024) projects global growth to maintain below the historical (2000-2019) annual average of 3,8%, estimating 3,1% in 2024 and 3,2% in the following year. Advanced economies are expected to take the biggest toll, although the US and Euro area are moving in divergent directions.

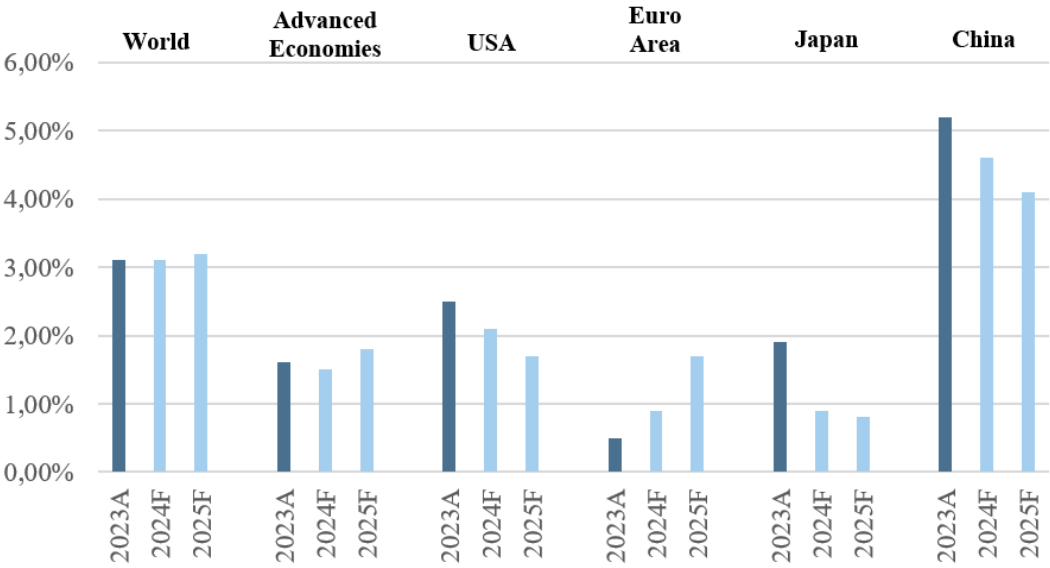
The former has experienced relatively consistent growth in the past year, at 2,5% annual rate. The impact of tightening monetary policies has been partially cushioned by one-off factors, such as excessive cash in households' pocket following pandemic stimulus and immediate return to low unemployment levels. IMF forecasts US GDP to grow by 2,1% in 2024 and 1,7% in 2025.

The Euro area, on the other hand, has faced the harsher consequences of the Russian invasion of Ukraine and saw its growth bottom at just 0,5% in the past year. The outlook remains upward-sloping at 0.9% annual growth rate in 2024 and 1.7% in 2025.

In Japan, a series of favourable elements contributed to a GDP growth of 1,9% in 2023, such as weak yen, a surge in demand, and a one-time recovery of previously delayed investments. Growth is expected to halve and reach 0,9% and 0,8% in the next two years, respectively.

In China, the real estate crisis involving debt-ridden constructors and falling house prices, along with weak consumer confidence and scarce youth employment, are among the reasons the country may not reach the 5% GDP growth rate target in the current year, after posting 5,2% growth in 2023.

Figure 12: Actual and forecasted GDP growth

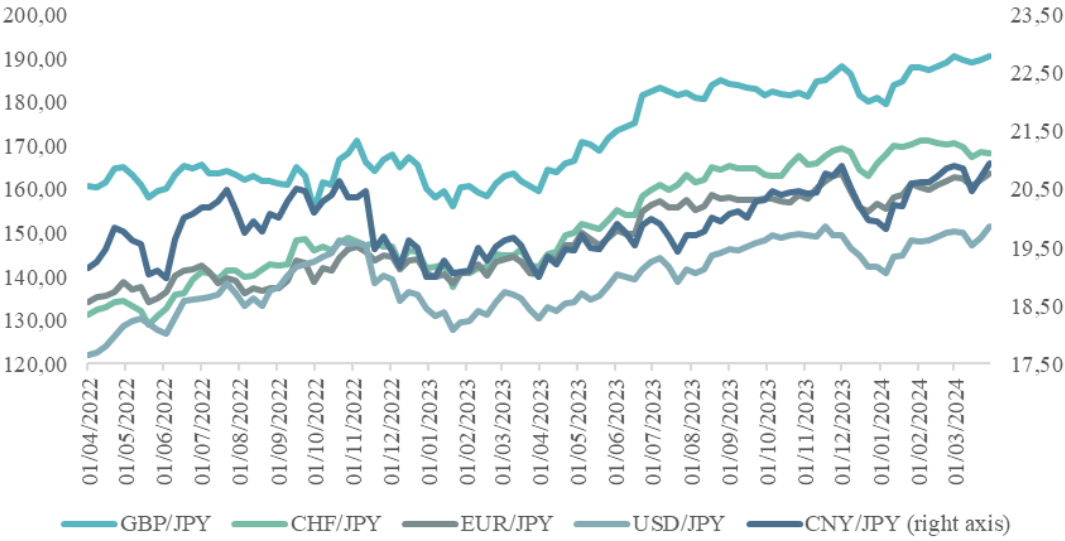


6.4 Exchange rates

Exchange rates significantly affect multinational businesses’ performance, as currencies’ relative weakness or strength influence sales, margins, geographic segmentation, and many other metrics. A weak domestic currency favours exporters as it makes products cheaper for international buyers. On the other hand, means of production that need to be imported become more expensive.

The past couple years saw the Japanese Yen (JPY) drastically depreciate against all other major reserve currencies, reaching decades-high 151.94 USD/JPY in October 2023. The primary cause is the differing monetary policy established by Japan compared to other major developed markets. As shown before, Bank of Japan maintained ultra-loose rates while Fed and ECB increased theirs.

Figure 13: FX Cross Rates Yen vs other major reserve currencies



The enduring weak yen is creating turmoil among Japanese households, stemming from rising costs for energy (90% of which is imported) and a higher cost of living, and led to BoJ choice to increase interest rates. The BoJ policy shift and the foreseen rate cuts in US and EU are expected to help JPY during 2024, while remaining weaker compared to pre-pandemic levels (BlueBerry Markets, 2024).

6.5 Geopolitical risk

“Geopolitical fragmentation is set to accelerate in 2024[...]”, is the quote that opens the BlackRock Geopolitical Risk dashboard for 2024 (Appendix 8.13). Incoming elections in the US and Taiwan are among the most noteworthy events, in an unprecedented calendar year that will see half the world population vote to determine their political leadership. Attacks on shipping vessels in the Red Sea by Houthi militias spark a new battlefield in a trade route relied upon for 11% of global trade. Ongoing conflict in the Gaza strip has led to a humanitarian crisis and may lead to further intervention by surrounding military forces, in an area that accounts for 35% of oil export and 14% of gas export worldwide (IMF, 2024); while the Russian invasion in Ukraine is not set to conclude soon.

Enduring geopolitical threatens include major cyber and terror attacks, climate change, the North Korean nuclear program, and emerging market political instability (BlackRock, 2024).

7 Financial Analysis

The chapter analyses the financial performance of Casio in the 8-year span from FY2016 to FY2023, through the lenses of the company's financial statements. This specific period has been chosen as the FY16, which goes from 01/04/2015 to 31/03/2016, includes the release of the first Apple Watch model. The product meant the beginning of the smartwatch era for many users worldwide and is considered as a ground-breaking event for companies operating in the traditional watch industry.

7.1 Income Statement Analysis

The income statement presents revenues and costs for the company over a given fiscal year. Reported below is a concise version of Casio's income statement from FY2016 to FY2023.

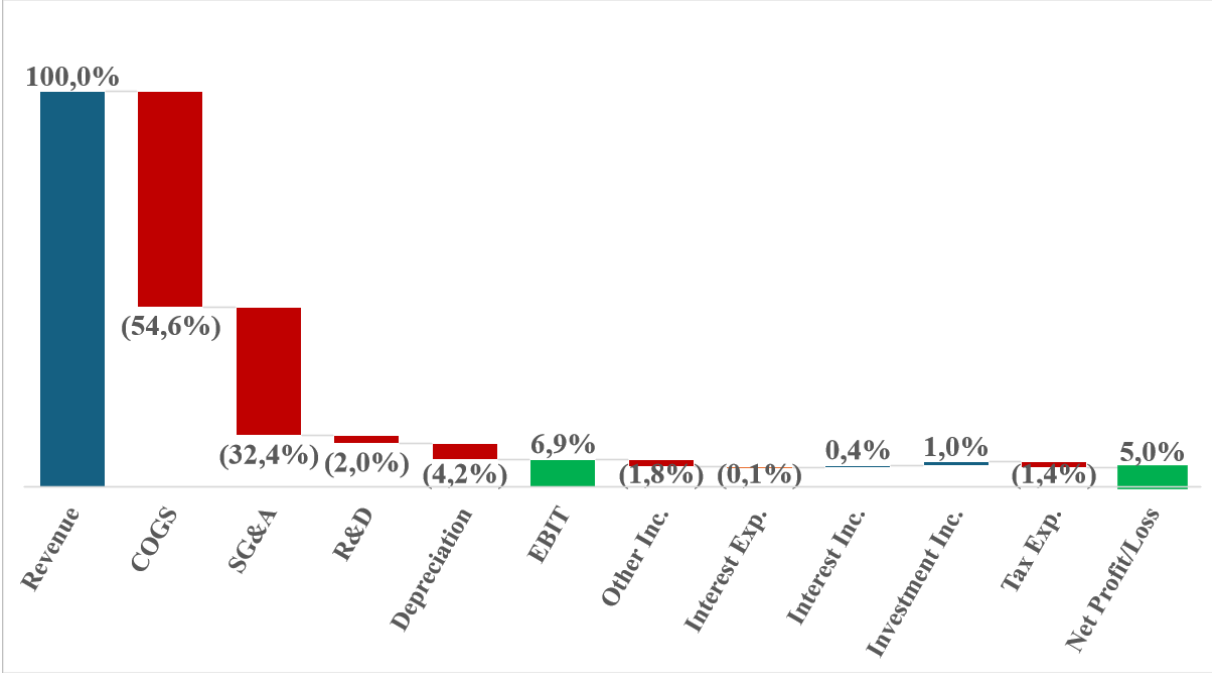
Table 1: Casio's historical Income Statement in m¥

Income Statement	2016	2017	2018	2019	2020	2021	2022	2023
Revenue	352.258	321.213	314.790	298.161	280.750	227.440	252.322	263.831
Cost of Sales	(191.622)	(179.669)	(171.667)	(160.930)	(149.784)	(121.381)	(133.783)	(144.081)
SG&A	(102.150)	(94.568)	(96.978)	(89.931)	(82.722)	(73.125)	(78.929)	(85.352)
Research & Development	(6.609)	(6.599)	(7.183)	(7.354)	(7.413)	(6.486)	(6.207)	(5.272)
Depreciation	(9.708)	(9.741)	(9.394)	(9.684)	(11.767)	(11.076)	(11.392)	(10.962)
EBIT	42.169	30.636	29.568	30.262	29.064	15.372	22.011	18.164
Other Income	(1.635)	(3.251)	(5.078)	(5.639)	(3.834)	(4.591)	(892)	(4.666)
Interest Expense	(442)	(407)	(284)	(270)	(288)	(233)	(221)	(252)
Interest Income	533	434	517	646	793	348	393	977
Investment Income	39	(3.957)	(111)	4.370	1.906	7.012	1.619	2.609
Tax Expense	(9.470)	(5.045)	(5.049)	(7.234)	(10.053)	(5.894)	(7.021)	(3.753)
Net Profit/Loss	31.194	18.410	19.563	22.135	17.588	12.014	15.889	13.079

The waterfall scheme presented underneath illustrates Casio progression toward EBIT and Net Profit generation in FY23. First, the costs related to the production of goods (COGS) reduce revenues earned through the core business activities. In FY23, the COGS ratio is 57,6% and the gross profit margin stands at 42,4%. The overhead costs incurred by Casio to run the business include management and employees' salaries, rent, utilities, advertising, and other minor items. These operating expenses constitute 35,5% of revenues, while R&D expenses are 2,0% and depreciation is 4,2%; therefore, the EBIT margin for the year is 6.9%. Non-operating incomes and expenses arise from interest payment, dividend income and forex movements;

extraordinary gains and losses originate as impairments and business restructuring occurs. In FY23, the net effect of non-operating items is a loss. Finally, net profit is obtained by subtracting current and deferred income taxes. Casio net profit margin for the year stands at 5,0%.

Figure 14: Casio Net Income bridge FY2023



7.2 Revenues

Casio revenues originate from the sale of products through its four business lines: TimePieces, EdTech, Electronic Musical Instruments, and System Equipment. Table 2 shows the progression of sales share over the past 9 years (Q4 FY2024 figures are forecasted), highlighting how watches and educational device stayed at the top of the internal hierarchy, the musical instruments segment remained still, while sales of business terminals fell sharply. The horizontal common size analysis in Table 2, where each segment’s revenue in a given year is shown as a percentage of that segment’s revenue in FY2016 (the baseline year), reveals that no segment has improved neither maintained sales levels compared to FY2016. Consumer demand for Casio watches and calculators was resilient, despite a slight decline during the COVID pandemic, relying on strong brand recognition and the turnover of new school entrants, respectively. On the other hand, market appetite for musical instruments peaked concurrently with stay-at-home policies worldwide, while recording a significant drop in the prior and

subsequent period. The System Equipment division, centred on the Japanese market, has lost 74% of its 2016 revenues and is involved in ongoing business transformations. Overall, Casio lost 88 billion yen in annual revenues in less than a decade.

Table 2: Casio's historical sales share per segment

Sales Share per Segment	2016	2017	2018	2019	2020	2021	2022	2023	2024
TimePieces Business	55,4%	56,0%	56,3%	57,6%	58,5%	57,7%	60,4%	59,7%	61,8%
EdTech Business	20,2%	20,9%	21,2%	21,5%	21,6%	19,9%	20,6%	22,7%	23,8%
Sound Business	8,4%	7,1%	7,3%	7,2%	7,2%	12,0%	11,6%	10,0%	8,2%
System Equipment Business	13,3%	13,1%	12,7%	11,3%	10,7%	8,2%	5,3%	5,5%	4,3%
Others	2,7%	2,9%	2,5%	2,3%	2,0%	2,1%	2,2%	2,0%	1,9%

Common Size Analysis per Segment	2016	2017	2018	2019	2020	2021	2022	2023	2024
TimePieces Business	100,0%	95,0%	95,4%	96,2%	92,0%	73,5%	85,3%	88,2%	91,0%
EdTech Business	100,0%	97,1%	98,3%	98,3%	92,9%	69,3%	79,8%	92,0%	96,1%
Sound Business	100,0%	78,7%	80,9%	78,7%	74,3%	100,7%	107,4%	97,1%	78,8%
System Equipment Business	100,0%	92,8%	89,5%	79,0%	70,3%	43,7%	31,1%	34,1%	26,5%
Others	100,0%	101,2%	88,4%	81,4%	65,1%	55,8%	64,0%	62,4%	57,1%

Focusing on the geographic revenue split highlights once again that Casio has worsened its sales in all the key regions, compared to financial year 2016. Despite suffering the harsher decline in the common size geographic analysis, partially due to the critical System Equipment business mentioned above, Japan remains the largest national market for Casio products. Business activity in the European macro-region grew to 104% of FY2016 revenues during 2018, before dropping to 92% in the latest year. Overall, sales in the region were the less volatile. Asia (ex. Japan) is a key geography accounting for almost 30% of Casio revenues, followed by Europe (18%), North America (15%) and other countries (15%).

Table 3: Casio's historical sales share per geography

Sales Share per Geography	2016	2017	2018	2019	2020	2021	2022	2023
Japan	31,4%	33,3%	31,9%	31,7%	30,8%	28,9%	25,3%	23,5%
China	11,8%	9,9%	11,3%	10,1%	12,5%	17,2%	14,7%	14,2%
Rest of Asia	16,4%	17,2%	16,4%	17,4%	17,4%	15,0%	16,5%	15,0%
North America	13,4%	12,8%	12,5%	12,7%	11,9%	12,7%	13,5%	14,6%
Europe	14,7%	15,3%	17,1%	17,0%	16,4%	17,6%	18,8%	18,0%
Others	12,4%	11,5%	10,9%	11,0%	11,0%	8,8%	11,3%	14,7%

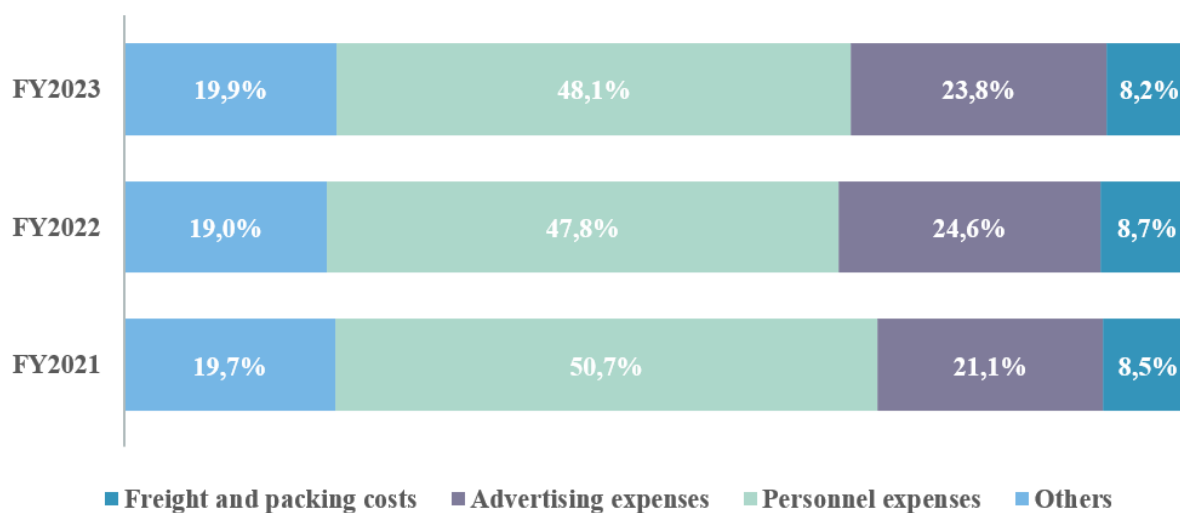
Common Size Analysis per Geography	2016	2017	2018	2019	2020	2021	2022	2023
Japan	100,0%	96,8%	90,8%	85,5%	78,1%	59,4%	57,7%	56,1%
China	100,0%	76,8%	85,5%	72,7%	85,0%	94,2%	89,4%	90,8%
Rest of Asia	100,0%	95,9%	89,6%	89,9%	84,6%	58,9%	72,1%	68,5%
North America	100,0%	86,9%	83,3%	80,3%	70,8%	61,0%	72,2%	81,4%
Europe	100,0%	94,8%	104,1%	98,3%	89,2%	77,4%	91,9%	91,9%
Others	100,0%	84,2%	78,3%	75,1%	70,5%	45,8%	65,0%	89,0%

7.3 Operating Costs

Casio's COGS ratios remained stable over the 8-year period under analysis, occasionally deviating from its 54,1% average by just a few basis points. The trend is a testament of the company's successful vertical integration and suggests that Casio has been able to effectively manage raw materials and production costs despite facing periods of inflationary pressure and supply chain disruption.

Graph 3 illustrates the proportion of selected expenses over the total Selling, General and Administrative (SG&A) for the past 3 years, as Casio began disclosing this data just in FY2021. The most prominent outflow is represented by personnel salaries, representing around 50% of total SG&A in each year. Advertisement and promotion expenses stand at 23,8% in FY2023. Those are crucial to preserve brand value, transmit the characteristics of competitive advantage, and favour expansion into new markets. Effective communication is key in occasion of special events, such as the launch of the official e-commerce in 2021 and the 40th anniversary of G-Shock brand in 2023.

Figure 15: Casio's historical SG&A expense split

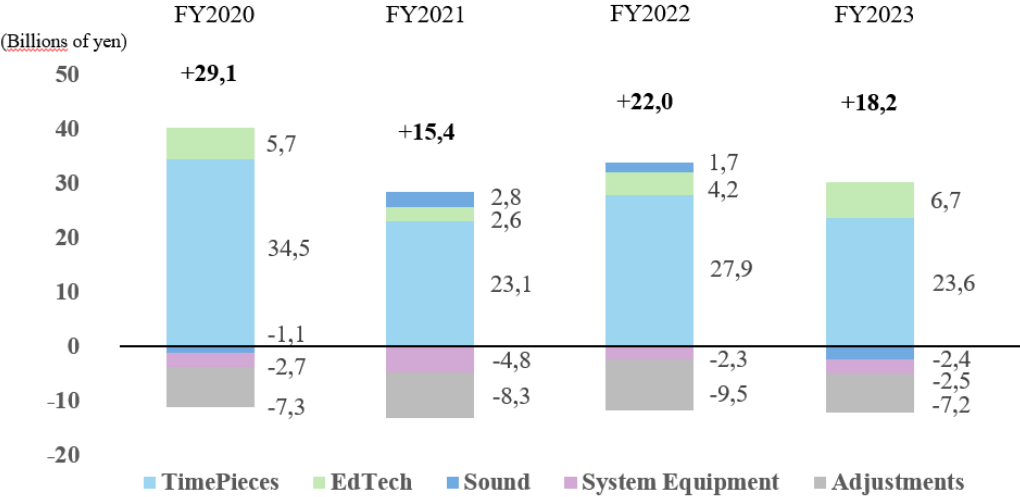


R&D expenses have decreased over the triennium, both as percentages and absolute figures, and FY2023's ¥5,4bln represents the company's lowest investment in the last decade. Nonetheless, the division reports to be engaged on projects regarding current operations as well as next core technologies. The main area of focus appears to be the development and optimization of software, given their impact on watches, calculators, web-apps, and business devices. On the other hand, unexploited potential is identified in the imaging, medical, and beauty tech markets.

7.4 Profits

With a clear connection to sales performance, Casio's profits are following a similar downward trend. Since FY2016, Earnings before Interests and Taxes (EBIT) declined by more than 24 billion yen, down 11% year-over-year.

Figure 16: Casio's historical operating profits per segment



Watches lead the field recording an operating profit margin of 15% in FY2023, for a total of 23 billion yen. The major source of profit is the vast lineup of full-metal G-Shocks targeted to medium and high-end customers, starting at a price point above \$100 (G-Shock DW-5600FF-8) up to thousands of dollars (G-Shock MRG-B5000D-1). Other profitable watch lineups include Casio's 'Pop', 'Vintage', and 'Authentic'.

The EdTech segment, comprising calculators, electronic dictionaries, and ‘ClassPad.net’, represents the only other profitable segment in FY2023. Operating profit margin for calculators stands at 15%, dictionaries approximate 7%, while the cloud-app’s profitability is not disclosed.

In recent periods, the Sound business’ only operating profits belong to the exceptional two years following the COVID-19 pandemic. Casio’s management acknowledged the issue in the latest annual report, citing declining young Japanese population and surging raw materials and logistic costs. The medium-term strategy toward improved profitability includes meeting the demand for instruments with stylish design and strengthening promotion of the ‘Privia’ series. The System Equipment division is also affected by chronic operating losses, which resist the several business transformations implemented over the past years.

In the future, the company’s profitability should marginally increase alongside the usage of the official e-commerce, due to lower selling costs (e.g. rent, employees, etc). Today, Casio would be better off operating only the TimePiece and EdTech businesses, which together constitute 166% of total operating profits (120% when excluding adjustments).

7.5 Balance Sheet Analysis

The balance sheet provides a snapshot of the company’s financial situation at each fiscal year-end date. The statement displayed below is a concise version of Casio’s balance sheets from FY2016 to FY2023.

Table 4: Casio’s historical Balance Sheet in m¥

BALANCE SHEET - ASSETS	2016	2017	2018	2019	2020	2021	2022	2023
Cash and Cash Equivalents	122.248	99.117	114.941	123.714	119.696	140.475	135.093	130.674
Trade Receivables	53.496	67.177	64.683	52.485	48.209	29.275	28.396	29.748
Inventories	57.776	52.258	49.681	54.274	53.150	49.401	60.817	65.116
Other Current Assets	16.717	14.895	8.202	8.143	6.331	5.112	6.462	6.776
Non-Current Tangible Assets	60.882	56.791	58.032	56.805	59.580	57.050	57.385	56.422
Non-Current Intangible Assets	6.309	6.784	7.036	8.978	8.459	8.663	9.920	10.760
Other Non-Operating Investments	34.407	35.153	37.029	30.630	21.077	19.661	16.496	10.197
Other items	16.619	19.277	24.599	22.501	17.598	22.391	22.706	25.531
Total Assets	368.454	351.452	364.203	357.530	334.100	332.028	337.275	335.224

BALANCE SHEET - EQUITY & LIABILITIES	2016	2017	2018	2019	2020	2021	2022	2023
Trade Payables	47.587	44.108	44.062	41.645	35.581	32.893	31.563	29.690
Other Current Liabilities	30.880	29.232	32.970	30.345	24.503	26.751	30.002	26.323
Current Debt	1.101	2.155	16.705	10.773	26.984	5.578	10.101	27.531
Non-Current Debt	86.775	79.625	63.775	63.173	44.493	54.911	46.712	30.080
Ordinary Shareholders' Equity	113.650	113.650	113.650	113.650	113.634	113.648	98.729	98.715
Other equity items	88.461	82.682	93.041	97.944	88.905	98.247	120.168	122.885
Total Liab. & Shareholders' Equity	368.454	351.452	364.203	357.530	334.100	332.028	337.275	335.224

7.6 Liquidity

Cash and equivalents historically accounted for more than a third of Casio's total assets and almost half of the current assets' balance. The management's most recent estimate indicates excess cash on hand for 30 billion yen, to be either directed into investments or returned to shareholders before the end of the medium-term plan.

The general upward trend in liquidity reached its peak in the latest fiscal year, evidenced by the record results in Table 5. Casio's liquidity risk is negligible, as cash reserves more than double short-term obligations and current assets cover by four times the respective liabilities.

Table 5: Casio's historical liquidity ratios

	2016	2017	2018	2019	2020	2021	2022	2023
Cash Ratio	1,6x	1,4x	1,5x	1,7x	2,0x	2,4x	2,2x	2,3x
Quick Ratio	2,2x	2,3x	2,3x	2,4x	2,8x	2,8x	2,7x	2,9x
Current Ratio	3,2x	3,2x	3,1x	3,3x	3,8x	3,8x	3,7x	4,1x

7.7 Fixed Assets, Depreciation, and CapEx

Over its recent past, Casio kept its fixed assets balance constant in the range between 56 and 60 billion yen, and the CapEx to depreciation ratio fluctuated by 30 basis points above and below the threshold of 1. The indication sent from Casio's past investment strategy, supported by its large cash holdings as discussed in the previous sub-chapter, suggests that the company had few innovative opportunities to explore and limited plans to change the business structure. The largest investments were made in 2019, when Casio embraced the implementation of smart functions into classic-like watches.

Following several years of inactive M&A strategy, in March 2024 Casio reached an agreement to acquire a 69% stake in ‘Libry’. The company is mostly known for a digital learning material platform for high school students, which should integrate functionalities into ‘Classpad.net’.

Table 6: Casio's historical Capital Expenditure in m¥

	2016	2017	2018	2019	2020	2021	2022	2023
PPE	60.882	56.791	58.032	56.805	59.580	57.050	57.385	56.422
Depreciation	9.708	9.741	9.394	9.684	11.767	11.076	11.392	10.962
Growth		0%	-4%	3%	22%	-6%	3%	-4%
in% PPE	16%	17%	16%	17%	20%	19%	20%	19%
CAPEX	10.346	8.963	10.479	12.733	9.882	8.326	10.974	11.046
Capex/Depreciation	1,07	0,92	1,12	1,31	0,84	0,75	0,96	1,01
Avg. Useful Life of Assets	6,3	5,8	6,2	5,9	5,1	5,2	5,0	5,1

7.8 Net Working Capital and Cash Conversion Cycle

Net Working Capital (NWC) is measured by the difference between current assets and current liabilities, and it is an intuitive indication of the short-term financial health of the company. Positive NWC entails no need for long-term sources of financing to fund short-term obligations. However, too high NWC could imply issues in selling the inventory or collecting account receivables, ultimately leading to operational inefficiencies. Therefore, a thorough analysis of the single NWC items, complemented by the respective ‘Days’ metric, is preferable.

Trade receivables measured as percentage of sales decreased from a pre-pandemic average of 18% to just 12% over the past three years. The primary cause is identifiable in the larger portion of purchases from end customers through proprietary channels; a trend favoured by the launch of Casio’s e-commerce platform in 2021. Casio was able to reduce the collectible amount by replacing deferred revenues from third-party shops with immediate payments through credit cards. Days receivable outstanding (DRO) halved from 140 in FY2018 to just 74 in FY2023.

Table 7: Casio's historical Net Working Capital in m¥

	2015	2016	2017	2018	2019	2020	2021	2022	2023
Net Working Capital	48.446	49.522	60.990	45.534	42.912	47.606	24.144	34.110	45.627
Trade Receivables	57.109	53.496	67.177	64.683	52.485	48.209	29.275	28.396	29.748
<i>% of Revenues</i>	17%	15%	21%	21%	18%	17%	13%	11%	11%
Inventories	55.951	57.776	52.258	49.681	54.274	53.150	49.401	60.817	65.116
<i>% of COGS</i>	29%	30%	29%	29%	34%	35%	41%	45%	45%
Other Current Assets	16.604	16.717	14.895	8.202	8.143	6.331	5.112	6.462	6.776
Trade Payables	48.635	47.587	44.108	44.062	41.645	35.581	32.893	31.563	29.690
<i>% of COGS</i>	26%	25%	25%	26%	26%	24%	27%	24%	21%
Other Current Liabilities	32.583	30.880	29.232	32.970	30.345	24.503	26.751	30.002	26.323

In response to the exogenous supply chain issues and material procurement risks caused by COVID-19, Casio kept inventory levels strategically high. As a result, inventory balance increased to 45% of COGS in FY2023 and Days Inventory Outstanding (DIO) reached 160. The company plans to curb the amount in the upcoming years, although the procurement of semiconductors remains critical.

Trade payables remained constant between 24-27% of COGS for almost the full period, dropping below that range only in the past year. Accordingly, day's payable outstanding (DPO) recorded a record-low 78 days. Other current liabilities, comprised of income taxes payable and non-trade accounts payable, consistently ranged between 26 and 30 billion yen.

Although Casio's 156 days long 'Cash Conversion Cycle' in FY2023 stands above the period's average, it can be viewed as an overall improvement in operational efficiency. The measure is heavily influenced by the exceptional inventory reserve, hiding the advancements made in rapidly collecting revenues.

Table 8: Casio's historical Cash Conversion Cycle

	2016	2017	2018	2019	2020	2021	2022	2023
Days Inventory	108	112	108	118	131	154	150	160
Days Receivable	105	123	140	133	123	116	79	74
Days Payable	92	93	94	97	94	103	88	78
Days Working Capital	122	141	155	154	159	168	141	156

7.9 Leverage

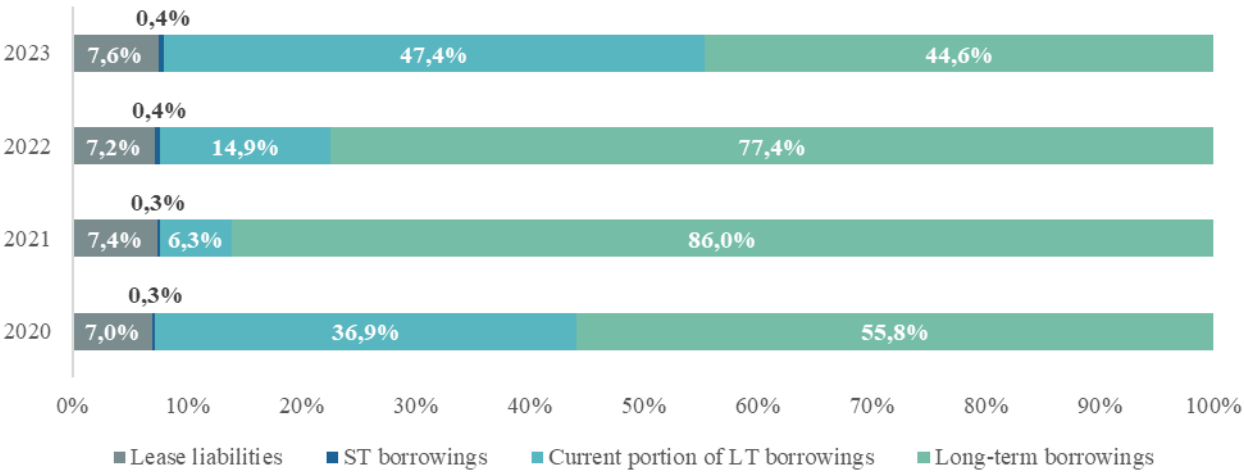
In its recent history, Casio's interest-bearing obligations have maintained a relative stable structure, split between short- and long-term borrowings as well as lease liabilities. The

company has not issued any outstanding bond and instead prefers to obtain financing through private bank loans with ‘Sumitomo Mitsui Banking Corporation’ (Refinitiv-Eikon).

Long-term borrowings and their current portion take up more than 90% of total debt, while short-term debt represents less than 1%. They constitute an inexpensive source of funding, at an average interest rate of 0,2% and 0.1%, respectively.

Lease liabilities represent payments for the right-of-use on the 4,115-billion-yen worth of leased assets currently on Casio’s balance sheet. Lease liabilities enhance flexibility but come at a higher cost of debt, averaging 4,1%.

Figure 17: Casio’s historical debt structure



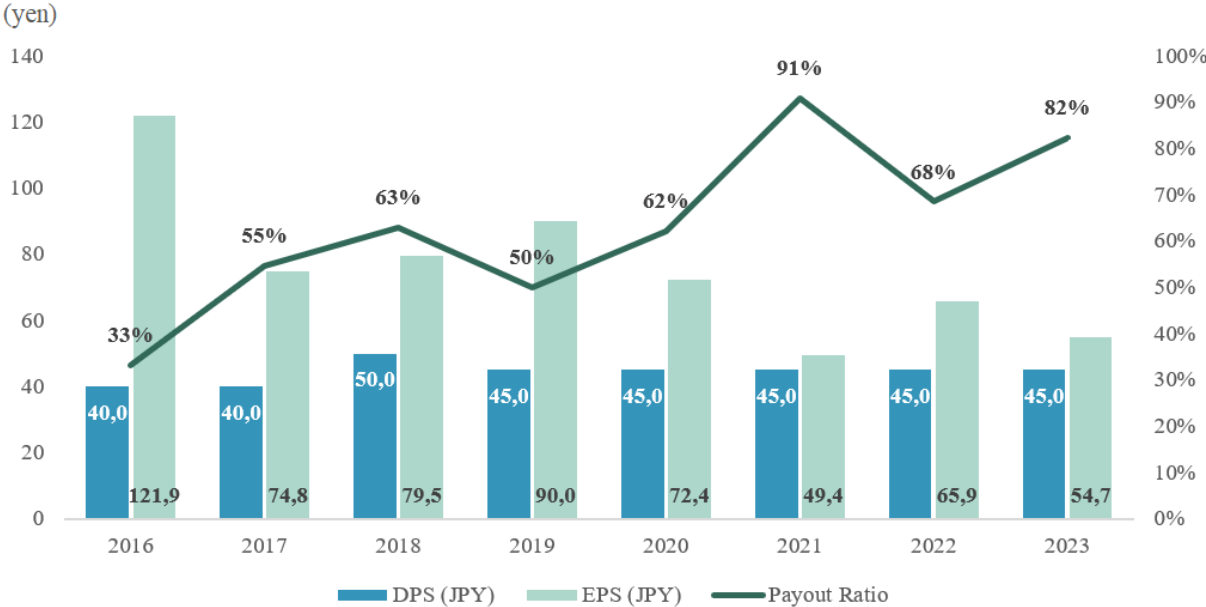
Since FY2016, Casio has steadily deleveraged its balance sheet by an annual average of 4,3 billion yen, for a current debt burden of ¥57,6 billion. All leverage ratios indicate an optimal solvency ability. In FY2023, EBIT is 72 times the interest expense while EBITDA/Debt stands at 0,5. The company’s actual book value capital structure is composed of 26% debt and 74% equity.

7.10 Shareholders’ Equity

Casio adopted a dividend policy that pays shareholders a fixed amount per share, while allowing the payout ratio to float. Given shrinking year-end earnings, the ratio peaked at 91% in 2021

and later maintained above 60%. Over the 8-year period under analysis, Casio further compensated shareholders repurchasing stocks for a total of 35 billion yen (Appendix 8.3).

Figure 18: Casio’s historical DPS, EPS, and payout ratio



7.11 Profitability

The ability to generate returns to shareholders experienced a decline over the second half of the 2010s, a fall later accentuated by the disruptions brought by Covid-19. Dupont’s decomposition of ROE shows that the cause of the sluggish performance must be found in all three metrics. Comparing ROIC in FY2016 to FY2023, the halving of EBIT overcame the positive impact of lower invested capital overcame, at similar effective tax rates.

Table 9: Casio's historical profitability ratios

	2016	2017	2018	2019	2020	2021	2022	2023
Net Income Margin	9%	6%	6%	7%	6%	5%	6%	5%
Avg. Asset Turnover	95%	89%	88%	83%	81%	68%	75%	78%
Avg. Financial Leverage	183%	181%	178%	173%	167%	161%	155%	153%
ROE	15,4%	9,2%	9,7%	10,6%	8,5%	5,8%	7,4%	5,9%
Effective Tax Rate	23,3%	21,5%	20,5%	24,6%	36,4%	32,9%	30,6%	22,3%
EBIT	42.169	30.636	29.568	30.262	29.064	15.372	22.011	18.164
BV Invested Capital	289.987	278.112	287.171	285.540	274.016	272.384	275.710	279.211
ROIC	11,2%	8,6%	8,2%	8,0%	6,7%	3,8%	5,5%	5,1%

8 Forecasts

The chapter explores the assumptions behind the forecasting of Casio's future financial performances. The detailed projection starts in FY2024 and concludes in FY2030. It is worth noting that the period chosen coincides with the length of the management plan, allowing the strategy to be fully implemented and to shape the company's performances. At the end of the forecasted period, the company is assumed to have reached a steady state. Therefore, the remaining life of the company has been synthesized using a terminal growth rate.

The forecasted financial statements are shown in Appendix 8.1, 8.2, and 8.4.

8.1 Revenue forecast

Given the availability of three quarterly reports for FY2024, first-year's revenues have been estimated by forecasting the remaining quarter (Appendix 8.5). Total revenues for FY2024 are estimated in 262.822 million yen, a result similar to the prior year.

Table 10: Casio's forecasted revenues in m¥

	2023	2024F	2025F	2026F	2027F	2028F	2029F	2030F
TimePieces Business	157.500	162.452	160.015	156.815	153.679	149.837	145.342	140.981
<i>YoY Growth in %</i>		3%	-1,5%	-2,0%	-2,0%	-2,5%	-3,0%	-3,0%
EdTech Business	60.000	62.681	62.681	63.057	63.688	64.961	66.261	67.586
<i>YoY Growth in %</i>		4%	0%	1%	1%	2%	2%	2%
Sound Business	26.400	21.446	20.073	18.789	17.774	16.814	16.074	15.367
<i>YoY Growth in %</i>		-19%	-6%	-6%	-5%	-5%	-4%	-4%
System Equipment Business	14.600	11.335	9.068	7.255	6.166	5.242	4.717	4.246
<i>YoY Growth in %</i>		-22%	-20%	-20%	-15%	-15%	-10%	-10%
Others	5.370	4.907	4.579	4.272	3.986	3.719	3.469	3.237
<i>YoY Growth in %</i>		-9%	-7%	-7%	-7%	-7%	-7%	-7%
Total Revenues	263.870	262.822	256.417	250.187	245.293	240.573	235.864	231.417
<i>YoY Growth in %</i>		0%	-2%	-2%	-2%	-2%	-2%	-2%

The determinants taken into consideration to forecast revenue's growth include segment-specific trends, development of key geographies, and own estimates on the effectiveness of the management plan.

In the 'Timepieces' division, FY2024 projected sales are up 3% over the previous year, influenced by the large advertisement effort and the promoting events organized to celebrate

the 40th anniversary of the first Casio electronic wristwatch. In the following years the revenue growth rate approaches and eventually surpasses the pre-pandemic average of -2,0% (2016-2020). From FY2025 to FY2027, the sales contraction is mainly due to the increasing market share captured by smartwatches, as well as the sluggish domestic demand, and a stronger Yen. A recent trend that could additionally deflate watch sales is the establishment of online second-hand markets (e.g. Chrono24.com and Hodinkee.com), where money-savvy customers may be looking for a bargain on durable Casio watches. From FY2028 onward, the decline in watch sales exceeds the pre-pandemic level: new features are added to smartwatches and the amount of personal data available to manufacturers makes it harder for smartwatch users to return to analog watches. The otherwise even stronger revenue reduction is mitigated by the increase in sales of premium metal models.

The 'EdTech' business is projected to maintain the characteristic low volatility of annual revenues. In FY2025, sales remain flat due to the shrinking market for electronic calculators and the smoothing of favourable currency conditions, balanced by strong calculators' sales and the subsidies provided by the 'GIGA School Project' in Japan. Long-term drivers of growth are the global expansion of 'ClassPad.net' and the increasing number of STEM students worldwide. These effects boost growth above the pre-pandemic level of 0%, reaching 1% in the short-term and 2% in the following years. On the other hand, the implementation of functions into the cloud-app may lead a consistent share of potential customers to forgo the purchase of a calculator. Overall, the share of company's revenues generated by the EdTech Business in FY2030 is forecasted to approach 30%.

Before the boost due to 'stay-at-home' policies, the annual growth rate of musical instrument sales was -6%, while 'System Equipment' and 'Other' businesses have seen their sales decline by -15% and -7% respectively over the last 7 years. The forecast implies the inability of the management plan to reverse the current negative trends. The assumption is reinforced by the rate of sales decline in FY2024, consisting of three actual quarters and one forecasted quarter.. Starting from FY2027, the decline is smoothed to account for enhancements in global economic conditions and the presence of loyal customers. Their aggregate contribution to total sales is expected to decrease from 17,6% in FY2023 to 9,9% in FY2030.

Table 11: Casio's forecasted sales share per segment

Sales Share per Segment	2023	2024F	2025F	2026F	2027F	2028F	2029F	2030F
TimePieces Business	59,7%	61,8%	62,4%	62,7%	62,7%	62,3%	61,6%	60,9%
EdTech Business	22,7%	23,8%	24,4%	25,2%	26,0%	27,0%	28,1%	29,2%
Sound Business	10,0%	8,2%	7,8%	7,5%	7,2%	7,0%	6,8%	6,6%
System Equipment Business	5,5%	4,3%	3,5%	2,9%	2,5%	2,2%	2,0%	1,8%
Others	2,0%	1,9%	1,8%	1,7%	1,6%	1,5%	1,5%	1,4%

The average growth rate in total revenues over the forecasted 7-year period is -1,86%, recording an improvement over the previous -4,05% CAGR (FY2016-2023). Casio reaches steady-state period achieving 231.417 million yen of sales, a level not seen in 30+ years.

8.2 Cost and margin forecast

As expressed in a previous chapter, cost of sales historically constituted an amount around 54% of Casio's revenue. In forecasting their future impact, the past 8-year average COGS as percentage of revenues is taken as the reference point, over which making annual variations to account for both temporary and long-lasting effects. In FY2024, the influence of inflation in raw material market is the main cause of the assumed 150 basis points increment. As price increases characterized a consistent portion of the reference period (see chapter 4.1), it is estimated that part of their effect is already reflected in the period's average. Later, the cost saving measures presented as part of the short-term management plan are projected to have an impacting on production costs, starting FY2026. The largest benefit, however, is expected to come from changes in the production mix. As per the table above (Table 11), manufacturing output for watches and calculators increases relative to other segments, replacing the production of less profitable items such as musical instruments and business devices.

Table 12: Casio's forecasted cost of goods sold

Cost of Sales Estimate	2024F	2025F	2026F	2027F	2028F	2029F	2030F
COGS - Past 8Y Avg.	54,1%	54,1%	54,1%	54,1%	54,1%	54,1%	54,1%
Effect on COGS	1,5%	1,0%	0,0%	-0,5%	-0,5%	-1,0%	-1,5%
- Increasing Raw Material Prices							
- Change in product mix							
- Medium-term optimization plan							
COGS % Revenues	55,6%	55,1%	54,1%	53,6%	53,6%	53,1%	52,6%

Future operating expenses as percentage of sales are expected to be considerably higher than the past 8-year average. First, Casio’s post-Covid expenditures constantly exceeded pre pandemic metrics, aiming to generate renewed interest in the value proposition and promote the launch of the official e-commerce. The upward trend continues in FY2024 as Casio celebrates the anniversary of the first wristwatch through the advertising campaign named ‘Shock the world’, which includes the organization of live events, collaboration with influencers, and the opening of pop-up stores. Over the next years, the most meaningful sales expense drivers are the expansion into the Indian and South-East Asian markets as well as the advertisement for revised products following business reforms. Towards the end of the period, the increased share of sales generated through the proprietary physical and online shops is expected to result in lower selling costs and improved margins.

Table 13: Casio’s forecasted SG&A expenses

SG&A Estimate	2024F	2025F	2026F	2027F	2028F	2029F	2030F
SG&A % Revenues - Past 8Y Avg.	30,6%	30,6%	30,6%	30,6%	30,6%	30,6%	30,6%
Effect on SG&A	3,0%	2,5%	2,5%	2,5%	2,0%	1,5%	1,0%
<i>-Increase in advertisement expense for G-Shock anniversary</i> <i>-Increased presence in India and ASEAN markets</i> <i>-Larger portion of sales through online and proprietary shops</i>							
SG&A % Revenues	33,6%	33,1%	33,1%	33,1%	32,6%	32,1%	31,6%

Given the limited disclosure provided by Casio regarding the allocation of R&D funds to each segment and the consistent portion of R&D expenses as percentage of revenues, the forecast assumes research expenditures to remain constant at 2,3% of annual revenues.

8.3 Profitability forecast

The overall impact of the economic and company-specific assumptions is measured in Table 14. Both the Return on Equity and Return on Invested Capital bottom during the first year, at 3,8% and 3,2%, respectively. These ratios follow an upward-sloping trend, attributable to the reforms and optimizations introduced in the previous chapter, ultimately stabilizing ROE at 6,5% and ROIC at 5,3% for FY2030 and beyond.

Table 14: Casio's forecasted profitability ratios

	2024F	2025F	2026F	2027F	2028F	2029F	2030F
Net Income Margin	3%	4%	4%	4%	5%	5%	6%
Avg. Asset Turnover	81%	81%	81%	80%	79%	77%	75%
Avg. Financial Leverage	151%	151%	150%	150%	150%	148%	147%
ROE	3,8%	4,5%	5,1%	5,3%	5,5%	6,1%	6,7%

Effective Tax Rate	23,2%	23,2%	23,2%	23,2%	23,2%	23,2%	23,2%
EBIT	11.386	12.798	14.338	15.055	15.550	17.394	19.179
BV Invested Capital	269.997	268.243	265.736	268.000	270.818	274.065	276.407
ROIC	3,2%	3,7%	4,1%	4,3%	4,4%	4,9%	5,3%

8.4 Assets forecast

The anticipated normalization of the inventory is the main driver of diminishing Net Working Capital in the near future, while company-wide lower revenues determine the long-term downward trajectory. The inventory projection gradually reaches the pre-pandemic average level of 31% of COGS over the course of the next four years. In a similar fashion, trade payables are assumed to approach their pre-2020 average proportion relative to COGS in a few years. On the other hand, accounts receivable remain below their historic average due to the larger percentage of sales generated via proprietary shops and own e-commerce.

Table 15: Casio's forecasted Net Working Capital in m¥

	2024F	2025F	2026F	2027F	2028F	2029F	2030F
Net Working Capital	40.643	35.446	27.957	21.303	20.866	20.350	19.875
Trade Receivables	30.487	32.309	31.524	30.907	30.312	29.719	29.159
<i>% of Revenues</i>	12%	13%	13%	13%	13%	13%	13%
Inventories	61.084	54.211	47.289	41.423	40.626	39.460	38.352
<i>% of COGS</i>	42%	38%	35%	31%	31%	31%	31%
Other Current Assets	6.522	6.278	6.042	5.816	5.598	5.388	5.186
Trade Payables	31.722	32.202	32.316	32.816	32.184	31.260	30.382
<i>% of COGS</i>	22%	23%	24%	25%	25%	25%	25%
Other Current Liabilities	25.729	25.149	24.582	24.028	23.486	22.956	22.438

The length of the ‘Cash Conversion Cycle’ persists above 150 days during the first year of forecasting. Operational efficiency soon increases, and the length stabilizes around 112 days starting in FY2028.

Table 16: Casio’s forecasted Cash Conversion Cycle

	2024F	2025F	2026F	2027F	2028F	2029F	2030F
Days Inventory	157	149	137	123	116	117	117
Days Receivable	75	81	86	87	87	87	88
Days Payable	77	82	87	90	92	92	92
Days Working Capital	156	147	136	119	111	112	112

Given the ambitious objectives outlined in the 2030 management plan and the abundance of cash reserves, the forecasted CapEx-to-depreciation ratio surges by 30 basis points above the maintenance level in the years 2024 and 2025. Non-current intangible assets increase as Casio expands its operation in India and the ASEAN area, necessitating new shops, offices, and facilities. Subsequently, investments smoothen and settle at the long-term ratio of 1, allowing for the replacement of depreciated assets.

In accordance with Casio’s recent history and the lack of publicly known targets, no acquisitions are forecasted, and the long-term asset growth is assumed to be entirely organic.

Table 17: Casio’s forecasted Capital Expenditure in m¥

	2024F	2025F	2026F	2027F	2028F	2029F	2030F
PPE	59.661	63.086	65.455	66.662	67.890	67.890	67.890
Depreciation	10.797	11.417	11.846	12.064	12.286	12.286	12.286
Growth	-2%	6%	4%	2%	2%	0%	0%
in% PPE	18%	18%	18%	18%	18%	18%	18%
CAPEX	14.036	14.842	14.215	13.270	13.515	12.286	12.286
Capex/Depreciation	1,30	1,30	1,20	1,10	1,10	1,00	1,00
Avg. Useful Life of Assets	5,5	5,5	5,5	5,5	5,5	5,5	5,5

The creation of ‘ClassPad.Net’ led non-current intangible assets’ value to grow 7,9% year-over-year between FY2016 and 2023. The ongoing software developments and the increased

economic benefit derived by its global commercialization allow Casio's intangible assets to increase over the full forecasted period, although at a slower pace.

The Reinvestment Rate (RR), which averaged -8.8% over the FY2016-2023 period, is forecasted to decrease to -20,0% in FY2024 due to the normalization of NWC. Over the years, the RR stabilizes at the long-term rate of -3,3%: the company's capital expenditure equals depreciation, and the need for net working capital decreases along with sales.

Table 18: Casio's forecasted Reinvestment Rate

	2024F	2025F	2026F	2027F	2028F	2029F	2030F
Net CapEx	3.239	3.425	2.369	1.206	1.229	0	0
Change in NWC	-4.984	-5.196	-7.489	-6.655	-436	-516	-475
NOPAT	8.744	9.822	10.963	11.345	11.701	13.099	14.451
Reinvestment Rate	-20,0%	-18,0%	-46,7%	-48,0%	6,8%	-3,9%	-3,3%

8.5 Leverage forecast

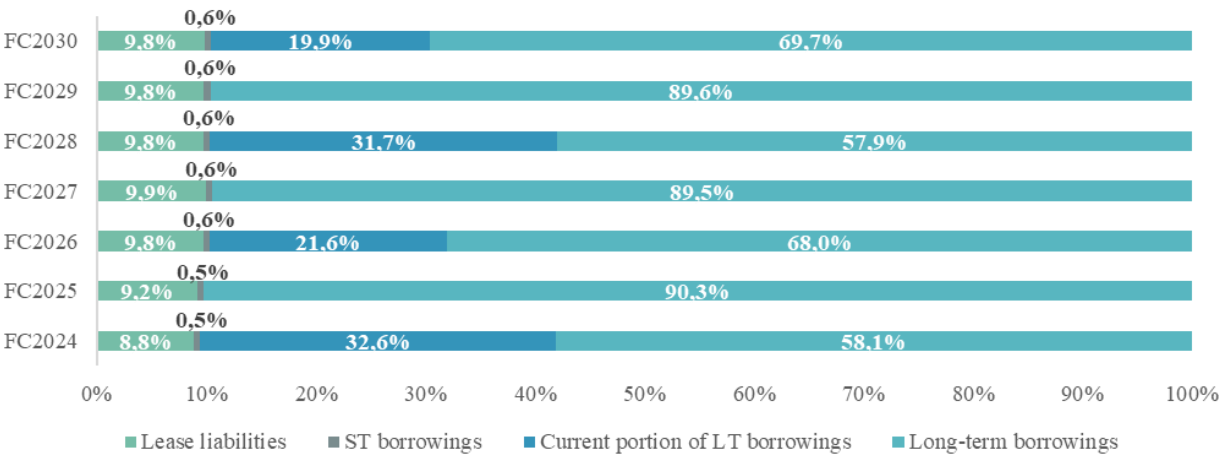
Casio has an above average solvency ability as well as negative net debt amount. Free from any urgency to reduce debt, Casio is assumed to allocate a much larger portion of its excess cash to repurchase shares, around 70% in FY2024 up to 90% in FY2030, rather than repay outstanding obligations.

Table 19: Casio's forecasted excess cash employment

	FC2024	FC2025	FC2026	FC2027	FC2028	FC2029	FC2030
Excess Cash	22.810	7.482	10.979	5.373	(767)	1.166	1.612
Stock Repurchases % Excess Cash	0,7	0,8	0,8	0,9	0,9	0,9	0,9
Debt Repayment % Excess Cash	0,3	0,2	0,2	0,1	0,1	0,1	0,1
Stock Repurchases	15.055	5.686	8.344	4.621	--	1.050	1.451
Debt Repayment	7.755	1.796	2.635	752	(767)	117	161

The projected debt structure remains consistent with the historically conservative policy. More flexible instruments, such as lease liabilities and short-term borrowings, constitute approximately 10% of leveraged financing. The largest source of funding is long-term bank loans, with an estimated maturity of 5 years. As shown in the debt schedule in Appendix 8.7, expiring portions of long-term loans are immediately rolled over.

Figure 19: Casio's forecasted debt structure



8.6 Cash and Equity forecast

Casio’s recent dividend policy shows a clear preference for paying a fixed amount of ¥45 per share, rather than distributing a given percentage of earnings. The dividend payout ratio (DPO) fluctuated significantly, reaching concerning levels in FY2021 and 2023. In response, CFO Shin Takano announced that the company has changed its approach and is now targeting a DPO level of 60% over the end of the medium-term period. The forecast assumes that the DPO will reach the desired level by the end of FY2026 through gradual reductions. At that date, the projected dividend per share is ¥28,18, while the forecasted total dividend amount is 6,242 billion yen, down from 10,764 billion in FY2023.

By the end of FY2026, Casio is expected to achieve another target set by its CFO, which is to reduce liquidity on hand from 130 to 100 billion yen. As previously reported, most of the excess cash is allocated to repurchasing outstanding share, with the remaining amount employed for debt reduction.

Table 20: Casio's forecasted EPS, DPS, and payout ratio

	2024F	2025F	2026F	2027F	2028F	2029F	2030F
Common Dividends	(6.184)	(6.255)	(6.242)	(6.473)	(6.688)	(7.524)	(8.332)
Change in Debt	(7.755)	(1.796)	(2.635)	(752)	767	(117)	(161)
Stock Repurchases	(15.055)	(5.686)	(8.344)	(4.621)	0	(1.050)	(1.451)
EPS	¥35,5	¥41,0	¥47,3	¥49,8	¥51,5	¥58,1	¥64,7
DPS	¥26,7	¥27,5	¥28,2	¥29,7	¥30,7	¥34,6	¥38,5
Payout Ratio	75%	67%	60%	60%	60%	60%	60%

The FX rate chart in Figure 13 shows the Japanese Yen further weakening compared to other reserve currencies in April 2023, in concomitance with the appointment of new Bank of Japan's Governor, Kazuo Ueda, and the decision not to alter the negative interest rates. One year and several global monetary policy changes later, the Yen continues to lose strength. Casio is assumed to benefit from the FX rate until FY2026, returning to the negative net effect seen before FY2020 in the following year (Appendix 8.6).

Table 21: Casio's forecasted cash balance in m¥

	2024F	2025F	2026F	2027F	2028F	2029F	2030F
Opening Cash Balance	130.674	110.000	105.000	100.000	100.000	100.000	100.000
Cash Flow from Operations	19.365	21.497	25.574	25.534	20.075	21.727	23.204
Cash Flow from Investing	(13.263)	(14.279)	(13.926)	(13.091)	(13.537)	(12.338)	(12.483)
Cash Flow from Financing	(28.994)	(13.737)	(17.221)	(11.846)	(5.920)	(8.690)	(9.944)
FX Rate Effect	2.217	1.520	573	(597)	(618)	(699)	(777)
Net Change in Cash	(20.674)	(5.000)	(5.000)	0	0	0	0
Closing Cash Balance	110.000	105.000	100.000	100.000	100.000	100.000	100.000

9 DCF Valuation

The assumptions outlined in the previous chapter are the basis for forecasting of Casio's financial performances for the period FY2024-2030. Table 22 illustrates how the company generates Free Cash Flow to the Firm (FCFF), which corresponds to the amount of cash generated through operations and available to both bond- and equity-holders. All the market data presented in this chapter are updated as of 30/04/2024, the date on which the recommendation is issued.

Table 22: Casio's forecasted FCFF in m¥

	2024F	2025F	2026F	2027F	2028F	2029F	2030F
Revenue	262.822	256.417	250.187	245.293	240.573	235.864	231.417
EBITDA	22.183	24.206	26.120	26.836	27.522	29.342	31.103
(-) D&A	(10.797)	(11.417)	(11.846)	(12.064)	(12.286)	(12.286)	(12.286)
EBIT	11.386	12.789	14.274	14.772	15.236	17.056	18.817
Tax Rate	23,2%	23,2%	23,2%	23,2%	23,2%	23,2%	23,2%
NOPAT	8.744	9.822	10.963	11.345	11.701	13.099	14.451
(+) D&A	10.797	11.417	11.846	12.064	12.286	12.286	12.286
(-) CapEx	(14.036)	(14.842)	(14.215)	(13.270)	(13.515)	(12.286)	(12.286)
(-) Chg. in NW	4.984	5.196	7.489	6.655	436	516	475
FCFF	10.490	11.593	16.083	16.793	10.909	13.615	14.926

9.1 Market value of Equity and Debt

The present valuation of Casio employs the DCF methodology using the Free Cash Flow to the Firms. Chapter 1.3 shows that the appropriate FCFF's discount rate is the the Weighted Average Cost of Capital (WACC). Moreover, it indicates that the target proportions of debt and equity, expressed in market values, are the appropriate weights in the WACC equation. Given the negligible changes in capital structure in recent years and the absence of management indication in the 2030 plan, Casio is assumed to have already reached its desired capital structure.

The MV of equity is easily retrievable on Refinitiv Eikon by looking at the outstanding market capitalization. Casio's market capitalization is equal to ¥305'499 million, based on the number of outstanding shares (231,79 million) and the share price (¥1'318,00).

Casio's debt is entirely private, and the key elements to assess its MV, such as the yield to maturity, are not disclosed. Therefore, the company's own valuation of the fair value of debt and operating leases is considered as the MV. The historical difference between Casio's BV and MV of debt is marginal, in accordance with Fernandez (2002). Thus, the future MV of debt is assumed to equal to the forecasted BV.

9.2 Risk-Free Rate

Adopting the approach outlined by Koller et al. (2015) in Chapter 1.4, the risk-free rate is determined based on a single long-term sovereign bond. The yield of the 10-year Japanese Government Bond, denominated in JPY, is selected as proxy for the risk-free rate. The security meets the criteria of being issued by a risk-free entity in the same currency as Casio's cash flows. The 10-year maturity is preferred over the 30-year bond due to its higher liquidity. Therefore, the risk-free yield on 30/04/2024 is 0,88% (Bloomberg).

9.3 Cost of Debt

In valuation, a firm's cost of debt is generally determined either by calculating the average yield to maturity of the company's outstanding bonds or by adding a premium to the risk-free rate for the risk of default, based on an actual or synthetic rating.

However, the above approaches are not applicable to the valuation of Casio's cost of debt. In fact, the YTM of its outstanding debt is not available, the company has not been recently rated by any of the three main rating agencies, and the synthetic credit rating tables publicly accessible online (e.g., on Damodaran's website) refer to the US market.

Therefore, Casio's cost of debt is obtained through the Credit Default Swap (CDS) market. On 30/04/2024, the CDS 10-year par rate for Casio is 0,4317%. This means that the CDS buyer pays an annual premium of 0,4317% of the notional amount to the seller to insure against default on Casio's debt for a period of 10 years (Lando, 2004). The par rate is considered a proxy for the credit spread, and the total cost of debt is obtained by adding the 10-year risk free rate. As a result, Casio's pre-tax cost of debt is 1,31%.

Payments to debtholders are exempt from corporate taxation, which in Japan stands at 23,2%. Therefore, the after-tax cost of debt stands at 1,01%.

9.4 Cost of equity

As seen in Chapter 1.6, the present valuation employs the CAPM methodology to estimate Casio's cost of equity. Having already determined the risk-free rate and cost of equity, the missing variable of the CAPM is Beta. Beta can be derived either by regressing the stock's returns against the market's returns ('historical Beta') or by levering the average unlevered beta of peer companies ('bottom-up or peers Beta'). Although both approaches present advantages and disadvantages, the bottom-up is regarded as more accurate. Nonetheless, the calculation of historical beta and the cause of its exclusion are clarified in Appendix 8.14.

The bottom-up method is composed of four steps (Table 23):

- Step 1: A list of companies operating in the same businesses as Casio (Watches, EdTech, Musical Instruments, and System Equipment) is identified. More information about the selection of companies can be found in Chapter 5 on 'Relative Valuation'.
- Step 2: The peers are split between groups based on the belonging to specific industries. Each group's average levered Beta is unlevered using the average debt-to-equity ratio and tax rate.
- Step 3: The weighted average of unlevered peers' Beta is calculated according to the weight of each business in Casio's revenues.
- Step 4: The obtained Beta is levered using Casio's data and adjusted following Blume's formula.

Casio's Beta according to the bottom-up method stands at 0,82.

Table 23: Casio's peer beta calculation

Company	Industry	Levered Beta	Effective Tax Rate (%)	Debt/Equity (%)	Unlevered Beta
Seiko Epson Corp	Watches	1,58	27,7%	32,1%	1,28
Citizen Watch Co	Watches	1,20	25,5%	31,7%	0,97
Watches Average:		1,39	26,6%	31,9%	1,13
Sharp Corp	EdTech	1,28	9,5%	352,4%	0,30
EdTech Average:		1,28	9,5%	352,4%	0,30
Yamaha Corp	Musical Instruments	1,24	24,5%	3,9%	1,20
Roland Corp	Musical Instruments	0,25	26,5%	63,4%	0,17
Musical Instruments Average:		0,75	25,5%	33,6%	0,60
Horiba Ltd	System Equipment	1,60	25,0%	22,8%	1,37
Toshiba Tec Corp	System Equipment	0,68	149,3%	44,7%	0,87
System Equipment Average:		1,14	0,87	0,34	1,09

Segment	% of Revenue	Segment Unlevered Beta
Watches	60%	1,13
EdTech	23%	0,30
Musical Instruments	10%	0,60
System Equipment	8%	1,09
Weighted average unlevered Beta:		0,88
Casio Debt/Equity Ratio		0,26
Casio Effective Tax Rate		0,23
Casio Levered Beta		0,74

<p>Blume – adjusted Beta:</p> $\frac{1}{3} + \frac{2}{3} * 0,73 = 0,82$
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In accordance with Damodaran (2012), the Market Risk Premium (MRP) that compensates market participants for the risk taken by investing in Casio's equity should be estimated by adding the Japanese Country Risk Premium (CRP) to the MRP of the most mature market, the US. Given the geographically diverse operations of the company, this valuation employs an alternative approach that applies an average CRP of the countries in which Casio operates, weighted by the country's revenue split. As such, Japanese CRP of 1,0% constitutes just 23,5% of the final CRP assigned to Casio, equal to 1,89% (Appendix 8.9). The US MRP, retrieved from Damodaran's website, stands at 4,6%.

Finally, Casio's cost of equity is 6,22%, while the firm's WACC is 5,49% (Table 24).

Table 24: WACC calculation

WACC Calculation	
Beta	0,82
Risk Free Rate	0,88%
Market Risk Premium (US)	4,60%
Country Risk Premium	1,89%
Expected Return	6,22%
Pre-Tax Cost of Debt	1,31%
Tax Rate	23%
After-Tax Cost of Debt	1,01%
Equity/ Invested Capital	0,86
Debt/ Invested Capital	0,14
WACC	5,49%

9.5 Terminal Value

The terminal value (TV) represents the total amount of FCFF generated by Casio from 2031 onwards, discounted to the year preceding the start of the stable growth phase. Generally, the TV constitutes the largest part of the company's value. As such, its inputs must be particularly supported by solid reasoning.

Two of the three variables comprising the 'Gordon Growth Model', FCFF and WACC, have been already established, with the 'stable rate of growth' (g) being the missing element. As argued in the Literature Review, there is no clear superior method for calculating the stable growth rate, but rather some indications regarding its bounds. This valuation follows the indication provided by Damodaran (2012), who suggests that 'g' should not exceed the nominal growth rate of the global economy, adding that practitioners should adhere to the rule of thumb of setting 'g' below the risk-less rate used in the valuation.

Given that the longest available outlook on the global economic nominal growth, namely the IMF report cited in Chapter 4.1, extends just to the year 2025, the upper bound for the stable growth rate is set equal to the Japanese 10-year risk-free rate (0,88%).

The author states that the TV should be linked to the stable-phase projections of the rate of reinvestment (RR) and return on invested capital (ROIC). As previously reported, the rates respectively stand at -3,3% and 5,5%, resulting in a long-term FCFF's growth rate of -0,18%.

Forecasting a negative stable growth rate is infrequent in valuation. However, rejecting this possibility involves deviating from the standard corporate life cycle taught in economics books, which includes a start-up phase followed by maturity and decline, in favour of the assumption of ever-expanding companies. Considering the unfavourable trend that has characterized the company's historical performance over the past 15 years and the own assessment of the proposed management plan, Casio is assumed to be approaching the declining stage of its life.

9.6 Equity Bridge and Share Price

To determine the intrinsic share price, it is necessary to reconcile the present value of cash flows from core operations, known as the 'Enterprise Value', with the value of equity through the 'Equity Bridge'.

Casio's estimated EV is ¥240.614 million, to which is added the non-operating cash reserve of ¥110.000 million. Claims to Casio's assets have a relatively straightforward structure, consisting only of private debt and the obligation to fund the 'defined benefit' pension plan. The debt amount stands at ¥49.856 million, while the pension plan is currently overfunded by ¥15.443 million. Using the 'equity bridge' process shown in Table 25, the 'Equity Value' amounts to ¥316.202 million.

To estimate the price per share, the equity value is divided by the diluted number of shares. In its latest annual report, the company makes multiple references to the presence of non-monetary compensations, including employee stock options. However, no clear number is provided. Therefore, the equity value is divided by the number of outstanding common shares, which is 231,79 million.

The intrinsic price per share estimated through the DCF methodology is ¥1.364,17.

Table 25: Casio's equity bridge in m¥

As of 30/04/2024	
Enterprise Value	240.614
+ Non operating Cash	110.000
- Debt	49.856
+ Net Defined Pension Benefit	15.443
Equity Value	316.202
# Shares Outstanding (mln)	231,79
Price per Share (JPY)	¥ 1.364,17

9.7 Sensitivity Analysis

The terminal growth rate and the WACC are the most important determinants of any DCF valuation. Since these values originate from analysts' assumptions, it is useful to test how slight adjustments to 'g' and WACC impact the final valuation.

Table 26: Casio's sensitivity table

		WACC				
		5,29%	5,39%	5,49%	5,59%	5,69%
Terminal Growth Rate	0,88%	¥1.931,11	¥1.892,84	¥1.855,29	¥1.821,25	¥1.787,73
	0,35%	¥1.638,58	¥1.611,03	¥1.583,86	¥1.559,12	¥1.534,65
	-0,18%	¥1.403,80	¥1.383,89	¥1.364,17	¥1.346,15	¥1.328,26
	-0,71%	¥1.212,23	¥1.197,90	¥1.183,67	¥1.170,62	¥1.157,61
	-1,24%	¥1.052,67	¥1.042,55	¥1.032,47	¥1.023,19	¥1.013,92

10 Relative Valuation

The first and most critical step in Relative Valuation involves the selection of comparable companies. The vague definition of ‘comparable’ leaves significant freedom to the analyst, who must find a balance between a large enough peer group and the need of affinity. In the watch industry, the most resembling companies are ‘Citizen’ and ‘Seiko’. They share a similarly glorious history of excellence, as well as size, revenues, and recent performance. In the EdTech industry, the majority of potential peers, such as Texas Instruments and HP, are enormous corporations more than 10 times bigger than Casio. The only company sharing some degree of similarity is Sharp. Peer firms operating in the production of electronic musical instruments are Yamaha and Roland, while the list of comparable companies in the System Equipment industry is composed by Horiba and Toshiba.

A brief presentation of the peer companies is available in Appendix 8.10.

Table 27: Peer companies overview

Company	HQ	Industry	Enterprise Value	Revenue FY2023	EBITDA FY2023	EBIT FY2023	Past 5Y Revenue CAGR	Past 5Y Earnings CAGR
Casio Computer Co	Japan	-	277.540	263.831	29.126	18.164	-3,47%	-6,83%
Citizen Watch Co	Japan	Watches	235.627	301.366	34.889	23.689	-1,20%	4,41%
Seiko Group Corp	Japan	Watches	273.080	260.504	23.592	11.233	-0,60%	-15,33%
Sharp Corp	Japan	EdTech	1.025.577	2.548.117	64.080	-25.719	0,98%	n.a.
Yamaha Corp	Japan	Musical Instruments	576.552	462.866	50.022	28.999	1,28%	-4,58%
Roland Corp	Japan	Musical Instruments	132.828	102.445	14.626	11.871	10,87%	20,99%
Horiba Ltd	Japan	System Equipment	586.581	290.558	59.898	47.296	6,65%	12,48%
Toshiba Tec Corp	Japan	System Equipment	167.018	510.767	32.833	16.078	-0,10%	n.a.

In this Relative Valuation, Casio is treated as a conglomerate comprising four smaller companies, one for each major business line in which Casio operates. Average multiples for each business are estimated, and the final multiple is calculated as the average of the industry multiples, weighted by Casio's revenues.

The multiples used in estimating Enterprise Value are 'EV/Current EBITDA' and 'EV/2Y Forward NOPAT'. EV multiples are not affected by different capital structures and are therefore preferred over Price multiples. Existing financial literature has demonstrated the superior pricing power of forward multiples. However, one current multiple is also employed to improve

completeness. EBITDA and NOPAT are considered the ideal denominators for EV multiples (Koller, Goedhart, & Wessels, 2015). NOPAT is preferred as it accounts for differences in tax rates. EBITDA is used as the denominator in the current multiple because Sharp, the only EdTech peer, reported negative NOPAT in FY2023.

Table 28: Casio's relative valuation

	Industry	Enterprise Value	EBITDA FY2023	2Y Forward NOPAT	2Y Forward Tax Rate	Current EV/EBITDA	2Y Forward EV/NOPAT
Citizen Watch Co Ltd	Watches	235.627	34.889	20.088	26%	6,8x	11,7x
Seiko Group Corp	Watches	273.080	23.592	13.138	29%	11,6x	20,8x
Watches Average:						9,2x	16,3x
Sharp Corp	EdTech	1.025.577	64.080	39.000	25%	16,0x	26,3x
EdTech Average:						16,0x	26,3x
Yamaha Corp	Musical Instruments	576.552	50.022	34.451	27%	11,5x	16,7x
Roland Corp	Musical Instruments	132.828	14.626	11.365	23%	9,1x	11,7x
Musical Instruments Average:						10,3x	14,2x
Horiba Ltd	System Equipment	586.581	59.898	43.660	26%	9,8x	13,4x
Toshiba Tec Corp	System Equipment	167.018	32.833	15.833	29%	5,1x	10,5x
System Equipment Average:						7,4x	12,0x

Revenue weighted multiple	10,7x	18,0x
Revenue weighted EV	311.742	198.359
Non-Operating Cash	110.000	110.000
(-) Debt	49.856	49.856
Pension Obligations	15.443	15.443
Equity Value	387.330	273.947
Number of Shares (million)	231,8	231,8
Share Price	¥1.671,04	¥1.181,88

The revenue-weighted average multiple using Current EBITDA is 10,7x, resulting in an Enterprise Value of 311.742 million yen and a share price of ¥1.671,04. Employing the average 2Y Forward NOPAT multiple leads to an EV of 198.359 million yen and a per-share value of ¥1.181,88.

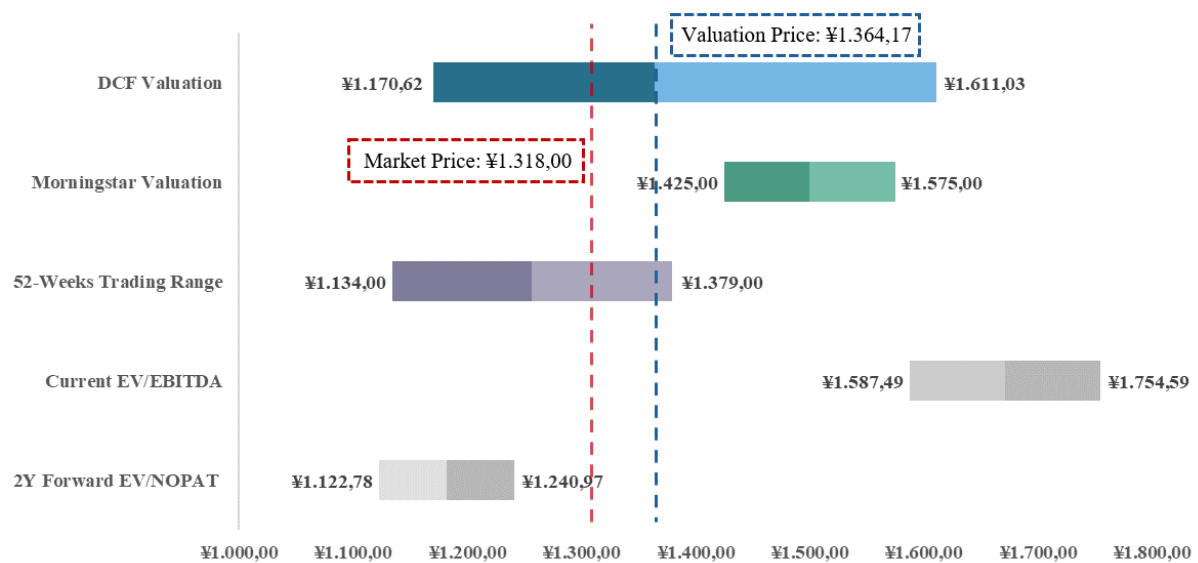
According to the literature review, the foundation of any relative valuation lies in the assumption that the market might misjudge the price an individual security, while being correct on average. As such, selecting a large sample of comparable companies enables the calculation of an average that should accurately estimates the company's price. Casio has unique characteristics that differentiate it from competitors within its sectors, which are crowded by giant corporations like Swatch, HP, Texas Instruments, and Sysmex, as well as

regional private players like Aurora and Pioneer. Therefore, only a restricted number of firms can be labelled as ‘comparable’, negatively influencing the quality of the relative valuation. In the EdTech industry, for example, ‘Sharp’ is the closest competitor among the producers of calculators and other learning supports; nonetheless, it has 3,5 times the EV of Casio and 10 times its revenue. Overall, the list of comparable firms is deemed to be insufficiently large to provide a significant result, and its value is not taken into account in issuing the investment recommendation.

11 Valuation summary

In conclusion, the price obtained by the Discounted Cash Flow methodology is the selected benchmark on which is issued the investment recommendation. The estimated intrinsic price per share at 30/04/2024 is ¥1.364,17. Comparison with the market price at the day's close of ¥1.318,00 indicates that Casio is undervalued by 3,5%. Since the percentage difference is below the standard 10% threshold, a "Hold" recommendation is issued.

Figure 20: Valuation football field chart



The intrinsic price obtained in this thesis is compared with the investment report published by Morningstar on 15/12/2023, as well as the aggregate analyst sentiment on 30/04/2023, available on Refinitiv.

Morningstar employs the DCF methodology and obtains a share price of ¥1.500,00. Two major projections are mentioned in the text: the CAGR of watch revenues in the mid-term and the operating margin in FY2027. Morningstar forecasts 4.0% growth, a level not achieved in any of the last 8 years, compared to the -2,3% contraction forecasted in this thesis. Regarding profitability, Morningstar forecasts an operating margin of 10.5% in FY 2027, while this dissertation forecasts 6.0%.

Table 29: Comparison between Morningstar and own analysis

Comparison	MorningStar	Own Analysis
Recommendation Date	15/12/2023	30/04/2024
CAGR in Watch Revenues 2024-2030	4,0%	-2,3%
Operating Margin in FY2027	10,5%	6,0%
Price per Share	¥1.500,00	¥1.364,17

Refinitiv reports that among the 8 analysts with an updated recommendation on Casio as of 30/04/2024, 6 recommend "Hold," 1 "Buy," and 1 "Strong Buy" (Appendix 8.15). The target price is ¥1.316,67, which is 3.5% lower than the price obtained in this thesis.

12 Appendix

Appendix 12.1 – Forecasted Income Statement FY2024-2030 (in m¥)

INCOME STATEMENT	FC2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
Revenue	262.822	256.417	250.187	245.293	240.573	235.864	231.417
Cost of Sales	(146.258)	(141.411)	(135.474)	(131.597)	(129.065)	(125.359)	(121.839)
SG&A	(88.261)	(84.828)	(82.767)	(81.148)	(78.384)	(75.670)	(73.086)
Research & Development	(6.120)	(5.971)	(5.826)	(5.712)	(5.602)	(5.492)	(5.389)
Depreciation	(10.797)	(11.417)	(11.846)	(12.064)	(12.286)	(12.286)	(12.286)
EBIT	11.386	12.789	14.274	14.772	15.236	17.056	18.817
Other Income	(3.445)	(3.361)	(3.280)	(3.215)	(3.154)	(3.092)	(3.034)
Interest Expense	(238)	(235)	(229)	(228)	(229)	(229)	(229)
Interest Income	535	522	509	499	490	480	471
Investment Income	1.840	1.796	1.752	1.718	1.685	1.652	1.620
Tax Expense	(1.842)	(2.187)	(2.551)	(2.681)	(2.803)	(3.240)	(3.662)
Net Profit/Loss	8.236	9.324	10.476	10.864	11.224	12.627	13.984

Appendix 12.2 – Forecasted Balance Sheet FY2024-2030 (in m¥)

BALANCE SHEET - ASSETS	FC2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
Cash and Cash Equivalents	110.000	105.000	100.000	100.000	100.000	100.000	100.000
Trade Receivables	30.487	32.309	31.524	30.907	30.312	29.719	29.159
Inventories	61.084	54.211	47.289	41.423	40.626	39.460	38.352
Other Current Assets	6.522	6.278	6.042	5.816	5.598	5.388	5.186
Non-Current Tangible Assets	59.661	63.086	65.455	66.662	67.890	67.890	67.890
Non-Current Intangible Assets	11.613	12.417	13.277	14.063	14.897	15.630	16.400
Other Non-Operating Investments	8.571	7.204	6.055	5.089	4.278	3.595	3.022
Other items	29.449	33.172	36.708	40.068	43.259	46.291	49.172
Total Assets	317.388	313.676	306.350	304.028	306.860	307.974	309.180

BALANCE SHEET - EQUITY & LIABILITIES	FC2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
Trade Payables	31.722	32.202	32.316	32.816	32.184	31.260	30.382
Other Current Liabilities	25.729	25.149	24.582	24.028	23.486	22.956	22.438
Current Debt	17.031	2.031	11.031	2.031	15.235	2.031	10.279
Non-Current Debt	32.825	46.029	34.394	42.642	30.205	43.292	34.883
Ordinary Shareholders' Equity	98.715	98.715	98.715	98.715	98.715	98.715	98.715
Other equity items	111.366	109.550	105.313	103.797	107.035	109.719	112.482
Total Liab. & Shareholders' Equity	317.388	313.676	306.350	304.028	306.860	307.974	309.180

Appendix 12.3 – Historical Cash Flow Statement FY2016-2013 (in m¥)

CASH FLOW FROM OPERATIONS	A2016	A2017	A2018	A2019	A2020	A2021	A2022	A2023
Profit before Income Taxes	40.664	23.455	24.612	29.369	27.641	17.908	22.910	16.832
Depreciation	9.708	9.741	9.394	9.684	11.767	11.076	11.392	10.962
Change in WC	(7.582)	3.021	4.914	(6.352)	6.998	7.501	(8.711)	(9.463)
Interest Expense	(990)	(445)	(412)	(285)	(276)	(286)	(233)	(222)
Other Items	(4.257)	(934)	(490)	(6.278)	(9.037)	(7.036)	(3.326)	(1.639)
Income Taxes Paid	(5.378)	(6.951)	(3.592)	(5.409)	(6.893)	(4.629)	(5.624)	(5.101)
Cash Flow from Operations	32.710	27.920	34.553	20.738	30.190	24.587	16.419	11.339
CASH FLOW FROM INVESTING	A2016	A2017	A2018	A2019	A2020	A2021	A2022	A2023
CapEx	(10.346)	(8.963)	(10.479)	(12.733)	(9.882)	(8.326)	(10.974)	(11.046)
Sale/Purchase of Investments and Others	18.505	5.708	2.168	6.506	8.187	5.210	4.878	7.900
Cash Flow from Investing:	8.159	(3.255)	(8.311)	(6.227)	(1.695)	(3.116)	(6.096)	(3.146)
CASH FLOW FROM FINANCING	A2016	A2017	A2018	A2019	A2020	A2021	A2022	A2023
Change in Debt	(923)	(5.059)	(728)	(4.610)	(8.288)	(12.027)	(5.660)	(2.190)
Common Dividends	(10.454)	(10.894)	(9.853)	(12.316)	(11.616)	(10.916)	(10.918)	(10.801)
Stock Repurchases	(10.297)	(14.980)	(8)	(8)	(5.011)	(7)	(2.455)	(2.241)
Cash Flow from Financing:	(21.673)	(30.933)	(10.589)	(16.934)	(24.915)	(22.950)	(19.033)	(15.232)
FX Rate Effect:	(1.876)	(3.034)	146	77	(1.474)	4.218	5.561	3.367
Net Change in Cash:	17.320	(9.302)	15.799	(2.346)	2.106	2.739	(3.149)	(3.672)

Appendix 12.4 – Forecasted Cash Flow Statement FY2024-2030 (in m¥)

CASH FLOW FROM OPERATIONS	FC2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
Profit before Income Taxes	10.078	11.511	13.027	13.545	14.027	15.867	17.646
Depreciation	10.797	11.417	11.846	12.064	12.286	12.286	12.286
Change in WC	4.984	5.196	7.489	6.655	436	516	475
Interest Expense	(238)	(235)	(229)	(228)	(229)	(229)	(229)
Other Items	(3.918)	(3.722)	(3.536)	(3.360)	(3.192)	(3.032)	(2.880)
Income Taxes Paid	(2.338)	(2.671)	(3.022)	(3.143)	(3.254)	(3.681)	(4.094)
Cash Flow from Operations	19.365	21.497	25.574	25.534	20.075	21.727	23.204
CASH FLOW FROM INVESTING	FC2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
CapEx	(14.036)	(14.842)	(14.215)	(13.270)	(13.515)	(12.286)	(12.286)
Sale/Purchase of Investments and Others	774	563	289	179	(22)	(51)	(196)
Cash Flow from Investing:	(13.263)	(14.279)	(13.926)	(13.091)	(13.537)	(12.338)	(12.483)
CASH FLOW FROM FINANCING	FC2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
Change in Debt	(7.755)	(1.796)	(2.635)	(752)	767	(117)	(161)
Common Dividends	(6.184)	(6.255)	(6.242)	(6.473)	(6.688)	(7.524)	(8.332)
Stock Repurchases	(15.055)	(5.686)	(8.344)	(4.621)	0	(1.050)	(1.451)
Cash Flow from Financing:	(28.994)	(13.737)	(17.221)	(11.846)	(5.920)	(8.690)	(9.944)
FX Rate Effect:	2.217	1.520	573	(597)	(618)	(699)	(777)
Net Change in Cash:	(20.674)	(5.000)	(5.000)	0	(0)	(0)	(0)

Appendix 12.5 – Forecasted Revenues in full FY2024 (in m¥)

FY2024 Sales Estimate	Q1 Actual	Q2 Actual	Q3 Actual	Q4 Forecast	2024 Full Year
TimePieces Business	38.400	43.300	44.700	36.052	162.452
EdTech Business	16.400	16.800	12.300	17.181	62.681
Sound Business	4.400	6.100	6.700	4.246	21.446
System Equipment Business	2.200	3.200	3.000	2.935	11.335
Others	1.300	1.300	1.100	1.207	4.907
Total	62.700	70.700	67.800	61.622	262.822

Appendix 12.6 – Forecasted Common Dividends and FX Rate Effect FY2024-2030

Common Dividends Estimate	FC2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
Common Dividends - Past 1Y Payout Ratio	82,6%	82,6%	82,6%	82,6%	82,6%	82,6%	82,6%
Effect on Payout Ratio	-7,5%	-15,5%	-23,0%	-23,0%	-23,0%	-23,0%	-23,0%
<i>- Management guidance ("Just over 60%")</i>							
Common Dividends Payout Ratio	75,1%	67,1%	59,6%	59,6%	59,6%	59,6%	59,6%

FX Rate Effect Estimate	FC2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030
FX Rate % Profit before Tax - 2016-2020 avg.	-4,4%	-4,4%	-4,4%	-4,4%	-4,4%	-4,4%	-4,4%
Effect on FX Rate	2,0%	-8,8%	-8,8%	-8,8%	0,0%	0,0%	0,0%
<i>- Return to pre-pandemic average in 4 years</i>							
FX Rate Effect % Sales	22,0%	13,2%	4,4%	-4,4%	-4,4%	-4,4%	-4,4%

Appendix 12.7 – Actual and Forecasted Debt Schedule FY2024-2030 (in m¥)

Actual Debt Schedule	2016	2017	2018	2019	2020	2021	2022	2023
Short term borrowings	260	155	205	232	186	153	235	239
Current portion of long-term borrowings	--	2.000	16.500	--	25.000	3.634	8.000	25.500
Current portion of lease liabilities	841	733	594	538	1.798	1.791	1.866	1.792
Long-term borrowings (excluding current portion)	67.000	61.000	46.500	58.988	37.847	49.500	41.500	24.000
Lease liabilities (excluding current portion)	1.354	1.291	1.115	859	2.947	2.473	2.019	2.271
Other Non-Current Liabilities (non-interest bearing)	8.388	8.602	7.262	3.326	3.699	2.938	3.193	3.809

Interest Expense	(990,0)	(445,0)	(412,0)	(285,0)	(276,0)	(286,0)	(233,0)	(222,0)
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2023 Avg. Interest Rate on ST Borrowings	0,1%
2023 Average Interest Rate on Debt	0,2%
2023 Average Interest Rate on Leases	4%

Forecasted Debt Schedule	FC2024	FC2025	FC2026	FC2027	FC2028	FC2029	FC2030
Short term borrowings	239	239	239	239	239	239	239
Current portion of long-term borrowings	15.000	--	9.000	--	13.204	--	8.248
Current portion of lease liabilities	1.792	1.792	1.792	1.792	1.792	1.792	1.792
Long-term borrowings (excluding current portion)	26.745	39.949	28.314	36.562	24.125	37.212	28.803
Lease liabilities (excluding current portion)	2.271	2.271	2.271	2.271	2.271	2.271	2.271
Other Non-Current Liabilities (non-interest bearing)	3.809	3.809	3.809	3.809	3.809	3.809	3.809

Interest Expense	238,1	234,5	229,3	227,8	229,3	229,1	228,7
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Appendix 12.8 – Tax Rate Estimate

	2018	2019	2020	2021	2022	2023
EBT	24.612	29.369	27.641	17.908	22.910	16.832
Tax Expense	5.049	7.234	10.053	5.894	7.021	3.753
Effective Tax Rate	20,5%	24,6%	36,4%	32,9%	30,6%	22,3%
Average FY18-FY21	28%					
Corporate Tax Rate in Japan (companies with share capital over JPY100mln)	23,2%					

Appendix 12.9 – Country Risk Premium Estimate

Country	Sales Share in FY23	Country Risk Premium
Japan	23,5%	1,0%
China	14,4%	1,0%
Rest of Asia	15,0%	1,7%
North America	14,6%	0,0%
Europe	18,3%	2,0%
Others	14,0%	6,2%
Weighted Average CRP:	1,9%	

Appendix 12.10 – Peer Companies Overview

Citizen Watch

Citizen Watch is a Japanese manufacturer of wristwatches, founded in Tokio in 1924. Citizen is known worldwide for its high-quality, robust, and affordable timepieces. In 1973, Citizen began implementing watches with quartz movement to its lineup of automatic watches. Citizen launched its first ever smartwatch in November 2020, the ‘CZ Smart’, equipped with Bluetooth, GPS, heart rate monitor, and Google and third-party apps.

Seiko Group,

Seiko is among the most historic watch manufacturers with more than 130 years of illustrious history. Seiko has always been recognized for bringing innovation to the world of wristwatches.

Seiko produced the first wristwatch ever made in Japan (1913) and the world's first quartz watch (1969). In 1960, Seiko launched the 'Grand Seiko' lineup, composed of only the highest-quality models among Seiko watches, which recently became an independent brand.

Sharp

Sharp is a Japanese producer of consumer electronics founded in Tokio in 1912. Among the vast lineup of products, Sharp produces calculators, printers, televisions, and home appliances. Since 2016, the majority of the company is owned by the Taiwan-based Foxconn.

Yamaha

Yamaha is a Japanese company and the largest manufacturer of electronic musical instruments worldwide. Founded in 1887 as a manufacturer of musical instruments, in the 1950s Yamaha diversified its production by entering the motorcycle market with enormous success. However, the motorcycle division was quickly separated from the parent company and is known today as 'Yamaha Motor'. Today, Yamaha generates most of its sales in Asia, followed by North America and Europe.

Roland

Roland is a Japanese manufacturer of electronic musical instruments founded in 1972. Roland operates in the production of digital pianos, electronic drums, synthesizers, and amplifiers. In 2016, the music magazine 'Fact' wrote that Roland is the most influential company in the electronic music industry.

Toshiba

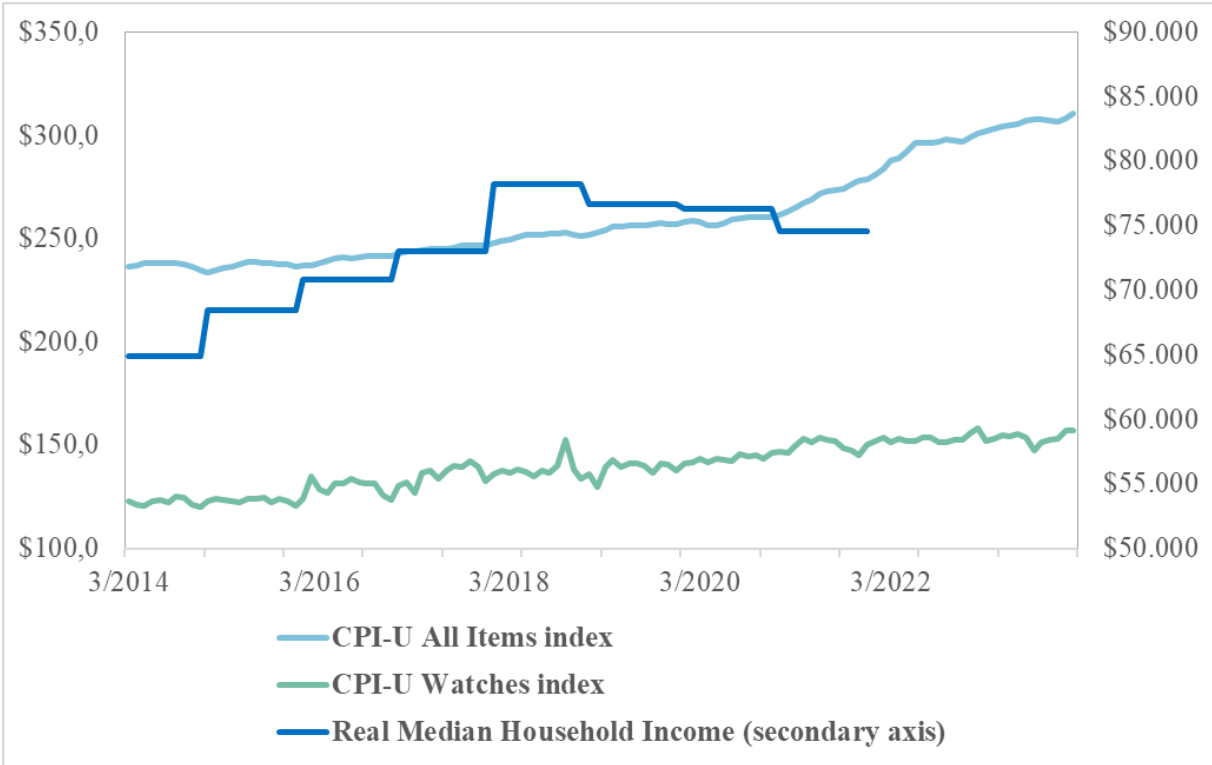
Toshiba is a Japanese company founded in 1875 that operates in the electrical equipment and information technology. In the business equipment division, Toshiba produces point of sales equipment (POS). Toshiba was involved in an accounting scandal in 2015, when it was discovered that the company had been reporting inflated profits for the past seven years and that members of the Japanese government were involved in the scandal. In December 2023, the

company accepted a 2 trillion-yen takeover bid from a private equity firm. Therefore, the company's shares were delisted from the Tokyo Stock Exchange.

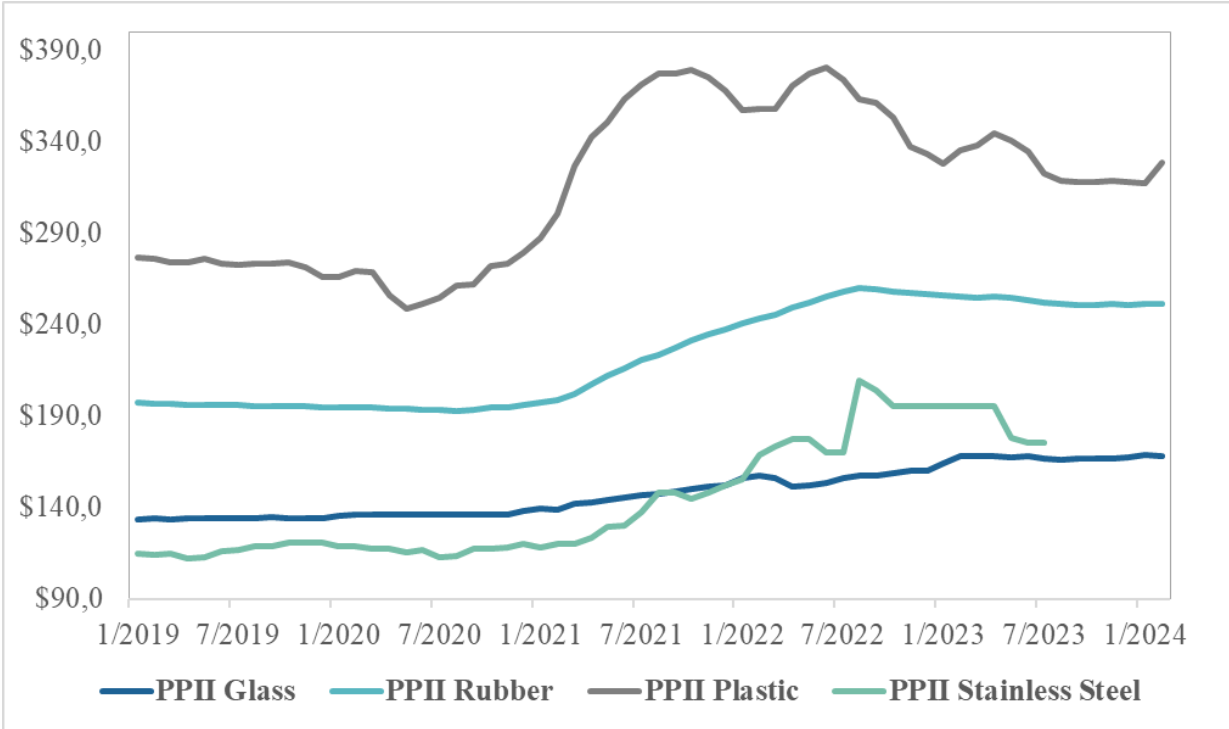
Horiba

Horiba is a Japanese manufacturer of precision instruments serving the medical, semiconductor, and automotive industries. Horiba produces a wide range of instruments to support medical diagnostics in hematology, clinical chemistry, and veterinary medicine.

Appendix 12.11 – Historical US Inflation 2014-2023

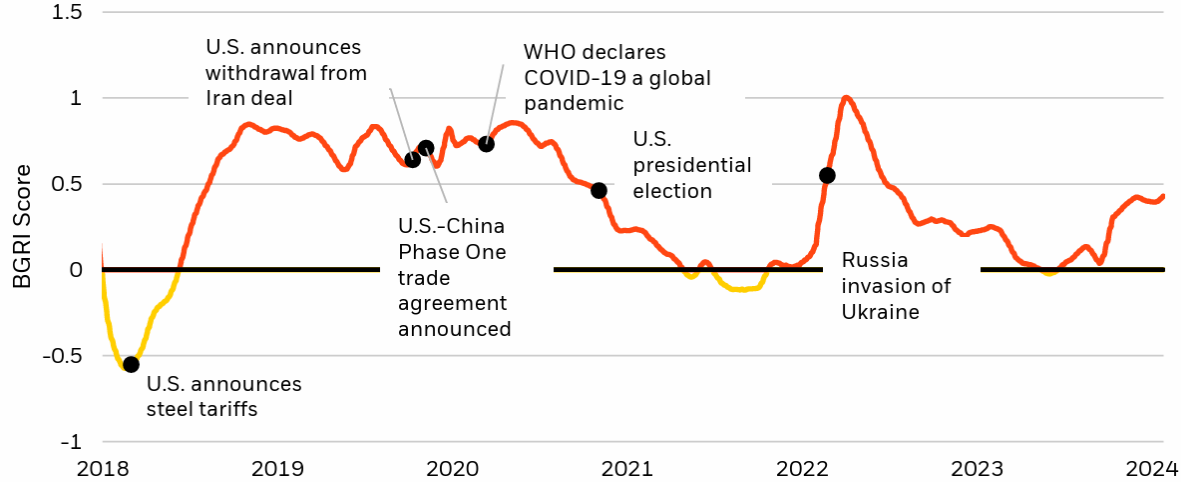


Appendix 12.12 – Historical Commodities Index Price Inflation 2019-2024



Appendix 12.13 – BlackRock Geopolitical Risk Indicator

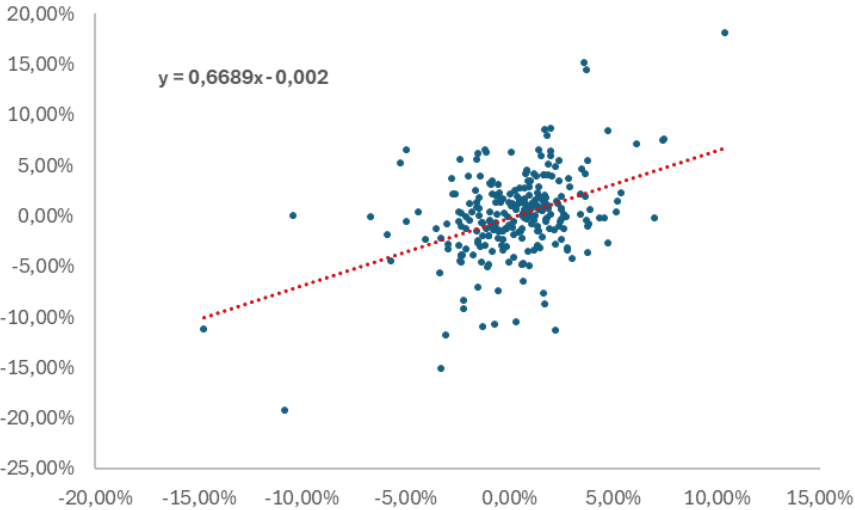
BlackRock Geopolitical Risk Indicator



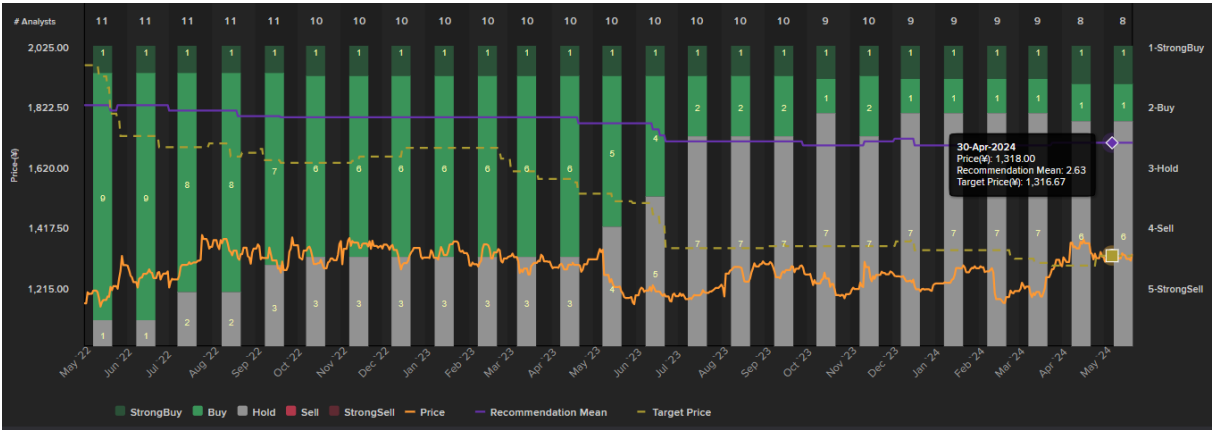
Appendix 12.14 – Casio Historical Beta

Casio’s historical Beta is obtained by regressing the firm’s returns against the returns of the market. As introduced in the Literature Review, a value-weighted and well-diversified index is usually taken as market proxy. As such, the ‘Nikkei 225’, a widely known price-weighted Japanese index that includes Casio among its components, does not represent the optimal choice. The choice falls on regressing Casio’s past 5 years weekly returns against the returns of the MSCI World Index, converted from USD to JPY.

The regression Beta of 0.67 is then adjusted using Blume’s formula to obtain a final estimate equal to 0.78. However, this result is not employed in the valuation of Casio since the MSCI Index is originally traded in USD while Casio is originally traded in JPY. Therefore, comparing USD returns with JPY returns or converted JPY returns with JPY returns implies that returns are affected by currency exchange fluctuations, altering the inputs of the regression.



Appendix 12.15 – Refinitiv Aggregate Investors Recommendation



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Additional Resources

- Casio Annual Report 2023, <https://world.casio.com/ir/library/annual/>
- Country Default Spread and Risk Premiums, https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/ctryprem.html
- Japan's GIGA School Program equips students for digital society, The Japan Times (2021), <https://www.japantimes.co.jp/2021/03/22/special-supplements/japans-giga-school-program-equips-students-digital-society/>
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- Libry Official Website, <https://about.libry.jp/>