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Discounted Cash Flow Valuation of WEG

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Final report of the subject DAS5511 (Course Final Project) as a requirement for the degree of the Bachelor's in Control and Automation Engineering of the Federal University of Santa Catarina.
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Discounted Cash Flow Valuation of WEG

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This work is dedicated to my family and to my younger self that got lost in the way.

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“On the plains of hesitation lie the blackened bones of countless millions who,
at the dawn of victory, lay down to rest
and, in resting, died“
(Stevenson II, date unknown)

DISCLAIMER

Florianópolis, February 29th, 2024.

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Kevin Zarzur
Seven Pounds Asset Management

ABSTRACT

This report exhibits conducts a detailed analysis of WEG S.A., a leading entity in the global electric-electronic equipment industry, using the discounted cash flow model to evaluate its fair market value. WEG operates with manufacturing facilities in 12 countries and has a commercial presence in over 135 countries, indicating a broad operational scope and considerable influence in various sectors such as infrastructure, steel, pulp and paper, oil and gas, mining, among others. The firm employs over 36,900 individuals globally, demonstrating its commitment to innovation and the development of solutions in line with current trends in energy efficiency, renewable energy, and electric mobility. This study thoroughly examines WEG's business model, competitive environment, and industry dynamics, employing analyses to forecast future cash flows based on historic performance and establish a precise valuation. The fair value found discounting future cash flows to present value using the DCF model was 42,75 R$, presenting a 15,9% of upside to the closing price found in February 27th of 2024.

DCF; Valuation; WEG S.A.; Multiples;

RESUMO

Esta trabalho apresenta uma análise detalhada da WEG S.A., uma entidade líder na indústria global de equipamentos elétrico-eletrônicos, utilizando o modelo de fluxo de caixa descontado para avaliar seu valor de mercado justo. A WEG opera com instalações de fabricação em 12 países e tem uma presença comercial em mais de 135 países, indicando um amplo escopo operacional e considerável influência em vários setores, como infraestrutura, aço, papel e celulose, óleo e gás, mineração, entre outros. A empresa emprega mais de 36.900 indivíduos globalmente, demonstrando seu compromisso com a inovação e o desenvolvimento de soluções alinhadas às tendências atuais em eficiência energética, energia renovável e mobilidade elétrica. Este estudo examina minuciosamente o modelo de negócios da WEG, o ambiente competitivo e a dinâmica da indústria, empregando análises para prever fluxos de caixa futuros baseados no desempenho histórico e estabelecer uma avaliação precisa. O valor justo encontrado, descontando os fluxos de caixa futuros para o valor presente usando o modelo DCF, foi de R$ 42,75, apresentando um potencial de valorização de 15,9% em relação ao preço de fechamento encontrado em 27 de fevereiro de 2024.

Valuation; Fluxo de Caixa Descontado; Múltiplos

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1 INTRODUCTION

The main goal of this workproject is to figure out the economic value of WEG S.A. by using the Discounted Cash Flow (DCF) - as described by (DAMODARAN, 2012) - by approach. This study intended to accurately assess WEG S.A.'s worth by forecasting its future cash flows and discounting them to their present value, which will help in understanding its financial performance and potential for growth. By doing so, the reportt aims to shed light on WEG S.A.'s position in the market and its financial health.

1.1 MOTIVATION

In the current times of global industrial competitiveness, the characteristics of innovation, efficiency, and strategic market navigation are very important. This is particularly true for entities within sectors traditionally not associated with emerging markets, such as the technology-intensive fields. WEG S.A., originating from Brazil, a nation not conventionally recognized for its technological advancements, represents a compelling case of industrial triumph and growth in such a context.

This study sought to explore the remarkable ascension of WEG S.A. within the global tech industry, emphasizing its strategy and innovation-driven approach that have facilitated its success amidst the challenges of operating within Brazil's economic and infrastructural parameters. Brazil's market, characterized by its volatility and distinctive challenges, provides a backdrop against which WEG's achievements are not merely notable but exemplary for transforming adversity into opportunity.

The narrative of WEG S.A.'s growth over recent years is intricately linked to its commitment to research and development and an aggressive strategy for international expansion. These elements have been pivotal in positioning WEG as a leader in electric and automation technologies, showcasing the potential for companies to achieve global prominence from atypical technological hubs.

Moreover, this project specifically aims to apply the Discounted Cash Flow (DCF) methodology to determine the intrinsic value of WEG S.A., thereby providing a quantitative analysis of its economic worth. This approach, central to the financial assessment within this thesis, allows for an evaluation of WEG's future cash flow potentials, discounting them back to their present value. This financial analysis seeks to underscore the company's valuation.

In doing so, the thesis endeavors to contribute to the body of knowledge on corporate finance and valuation of a company very popular within the Brazilian stock market, which has grown a surprising amount in recent years.

1.2 OBJECTIVES

1.2.1 General Objectives

The primary goal of this thesis is to evaluate the economic value of WEG S.A. through the Discounted Cash Flow (DCF) method and multiples.

1.2.2 Specific Objectives

- To detail the sector's dynamics and outline the historical development of WEG S.A., emphasizing its growth drivers.
- To conduct an analysis of WEG S.A.'s financial, operational and governmental characteristics, highlighting what illustrates the company's competitive advantages.
- To apply the Discounted Cash Flow method to derive the economic value of WEG S.A., incorporating a projection of future cash flows based on defined assumptions.
- To compare the valuation results obtained from the DCF method with those from the Multiples Valuation approach, aiming to validate the DCF findings and assess their reliability in reflecting the company's true market value.

1.3 DOCUMENT STRUCTURE

The structure of this thesis is organized into 8 chapters, designed to address the valuation of WEG S.A. through the Discounted Cash Flow (DCF) method and comparative market multiples valuation.

Chapter 1 - Introduction: This opening chapter sets the thesis, detailing the motivation behind the study, the goal to evaluate WEG S.A.'s economic value, and the specific objectives intended to guide the research process.

Chapter 2 - The Company: Seven Pounds Asset Management: This chapter provides an overview of Seven Pounds Asset Management the company where this thesis was done.

Chapter 3 - Theoretical Background: Here, the thesis goes into the foundational concepts under company valuation, covering topics such as financial statements analysis, the principles of the DCF method, and an overview of relative valuation techniques. This chapter aims to establish a theoretical base for the applied valuation methods.

Chapter 4 - Methodology: This section outlines the methodological framework adopted in the thesis, detailing the classification and procedural steps for conducting

the valuation analysis. It describes the approach for data collection, the criteria for model assumptions, and the techniques for financial projection.

Chapter 5 - WEG S.A. Overview: Focused on providing a comprehensive understanding of WEG S.A., this chapter covers the company's history, corporate structure, board and executive directors, and market segments. It also examines WEG's competitive landscape, including an analysis of peers, clients, and main suppliers.

Chapter 6 - Sector Analysis: Dedicated to exploring the industry in which WEG operates, this chapter identifies the growth drivers across WEG's key market segments, including industrial electro-electronic equipment and energy generation. It also assesses WEG's market share and position within these sectors.

Chapter 7 - Valuation: The core of the thesis, this chapter applies the DCF method to WEG S.A., detailing model assumptions, revenue, costs, and expenses projection, CAPEX, depreciation, working capital projection, and cost of capital. Additionally, it calculates WEG's enterprise and equity values, culminating in a comparative analysis through multiples valuation.

Chapter 8 - Conclusion: Concluding the thesis, this chapter summarizes the key findings and recommendations for future research. It reflects on the insights gained from the valuation of WEG S.A.

2 THE COMPANY: SEVEN POUNDS ASSET MANAGEMENT

Seven Pounds Asset Management, established to oversee private fortunes primarily generated from real estate ventures, specializes in managing investments with a significant focus on Brazilian credit products. The firm adopts a fundamentalist approach in its operations, meticulously analyzing credit markets to identify robust investment opportunities that promise sustainable growth and returns.

Figure 1 – Companies' Logo

(source: internal archives)

Central to the firm's strategy is a concentrated focus on credit products within the Brazilian market. This emphasis is grounded in a thorough understanding of the local financial landscape and an appreciation for the nuanced dynamics of credit investments. The firm's investment decisions are informed by a fundamentalist approach, which entails a detailed examination of economic indicators, market trends, and financial statements to assess the intrinsic value of potential investments.

The primary objective of Seven Pounds Asset Management is to safeguard and augment its assets under management through strategic investments in the Brazilian credit market and beyond. By adhering to a fundamentalist investment approach, the firm seeks to achieve optimal asset performance, characterized by steady growth and minimal exposure to undue risk. The scope of the firm's activities, while focused on credit products, encompasses a broad spectrum of investment opportunities, reflecting a flexible yet principled approach to asset management.

This work is particularly timely for Seven Pounds Asset Management as the firm anticipates shifts in the financial landscape, notably the projected decrease in interest rates and the consequent diminishing returns on credit products. In preparation for these market evolutions, the company is proactively broadening its investment horizon to include stocks, diversifying its portfolio beyond its traditional focus on credit products.

This strategic pivot necessitates equipping its workforce with the requisite skills and knowledge to navigate the complexities of stock investments effectively. By doing so, Seven Pounds Asset Management aims to maintain its competitive edge and continue delivering robust returns for the investor's estate, adapting to the changing dynamics of the financial markets.

3 THEORETICAL BACKGROUND

3.1 FINANCIAL STATEMENTS

Financial statements are pivotal documents that encapsulate a company's financial health and economic performance. The amendment of Law No. 11.638/07 to the original Corporations Law No. 6404/76 mandates that publicly traded companies must disclose the following reports: the Balance Sheet, Income Statement, Cash Flow Statement, and Statement of Value Added. Among these, the first three documents are crucial for the theoretical foundation of this work and will be further elaborated upon.

The detailed analysis of a company's financial structure is essential for accurately assessing its valuation. The three financial statements form the cornerstone of valuation sciences, providing a comprehensive overview of a company's financial status, operational results, and cash management, which are indispensable for constructing a robust valuation.

3.1.1 Balance Sheet

The Balance Sheet is a fundamental financial statement that delineates a company's financial position at a specific point in time, detailing assets, liabilities, and shareholders' equity. It's designed to provide a snapshot of what the company owns and owes, as well as the amount invested by shareholders. As highlighted by (NETO, 2015), the Balance Sheet is inherently static, offering a momentary view that captures the financial standing of a company at the close of a fiscal period.

Assets, classified into current and non-current, represent the company's owned resources expected to bring future economic benefits, a concept that is central to understanding a company's capacity for generating value (NETO, 2015). Liabilities, similarly divided into short and long-term, account for the company's financial obligations. The equity portion represents the residual interest in the assets of the company after deducting liabilities, embodying the value attributable to shareholders.

(DAMODARAN, 2012) emphasizes the Balance Sheet's role in providing a precise account of a firm's financial health, including the structure of its capital and the valuation of its assets. This thorough understanding is pivotal for assessing the company's stability and potential for future growth, making the Balance Sheet an indispensable tool for investors and financial analysts alike.

By examining the Balance Sheet in light of these principles, stakeholders can glean insights into the company's operational effectiveness, financial robustness, and strategic positioning within the market. This detailed examination forms the bedrock for more advanced financial analysis and valuation efforts, underscoring the Balance Sheet's critical role in the broader context of financial assessment and corporate valua-

tion.

3.1.2 Income Statement

The Income Statement, as outlined by (NETO, 2015), serves as a comprehensive record of a company's financial activities over a fiscal year, detailing revenues, expenses, and the resulting net income. It encapsulates the core financial operations, offering insight into the profitability derived from the company's revenue-generating activities minus incurred costs and expenses. This financial document adheres to the accrual accounting principle, ensuring that revenues and expenses are accounted for in the period they occur, regardless of actual cash flow.

(DAMODARAN, 2012) further emphasizes the importance of the Income Statement in providing a dynamic overview of a company's financial performance over time, contrasting with the Balance Sheet's static snapshot. Unlike the Balance Sheet, which presents a single moment's financial position, the Income Statement unfolds the financial narrative across a specified timeframe, typically disclosed on a quarterly or annual basis. This report crucially employs the accrual basis of accounting, capturing transactions at the moment they take effect, irrespective of the physical exchange of cash.

In synthesizing these perspectives, the Income Statement emerges as a vital tool in financial analysis, offering a lens through which to assess a company's operational efficiency, cost management, and overall profitability. By recording financial transactions under the accrual basis, it provides an understanding of a company's fiscal health, guiding strategic decision-making and investment considerations.

3.1.3 Cash Flow Statement

(DAMODARAN, 2012) emphasizes the importance of the Cash Flow Statement (CFS) in assessing a company's financial health, particularly its ability to fulfill obligations to creditors and shareholders, and its capacity for generating future cash flows from present operations. (NETO, 2015) points out that the CFS offers invaluable insights into a company's liquidity and solvency status by highlighting cash movements through operating, investing, and financing activities as mandated by Law No. 11.638/07. This detailed breakdown is essential for understanding the dynamics of cash generation and expenditure within a company, providing a clear picture of its operational efficiency and financial stability.

On the other hand, (DAMODARAN, 2012) delineates the Cash Flow Statement as a fundamental accounting document that records the cash inflows and outflows from a company's operational activities, investments, and financial dealings. According to Damodaran, the significance of the CFS lies in its ability to document the actual movement of cash within a specific period, adhering strictly to cash basis accounting. This

approach ensures that only real cash transactions are captured, offering a transparent view of how cash is sourced and utilized across different facets of the company's operations. The classification into operational, investment, and financing activities, as outlined by the Law 11.638/2007, allows stakeholders to dissect the company's financial maneuvers, enhancing the understanding of its fiscal management and strategic planning.

In synthesizing the perspectives of both (NETO, 2015) and (DAMODARAN, 2012), the Cash Flow Statement emerges as an important tool for gauging a company's financial health, operational liquidity, and strategic financial management. Its comprehensive coverage of cash transactions across various business activities provides a solid foundation for analyzing a company's ability to sustain and grow its operations in the long term.

3.2 VALUATION METHODS

In the context of financial analysis, valuation methods are employed to estimate the market value of a company, a component in decision-making processes across economic, accounting, and financial domains. The foundational premise of corporate valuation is to derive a fair market value that accurately reflects expected returns based on future firm performance projections, ensuring alignment with the actual business context (Neto, 2015).

Valuation, however, is not an exact science. It involves estimations and predictions that incorporate errors and uncertainties, making the valuation process subject to the evaluators' biases and interpretations (PÓVOA, 2020). The valuation complexity is further influenced by the company's sector, with technology startups, for instance, presenting more uncertainties compared to firms in more established markets (Neto, 2015).

(NETO, 2015) and (DAMODARAN, 2012) acknowledge the existence of numerous valuation models, categorizing them broadly into two approaches: intrinsic and relative. The intrinsic valuation is predicated on the anticipated economic benefits, the risk associated with these benefits, and the investors' required return rates. This approach suggests that an asset's value can be determined by its expected cash flows and the level of uncertainty associated with these flows. Conversely, the relative valuation method estimates an asset's value by comparing it to similar assets, using common variables such as earnings, cash flow, or book value.

The accuracy of valuation outcomes largely depends on the application of appropriate techniques and the minimization of errors. A significant portion of the valuation process involves providing the valuation model with high-quality information (PÓVOA, 2020). This approach to valuation underscores the importance of combining analytical rigor with a comprehensive understanding of market dynamics and the uncertainties

inherent in financial predictions.

3.2.1 Discounted Cash Flow Method

The Discounted Cash Flow (DCF) valuation method is essential for evaluating a company's value by forecasting its future cash flows and bringing those values to the present using a discount rate. (PÓVOA, 2020) points out that a company's worth is the total of all cash it will generate in the future, discounted by a rate that reflects the investors' required return.

This method is highlighted by (PÓVOA, 2020) and (NETO, 2014) as a preferred choice for thorough evaluations due to its detail and accuracy. It's based on the idea that the value of an asset comes from the present value of expected future cash flows, discounted by a rate that accounts for the risk of those cash flows.

(PÓVOA, 2020) describes the DCF method's main goal as making predictions about a company's future cash flow generation and discounting those future amounts to today's values using a chosen discount rate. This involves setting a specific time frame for these cash flow projections and then applying a general growth rate and a discount rate to estimate the company's value over time.

According to (PÓVOA, 2020), the DCF method works well for companies with stable profits and those unlikely to see significant operational changes, allowing for straightforward application without needing many adjustments. This method is versatile, helping to accurately assess the value of companies in diverse conditions by focusing on future financial performance.

Therefore, the valuation of a company using the Discounted Cash Flow approach can be represented in as in the following equation:

$$NPV = \sum_{t=1}^{N} \frac{CF_t}{(1+r)^t} + \frac{CF_n(1+g_p)}{[(r_p - g_p)(1+r)]^n}, \tag{1}$$

where NPV is the present value of the cash flows (Net Present Value), t is the period, n is the perpetuity period, CF_t is the cash flow in the period t, CF_n is the cash flow in the perpetuity period n and r is the discount rate.

3.2.1.1 Free Cash Flow to Firm and to Equity

In financial analysis, understanding a company's cash flows can be approached through two perspectives: Free Cash Flow to Firm (FCFF) and Free Cash Flow to Equity (FCFE), as indicated by (SERRA R. G.; WICKERT, 2019). FCFF offers a view of cash available to both shareholders and creditors, reflecting the company's overall value generation capability. This approach is noted for its broader assessment of financial health and its reduced sensitivity to short-term financial policies like dividend distribution.

Conversely, FCFE focuses on the cash flow available to shareholders after debt obligations, highlighting the direct return potential to equity investors (PÓVOA, 2020). While FCFF is discounted at the Weighted Average Cost of Capital (WACC) to account for the cost of both equity and debt, FCFE is specifically discounted at the cost of equity, reflecting the returns expected by equity holders.

The FCFF and FCFE equations are as follows:

$$\begin{aligned} &\textit{FCFF = NET INCOME + NON CASH CHARGES +} \\ &\textit{INTEREST EXPENSE x (1 - TAX RATE) -} \\ &\textit{INVESMENT IN WORKING CAPITAL - CAPEX} \end{aligned} \quad , \tag{2}$$

where *FCFF* stands for free cash flow to firm, *NET INCOME* as the firm's profit or net income, *NON CASH CHARGES* as the expenses reported on the income statement that do not involve actual cash flow, such as depreciation and amortization, *INTEREST EXPENSE* as the cost incurred by a company for borrowed funds, *TAX RATE* as the percentage at which a company is taxed on its earnings, *INVESMENT IN WORKING CAPITAl* as the changes in current assets and liabilities, indicating the cash used or generated in a company's operational activities and *CAPEX* as the funds used by a company to acquire, upgrade, and maintain physical assets such as property, plant, and equipment.

$$\textit{FCFE = FCFF + NET BORROWED DEBT - INTEREST EXPENSE x (1 - TAX RATE)}. \tag{3}$$

In which *FCFE* stands for free cash flow to equity, *FCFF* for free cash flow to firm, *NET BORROWED DEBT* to the net increase or decrease the company's debt within a reporting period, capturing the difference between any new debt taken on and any existing debt repaid and *INTERESET EXPENSE* and *TAX RATE* stand to the same as described previously.

These models serve distinct valuation purposes: FCFF for a comprehensive valuation including all capital sources and FCFE for an equity-centric valuation. The choice between FCFF and FCFE depends on the valuation's focus, with each providing unique insights into the company's financial standing and future cash flow potential.

3.2.1.2 Discount Rate

The discount rate is a crucial component in the valuation of a company, incorporating expected real returns over time, inflation estimates, and a premium for the uncertainty inherent in cash flows, as (DAMODARAN, 2012) elaborates. Formulating assumptions about the discount rate is as vital as projecting the cash flows themselves,

making Discounted Cash Flow (DCF) valuation highly sensitive to the analyst's perspective, according to (PÓVOA, 2020).

Capital cost, which is segmented into the cost for creditors and shareholders, represents the minimum return rate a company must achieve to create value. (SERRA R. G.; WICKERT, 2019) note that, in equilibrium for companies with capital market access, shareholders' cost of capital is higher than that of creditors. The overall financing cost of a company is a weighted average of the capital costs from shareholders and creditors, known as the WACC (DAMODARAN, 2012).

3.2.1.3 Cost of Equity

The Cost of Equity (*Ke*) represents the expected return on the equity investments made in a company, essentially reflecting shareholders' expectations. Economically, it's viewed as the minimum required return that justifies an investment, equating to the opportunity cost that covers a minimum return on the capital employed in the operation (PÓVOA, 2020). The Capital Asset Pricing Model (CAPM) serves as a widely recognized and utilized framework in finance for estimating *Ke*. This model calculates the cost of equity by considering the risk-free asset return plus a market risk premium, adjusted for the specific risk of the company or the industry sector it operates in.

There isn't a definitive way to calculate the exact cost of equity as it is influenced by numerous variables and individual shareholder perceptions of the minimum required return. As such, several models have been developed to estimate the cost of equity, among which CAPM stands out as the most popular and applied method. CAPM provides a theoretical basis for understanding and estimating the cost of equity, incorporating considerations of market volatility and the specific risks associated with the company. The CAPM formula is described as follows:

$$Ke = Rf + \beta(Rm - Rf). \tag{4}$$

With *Ke* as cost of equity, *Rf* as risk free rate, *Rm* and β as the representation of the securitiy's volatility relative to market's volatility.

3.2.1.4 Cost of Debt

The cost of debt, or the cost of borrowing, refers to the return that lenders require from a company to provide it with capital. This cost encompasses all sources of credit to the company, including loans and financings. The risk level of the company directly influences this cost, affected by factors such as the industry sector, cash flow variability, debt level, and financial performance history.

Risk spread is associated with the company's default risk and can be determined through credit rating agencies like Fitch, Moody's, and Standard & Poor's, which assign

credit ratings to companies. However, a simpler method - and the one used in this thesis - to calculate the cost of debt is by using the weighted average of the interest rates applied to the company's current debt. This calculation considers the size, term, and cost of existing debts to determine an average rate that represents the company's cost of borrowing.

The debt cost, as detailed by (NETO, 2014), is the expense incurred by a company when it acquires funds through debt to finance activities such as new projects, expansion, inventory, and working capital enhancement. It is an explicit capital cost, calculated by the discount rate that equates cash inflows with outflows at a single point in time. The debt cost is essentially the risk-free rate plus a risk premium, with the risk-free rate being the return on assets considered to have minimal risk, often benchmarked against U.S. Treasury securities - in Brazil the 10-year treasury bond is a proxi. The risk premium compensates for the possibility of credit default or interest rate renegotiations.

$$Ki = Rf + COMPANY'S\ RISK\ SPREAD \tag{5}$$

with *Ki* as cost of debt, *Rf* as the risk-free rate and the company's risk spread. Thus, considering both the risk-free rate and the additional risk premium required by lenders, to gauge the true expense of borrowing for a company.

3.2.1.5 WACC

The Weighted Average Cost of Capital (WACC) represents the minimum return required by all capital providers—both shareholders and creditors—equating to the expected return by investors. As described by (NETO, 2014), WACC is typically used as the discount rate in the cash flow valuation process for a firm, as it encompasses both the cost of equity and the cost of debt in their respective proportions.

WACC serves as a blend of the cost of equity and debt within a company's financial structure. It's crucial for calculating the present value (NPV) of future cash flows, considering the long-term capital costs the company will incur.

Capital structure refers to the mix of a company's short-term and long-term financing, consisting of equity (shareholders' equity) and debt (liabilities). Managers have various financing options, including issuing preferred stocks with floating dividend rates or engaging in financial instruments like leases, swaps, and futures contracts, as mentioned by (**ross**). The discount rate's risk is gauged by the cost of equity for equity risk, while total company risk is indicated by the total capital cost, which is the weighted average of equity and debt costs, with weights reflecting the proportional use of each financing source.

Thus, the cash flow to the firm is discounted at the WACC, which factors in the costs associated with both shareholders' and creditors' capital.

$$WACC = Ke\frac{E}{(E+D)} + Ki\frac{D(1-Tr)}{(E+D)}. \quad (6)$$

with *Ke* as cost of equity, *Ki* as cost of debt, *E* as equity, *D* as debt and *Tr* as tax rate. The term (1 – *Tr*) acknowledges the tax shield gained through debt financing, allowing interest payments to be reported as expenses. This reduces income tax payments, thereby increasing cash flow.

3.2.2 Relative Valuation

Relative Valuation, also known as valuation by multiples, is a method that assesses an asset's value based on the market prices of similar assets. This approach, highlighted by (NETO, 2014), aims to uncover the current value of assets by comparing them with those of companies deemed comparable. It's recognized for its simplicity and speed compared to the Discounted Cash Flow (DCF) method.

For effective relative valuation, according to (NETO, 2014) and (DAMODARAN, 2012), two sets of information are needed: the value of a similar company and a standardized metric for comparison. Damodaran outlines three critical steps for conducting a relative valuation: identifying comparable assets, standardizing market prices to a common variable, and adjusting for differences between the assets when comparing the standardized values. A key challenge in this method is finding similar companies that can serve as benchmarks. Moreover, this approach assumes the market's perception is correct when comparing multiples of publicly traded companies, making it susceptible to systematic errors during irrational market phases, whether undervaluing or overvaluing certain asset classes.

Relative valuation thus emerges as a useful methodology for investors looking to spot investment opportunities by comparing financial indicators, achieving results more effortlessly than through DCF analysis. However, it's important to be mindful of market irrationalities since market prices often do not reflect the intrinsic value of the assets.

In summary, relative valuation evaluates assets based on the pricing of market comparables, requiring the standardization of prices into multiples of earnings, book value, or revenue, and using companies with similar characteristics in terms of risk, growth potential, and cash flows as benchmarks (DAMODARAN, 2012). While DCF valuation focuses on discounted future cash flows, relative valuation predominately relies on current market valuations, making it a prevalent approach in practice despite the emphasis on DCF in academic discussions (DAMODARAN, 2012). This method's reliance on similar company analyses and comparison across various financial metrics like net income, debt, or equity values underscores its practical application in asset valuation. The main multiples used in this valuation are:

- **Price to Earnings =** $\frac{PRICE}{EARNINGS\ PER\ SHARE} = \frac{P}{Eps}$ where *PRICE* and *P* stand for

price of the stock and *EARNINGS PER SHARE* and *Eps* stand for earnings (net income) per share.

- **Enterprise Value to EBITDA =** $\frac{EV}{EBITDA}$ in which *Enterprise Value* and *EV* are the market cap. added to total debt, minority interest, and preferred shares, and then subtracted from cash and cash equivalents and *EBITDA* is earnings before interest, taxes, depreciation, and amortization.
- **Price to Sales =** $\frac{PRICE}{SALES\ PER\ SHARE}$ where *PRICE* has the same meaning as discribed previously and *SALES PER SHARE* is the company's total revenue by its number of outstanding shares.
- **Price to Book Value =** $\frac{PRICE}{BOOK\ VALUE\ PER\ SHARE} = \frac{P}{BV}$ where *PRICE* and *P* stand for the same as above and *BOOK VALUE PER SHARE* is the net asset value of a company calculated as total assets minus intangible assets (patents, copyrights) and liabilities per share.
- **Enterprise Value to Revenue =** $\frac{EV}{REVENUE}$ finally, *EV* stands for the same as previously mentioned and *REVENUE* stands for revenue.

4 METHODOLOGY

4.1 CLASSIFICATION

This study adopts a case study methodology, utilizing both qualitative and quantitative research approaches to implement the Discounted Cash Flow analysis. This dual-method approach is important for the DCF of WEG S.A., the focus of this study, by delving into its financial structures and market operations.

The exploration aims to provide insights into the financial valuation and market positioning of WEG S.A., demonstrating the application of theoretical concepts in a real-world context.

4.2 METHODOLOGICAL PROCEDURE

This work integrates theoretical concepts with an analysis of the financial statements and financial indicators of the company, as disclosed on the company's Investor Relations website. A sector analysis will also be conducted to understand the company's context. The asset pricing methods discussed in the theoretical framework, with a focus on the Discounted Cash Flow model, will be applied to derive the valuation.

The research was initiated with a literature review on business valuation methods, selecting the Discounted Cash Flow model due to its widespread use. A detailed analysis of both the company and its industry was conducted to gain insights into its business model. Following this, the Discounted Cash Flow model was employed to determine WEG's economic value, illustrating a comprehensive approach that encompasses both theoretical foundations and practical application to achieve a precise valuation. Summarizing, the steps done were the following:

1. **Literature Review**
2. **Company, Sector and Peers Analysis**
3. **Data Collection**
4. **Model Creation and Implementation**
5. **Sanity Check and Multiple Comparation**
6. **Result Analysis**

5 WEG S.A. OVERVIEW

WEG S.A. is a multinational Brazilian corporation engaged in the manufacture of electrical machinery, automation systems, and paints, serving a wide range of sectors including infrastructure, pulp and paper, steel, oil and gas, and mining. Recognized for its commitment to innovation, WEG focuses on developing products that address key trends such as energy efficiency, renewable energy, and electric mobility. The company has established a substantial international presence, with manufacturing operations in 15 countries and commercial activities in over 135 countries.

Established in 1961 and headquartered in Jaraguá do Sul, Santa Catarina, Brazil, WEG has grown to become a significant player in the capital goods industry, emphasizing the production and sale of electrical machines, automation systems, and paint solutions. As of the latest reports, WEG employs approximately 39.137 individuals globally and generated revenues of BRL 29,9 billion in 2022, with a significant portion of its sales derived from international markets.

This chapter aims to provide an analytical overview of WEG S.A., including its history, organizational structure, executive leadership, segmentation in the market, competitive landscape, client base, and supply chain, thereby offering a rounded perspective on the company's operational and strategic positioning within the global market.

5.1 COMPANY HISTORY

The history of WEG S.A. is a testament to the company's growth from a local enterprise to a global leader in the electrical machinery sector. Initially named Eletromotores Jaraguá Ltda, WEG was born from the entrepreneurial vision of Werner Ricardo Voigt, Eggon João da Silva, and Geraldo Werninghaus, with the company name derived from the initials of their surnames. This foundation period set the stage for what would become a multinational corporation recognized for its innovation in electrical machinery, automation, and paints across various industries.

In the early years, WEG addressed the challenge of limited qualified labor and the need for inputs by establishing the CentroWEG, a vocational school teaching young people the company's production processes, highlighting its commitment to education and workforce development from the outset. The 1970s marked a pivotal phase of national expansion and initial international steps, including establishing a second manufacturing site, initiating stock market trading, and starting to export motors to several Latin American countries. This decade solidified WEG's brand in the electrical equipment segment.

The 1980s saw further growth and diversification with the creation of specialized units for large electric machines, electro-electronic components, and transformers, along with the entry into industrial paints through WEG Química. The establishment

of the Automation unit in 1986 showcased WEG's drive towards industrial automation solutions.

International expansion accelerated in the 1990s with the establishment of a distribution subsidiary in the United States and the acquisition of a company in Belgium, marking WEG as a significant Latin American manufacturer of electrical equipment. The new millennium brought further global reach with factories set up in Argentina, Mexico, Portugal, and China, among others, and acquisitions like the Voltran company in Mexico, expanding WEG's product portfolio beyond electric motors.

Recent years have seen WEG focus on industry 4.0 technologies, acquiring companies specializing in automation systems integration, MES solutions, IIoT, and artificial intelligence for industrial applications. The company's historical journey reflects a strategic blend of innovation, global expansion, and a diversified product range, positioning WEG as a competitive force in the global market. (WEG, 2024a).

5.2 CAPITAL MARKETS AND SOCIETAL STRUCTURE

WEG S.A. has marked its presence strongly in both national and international stock markets. In June 2007, the company joined the Novo Mercado segment of the B3 stock exchange in Brazil, a segment known for its stringent corporate governance standards, where its shares are traded under the ticker "WEGE3." Additionally, since 2010, WEG has operated a Level I American Depositary Receipts (ADRs) program in the United States, trading on the over-the-counter (OTC) market under the code "WEGZY." This strategic move has expanded the company's investor base and increased the liquidity and visibility of its shares globally.

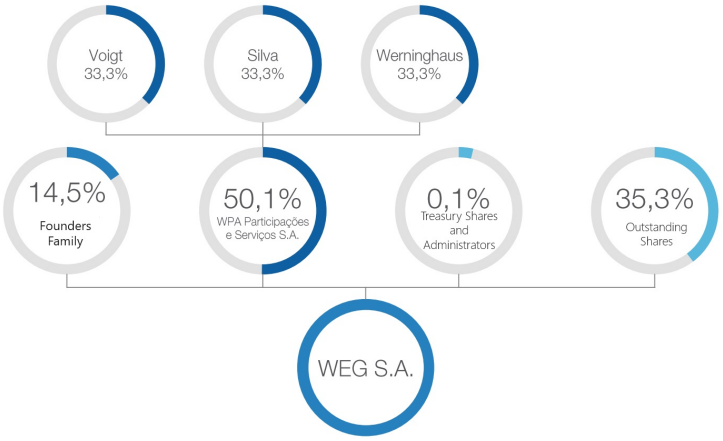
The shareholder structure of WEG is notably characterized by the control held by WPA Participações e Serviços S.A., which owns 50.1% of the company, effectively in the hands of the founding families. Another 14.5% is directly owned by members of the founding Silva, Werninghaus, and Voigt families, while 35.3% of the shares are freely traded on the stock exchange, known as free float.

Throughout the years, WEG's shares have been included in several prestigious indices. Since 2012, the shares were included in the MSCI stock index family, which is widely used as a performance benchmark by institutional investors globally. By 2013, WEGE3 was also included in Brazil's IBrX index and has since been part of the B3 Sustainability Index (ISE), highlighting its commitment to corporate sustainability. Moreover, WEG has been included in the MSCI Global Sustainability Index Series since 2014, underscoring its leadership in environmental, social, and governance (ESG) practices. By January 2016, WEGE3 became a constituent of the Ibovespa, the most significant stock market index in Brazil, reflecting its importance in the Brazilian market.

As of the end of 2022, WEG boasted approximately 365,000 shareholders, a daily trading volume of R$ 265 million, and a market value of R$ 162 billion as of

December 31, 2022, ranking it as the fifth-largest company on the Brazilian stock exchange by market value. This growth in shareholder numbers, from surpassing the 100,000 mark in 2019 to its current status, showcases WEG's substantial progress and the widespread recognition of its value among investors.

Figure 2 – Societal Structure



(WEG, 2024a)

5.3 BOARD AND EXECUTIVE DIRECTORS

The management of WEG S.A. is overseen by its Board of Directors and Executive Directors, each playing a critical role in the company's governance and operational strategy. The Executive Board, tasked with the day-to-day administration of the company, consists of 13 members serving a term of up to two years, with the possibility of reelection. Harry Schmelzer Jr. serves as the CEO, having joined WEG in 1981 as an engineering intern. With a background in electrical engineering from Faculdade de Engenharia Joinville and an MBA in business administration, Schmelzer's professional journey at WEG culminated in his appointment as CEO in 2008. The Executive Board also includes André Luís Rodrigues as the Chief Administrative and Financial Officer, among eleven other directors contributing to WEG's management. The table below describes all WEG's excutive directors.

The Board of Directors, responsible for setting corporate policies and overseeing the election and administration of Executive Directors, is elected by the general assembly for a two-year term. It comprises seven members, including two independents, reelected in April 2020. As seen in Table 2, Décio da Silva presides over the board, bringing his experience as a mechanical engineer and business administrator to the role. Joining WEG in 1979, Silva has held various positions before becoming the chairman of the board in 2008.

Table 1 – Executive Directors

Name	**Position**
Harry Schmelzer Jr.	CEO
André Luís Rodrigues	CFO
André Menegueti Salgueiro	Investor Relations and Finance Director
Alberto Yoshikazu Kuba	WEG Industrial Motors Director
Carlos Diether Prinz	WEG Transmission and Distribution Director
Carlos José Bastos Grillo	WEG Digital & Systems Director
Daniel Marteleto Godinho	Sustentability and Institutional Relations Director
Eduardo de Nóbrega	WEG China Director
Elder Jurandir Stringari	International Director
João Paulo Gualberto da Silva	WEG Energy Director
Juliano Saldanha Vargas	Human Resources Director
Julio Cesar Ramires	WEG Comercial Motors and Appliance Director
Manfred Peter Johann	WEG Automation Director
Source: WEG S.A. IR, 2023	

Table 2 – Board

Name	**Position**	**Council**
Décio da Silva	Chairman of the Board	Management
Nildemar Secches	Vice-Chairman of the Board	Management
Dan Ioschpe	Member (Independent)	Management
Martin Werninghaus	Member	Management
Sérgio Luiz silva	Member	Management
Siegfried Kreutzfeld	Member	Management
Tânia Conte Cosentino	Member (Independent)	Management
Lucia Martins Casasanta	Effective Member	Fiscal
Patricia Valente Stierli	Effective Member	Fiscal
Vanderlei Dominguez da Rosa	Effective Member	Fiscal
Giuliano Barbato Wolf	Alternate Member	Fiscal
Paulo Roberto Franceschi	Alternate Member	Fiscal
Silvia Maura Rodrigues Pereira	Alternate Member	Fiscal
Dan Ioschpe	Coordenading Member	Audit
Douglas Conrado Stange	Member	Audit
Estela Maris Vieira de Souza	Member	Audit
Source: WEG S.A. IR, 2023		

WEG is currently undergoing a succession process, with Alberto Yoshikazu Kuba set to assume the role of CEO from Harry Schmelzer on April 1st. In addition, Schmelzer's nomination for one of the seats on the Board of Directors for the 2024/2025 biennium will be proposed, marking a significant transition in the company's leadership and strategic direction. This change reflects WEG's commitment to continuous growth and adaptation, ensuring strong governance and innovative leadership remain at the forefront of its operations.

5.4 MARKET SEGMENTS

As mentioned, WEG S.A. operates across four main business areas: Industrial Electro-Electronic Equipment, Energy Generation, Transmission and Distribution (GTD), Commercial and Appliance Motors, and Paints and Varnishes. The following sections will delve into each of these segments, exploring WEG's contributions and innovations within these fields. This segmentation allows WEG to leverage its technological expertise and market knowledge, addressing various industries needs and reinforcing its position as a leader in the global market for electrical machinery and equipment.

5.4.1 Industrial Electro-Electronic Equipment

The Industrial Electro-Electronic Equipment segment is an important part of WEG S.A.'s business. This segment encompasses a wide range of products, including low and high voltage electric motors, gear units, drives & controls, industrial automation equipment and services, solutions for electric mobility, industry 4.0 technologies, and maintenance services. These products find applications across virtually all industrial sectors, powering essential equipment such as compressors, pumps, and fans, thereby underlining WEG's pivotal role in various industries.

WEG's electric motors, known for their efficiency and reliability, are designed for general use as well as specific applications, catering to a broad spectrum of industrial needs. The company's venture into power trains for electric vehicles and an advanced line of charging stations highlights its commitment to sustainable and innovative mobility solutions. Additionally, WEG's drives and controls are engineered to optimize energy conversion and ensure the seamless operation of systems, while its reducers and gearmotors are crucial for applications requiring enhanced force and speed control.

The segment also includes a diverse array of electrical products such as circuit breakers, electrical panels, push buttons, signalers, and starting switches, designed to enhance safety and performance of various equipment. Custom-designed power centers cater to specific client needs, supporting the construction and infrastructure segment with electrical panels, industrial plugs, distribution boards, and residential switches and sockets. Furthermore, WEG's comprehensive energy storage systems and digital solutions facilitate connectivity between users, machinery, and systems, illustrating the company's forward-looking approach.

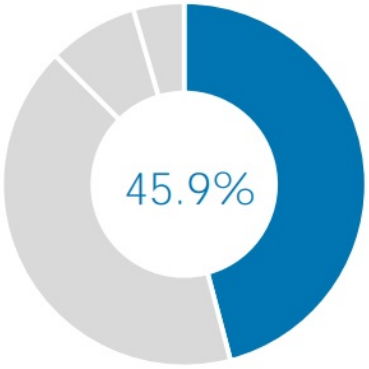
WEG's global presence and diversified customer base are particularly strong in this segment, with a significant portion of its sales generated from international markets. The company primarily serves Original Equipment Manufacturers (OEMs) of capital goods and large industrial enterprises undertaking capacity expansion projects, showcasing its ability to meet the demands of a wide-ranging clientele.

This segment highlights WEG's capacity for innovation and its pivotal role in

driving industrial advancements, showcasing a breadth of products and solutions that underscore its status as a leader in the electro-electronic equipment industry on a global scale. (WEG, 2024a).

Figure 3 – IEE Share of 2023 4Q Net Operating Revenue (NOR) and Growth

NOR	Domestic Market	External Market
4Q23	1,356,039	2,571,859
3Q23	1,353,146	2,466,847
Δ%	0.2%	4.3%
4Q22	1,253,233	2,613,685
Δ%	8.2%	-1.6%



(WEG, 2024b)

5.4.2 Energy Generation, Transmission & Distribution (GTD)

The Energy Generation, Transmission, and Distribution (GTD) segment at WEG S.A. showcases the company's pivotal role in providing advanced solutions for sustainable energy. This segment focuses on products such as generators for hydroelectric, thermal, and wind power plants, solar generation equipment, transformers, substations, control panels, and automation services. The demand for these products is directly tied to investments in diverse energy projects across the generation, transmission, and distribution sub-segments, highlighting a shift from industrial investment to a broader energy infrastructure development.

WEG has established itself as a key player in renewable energy, offering high-quality solar generation systems, including modules, inverters, transformers, switchgears, and substations designed for clean energy generation in residential, commercial, and industrial settings. The company's entry into the solar market in 2016 with photovoltaic solar inverters, smart energy meters, and solar power centers underscores its commitment to sustainable energy solutions. Furthermore, WEG's involvement in electric

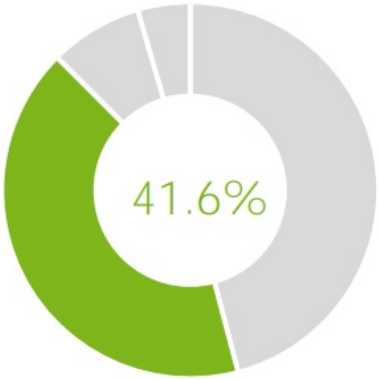
mobility, through the production of traction frequency inverters for electric vehicles and charging stations, marks its innovative approach to the future of transportation.

The GTD segment not only includes the manufacture and supply of electrical generators, alternators, wind generators, and hydraulic and steam turbines but also extends to the development, construction, and management of conventional and mobile substations. These products and systems are considered capital goods, with demand primarily driven by investments in the energy sector's generation, transmission, and distribution, rather than direct industrial production.

WEG's focus on the Americas and Africa, leveraging its significant presence in Brazil and expanding operations in North America, underscores its strategic approach to tapping into new markets. The company's main customers in this segment include utility companies, private renewable energy generators, distributed generation consumers, especially in solar energy, and large industrial companies utilizing co-generation.

Figure 4 – GTD Share of 2023 4Q Net Operating Revenue (NOR) and Growth

NOR	Domestic Market	External Market
4Q23	2,093,998	1,469,082
3Q23	1,907,630	1,317,581
Δ%	9.8%	11.5%
4Q22	2,031,117	1,136,479
Δ%	3.1%	29.3%



(WEG, 2024b)

In 2022, WEG reported growth in all GTD business areas within Brazil, fueled by the rising demand for distributed solar generation and the recovery of wind turbine revenue. The delivery of large transformers and substations for transmission auction projects, alongside sales of transformers for distribution networks and industries, highlighted the segment's robust performance. Internationally, WEG made strides in North America by seizing opportunities to supply transformers for renewable energy parks, despite fluctuations throughout the year. (WEG, 2024a).

5.4.3 Commercial & Appliance Motors

The Commercial and Appliance Motors segment at WEG S.A. represents a critical component of its business portfolio, offering a wide range of single-phase motors designed for commercial and residential applications. These motors are essential for a variety of applications including water pumps, electronic gates, kitchen hoods, food processors, swimming pool pumps, and white goods appliances such as washing machines and air conditioners. WEG has established market leadership in Brazil, partnering with the country's major equipment manufacturers.

In recent years, WEG has initiated the international expansion of this segment, developing a comprehensive product portfolio to cater to its global clientele. This business area is characterized by short-cycle operations, where consumer demand fluctuations are swiftly reflected in the industry, impacting production and revenue almost immediately.

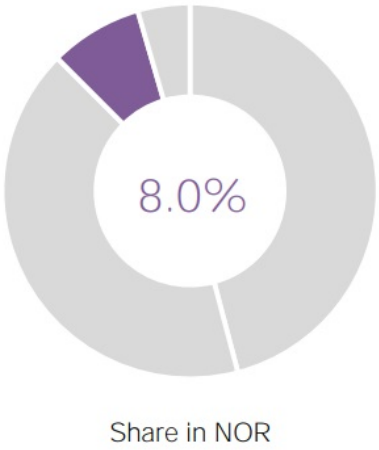
The consumer market for these products is diverse, with a significant concentration among major Original Equipment Manufacturers (OEMs) of general white goods. WEG's efforts are primarily focused on Brazil, with strategic expansions into Latin America, China, and the United States, aiming to meet the global demand with a complete product lineup.

The demand for these motors is influenced by factors such as consumer income growth, credit availability, and interest rates. This sector primarily encompasses single-phase motors for durable consumer goods, including washing machines, air conditioning units, and water pumps. WEG continues to lead in the Brazilian market and maintains a comprehensive portfolio for international markets, focusing on North America, Argentina, and China.

Despite experiencing a demand adjustment in Brazil post-2021's strong performance, a resurgence to pre-pandemic levels was observed in the latter half of the year (2022). Internationally, growth was noted across all regions of operation, with a particular emphasis on North America, showcasing WEG's ability to adapt to market changes and maintain its leadership in the commercial and appliance motors sector. (WEG, 2024a).

Figure 5 – MCA Share of 2023 4Q Net Operating Revenue (NOR) and Growth

NOR	Domestic Market	External Market
4Q23	328,634	360,361
3Q23	273,933	393,589
Δ%	20.0%	-8.4%
4Q22	248,423	349,126
Δ%	32.3%	3.2%



(WEG, 2024b)

5.4.4 Paints & Varnishes

The Paints and Varnishes segment of WEG S.A. serves as a complementary extension to the company's extensive product portfolio, catering primarily to clients across WEG's other business sectors. This focus has positioned WEG as a unique provider capable of addressing the specific needs of its customers through a holistic approach.

In this segment, WEG specializes in producing high-performance liquid paints, powder coatings, electro-insulating varnishes, and resins. These products are essential for the durable goods and capital goods industries, offering protection and finishing for components and products. The demand within this sector is closely tied to industrial production growth and GDP, highlighting its reliance on broader economic conditions. Key customers include metallurgical companies, shipyards, equipment manufacturers, and the furniture industry, demonstrating the segment's wide applicability.

WEG's offerings extend to the automotive repainting sector, including primers, varnishes, and custom-color paints, alongside high-resistance liquid paints for various industrial applications. The company's powder coatings are designed for finishing appliances, tubular furniture, lighting fixtures, auto parts, and metal structures. Furthermore, WEG provides maritime and anti-corrosive solutions for painting and preserving marine and riverine vessels and structures.

Powder paints, characterized by their solid composition and application at high temperatures, result in a protective film with high chemical and physical resistance available in diverse colors and finishes. Liquid paints, formulated based on client needs, undergo a production process involving weighing, dispersion, grinding, and quality adjustments to meet specific standards, such as resistance to weather, harsh conditions, and more.

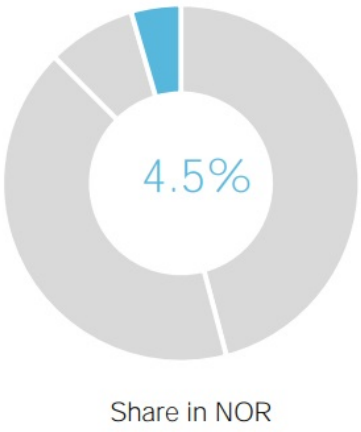
Focusing primarily on the Latin American market for industrial applications, WEG ensures its own production needs for paints and varnishes are fully met internally. This business area is characterized by short cycles, where demand fluctuations from clients directly impact production and revenue. In Brazil, demand remained high throughout the year across various segments like agricultural implements, road equipment, sanitation, and metal structures. Internationally, sales in WEG's foreign operations and exports from Brazil to other Latin American countries significantly contributed to the year's positive outcomes, illustrating the segment's critical role in WEG's diversified business model and its capacity to adapt to changing market demands. (WEG, 2024a).

5.5 PEERS

In the competitive landscape, WEG S.A. operates alongside a diverse array of global players, each specializing in similar sectors such as electrical equipment,

Figure 6 – T&V Share of 2023 4Q Net Operating Revenue (NOR) and Growth

NOR	Domestic Market	External Market
4Q23	304,134	77,178
3Q23	291,977	70,135
Δ%	4.2%	10.0%
4Q22	285,046	62,528
Δ%	6.7%	23.4%



(WEG, 2024b)

automation, and industrial manufacturing. Notable competitors include, but are not limited to:

- Mitsubishi Electric Corp
- Siemens AG
- Schneider Electric SE
- Eaton Corp PLC
- Atlas Copco AB
- Illinois Tool Works Inc
- Parker-Hannifin Corp
- Emerson Electric Co
- AMETEK Inc
- Cummins Inc

These companies, similar to WEG, provide a wide range of products and solutions across various industries. Their presence in the market represents a mix of

direct competition and potential benchmarking opportunities for WEG, highlighting the company's standing in a highly dynamic and innovative industry landscape.

Mitsubishi Electric Corp

Mitsubishi Electric Corp, a leading global manufacturer, specializes in electrical and electronic equipment, spanning energy systems, industrial automation, information and communication systems, and home appliances. Compared to WEG S.A., Mitsubishi Electric offers a broader range of products across more sectors, including automotive equipment and public systems, demonstrating a wide-reaching global presence. While both companies compete in the automation and energy sectors, Mitsubishi Electric's extensive diversification across industries and its strong foot in Asia positions it differently in the global market, complementing WEG's strengths in motors, generators, and electrical components

Siemens AG

Siemens AG is a global powerhouse in industry, energy, healthcare, and infrastructure solutions, with a more diversified portfolio than WEG S.A., including medical technology and building technologies. Siemens stands out for its comprehensive offerings in automation, digitalization, and smart infrastructure, positioning it as a leader in industrial and technological advancements. Compared to WEG, which focuses on electrical machinery, automation, and paints, Siemens' broad scope across various sectors including health and smart cities highlights its unique position in the market, leveraging advanced technologies to drive innovation across multiple domains.

Schneider Electric SE

Schneider Electric SE specializes in energy management and automation solutions, focusing on making energy safe, reliable, efficient, productive, and green. Compared to WEG, Schneider Electric places a stronger emphasis on integrating energy technologies, real-time automation, software, and services across various industries, including buildings, data centers, infrastructure, and industries. While WEG excels in electrical machinery, automation, and coatings, Schneider's broader approach towards energy efficiency and sustainability initiatives positions it as a leader in the digital transformation of energy management and automation solutions.

Eaton Corp PLC

Eaton Corp PLC is a power management company providing energy-efficient solutions to manage electrical, hydraulic, and mechanical power more effectively. It stands apart from WEG S.A. with its focus on power quality, distribution, and control

solutions, as well as services for equipment lifecycle management. Eaton's portfolio encompasses a wider range of power management technologies, compared to WEG's emphasis on electric motors, automation, and paints. Eaton serves various markets including commercial, residential, utility, and industrial sectors, offering a broader suite of solutions aimed at enhancing power reliability and efficiency.

Atlas Copco AB

Atlas Copco AB is a global industrial group specializing in compressors, vacuum solutions, generators, pumps, power tools, and assembly systems. Differing from WEG's focus on electrical machinery and automation, Atlas Copco concentrates on sustainable productivity solutions across various industries. While WEG leads in electric motors and drives, Atlas Copco's strength lies in air and gas compression technology and equipment for industrial processes. Their innovation in energy-efficient industrial equipment complements WEG's offerings, serving distinct but sometimes overlapping customer needs in the industrial sector.

Illinois Tool Works Inc

Illinois Tool Works Inc (ITW) is a diversified multinational manufacturer that designs and produces engineered fasteners, components, equipment, consumable systems, and specialty products. In contrast to WEG's focus on electric motors, automation, and paints, ITW operates across a wider range of sectors, including automotive OEM, electronics, food equipment, and construction. ITW's business model is characterized by a high degree of operational autonomy within its segments, differing from WEG's integrated approach to product development and manufacturing in the electrical and automation sectors.

Parker-Hannifin Corp

Parker-Hannifin Corp is a leader in motion and control technologies, offering precision-engineered solutions for a wide variety of mobile, industrial, and aerospace markets. Unlike WEG, which primarily focuses on electrical machinery, automation, and paints, Parker-Hannifin's portfolio spans hydraulic, pneumatic, electromechanical, filtration, process control, fluid and gas handling equipment. Parker-Hannifin's specialization in complex control systems and engineering solutions contrasts with WEG's expertise in manufacturing motors and drives, positioning each company distinctly within the industrial sector.

Emerson Electric Co

Emerson Electric Co is a technology and engineering company providing innovative solutions for customers in industrial, commercial, and residential markets. Emerson's focus spans from process control systems, climate technologies, to power technologies, which differentiates it from WEG's concentration on electric motors, automation, and paints. Emerson's broad approach in automation and process optimization complements WEG's offerings, with Emerson leaning more towards comprehensive process management solutions and WEG towards the manufacturing of electrical equipment and components, positioning each company to serve different aspects of industrial needs.

AMETEK Inc

AMETEK Inc. is a global manufacturer of electronic instruments and electromechanical devices, with a focus on precision instrumentation, and electrical motors for aerospace, power, and industrial markets. Unlike WEG's emphasis on electric motors, automation, and paint solutions for various sectors, AMETEK specializes in highly engineered electrical components, advanced test and measurement equipment, and niche markets in material analysis. While WEG offers broad solutions for energy efficiency and industrial automation, AMETEK concentrates on specialized applications, making its comparison to WEG more focused on the electrical and electromechanical segment overlap.

Cummins Inc

Cummins Inc. is a global power leader that designs, manufactures, distributes, and services diesel and natural gas engines, electric and hybrid powertrains, and related components. Unlike WEG, which is focused on electrical machinery, automation, and coatings, Cummins specializes in the power generation sector, offering solutions for on- and off-highway vehicles, industrial applications, and power generation. While both companies are involved in energy solutions, Cummins emphasizes engine and power systems, diverging from WEG's electrical and automation product lines, highlighting distinct market focuses within the broader energy sector.

5.6 CLIENTS

WEG S.A. does not have any single client that accounts for more than 10% of its total net revenue. This demonstrates WEG's diverse client base across various operational segments, reflecting the company's broad market reach and the diversified nature of its business. This diversification strategy mitigates financial risk by not being overly

dependent on any single client or market segment, ensuring stability and resilience in its revenue streams.

5.7 MAIN SUPPLIERS

WEG S.A. maintains strategic partnerships with key suppliers in Brazil and abroad, prioritizing relationships that do not bind the company to exclusivity agreements. The selection of suppliers is based on criteria such as product quality and cost, supplier reputation, financial health, delivery times, and product availability. Quality control measures ensure that all procured products meet WEG's stringent requirements and regulatory standards. Some of WEG's main suppliers include Paranapanema, Ibrame, Metal Group for copper; Sistema Usiminas, Arcelor Mittal, Baosteel for steel plates; Aperam, Baosteel, China Steel for silicon steel sheets; and Grupo Gerdau, HBIS Group ShiJiaZhuang Iron and Steel Co. Ltd., Ozkan Demir Celik Sanayi A.S for long steel products. This diverse supplier network supports WEG's manufacturing of electrical machinery and solutions across various segments, highlighting the company's commitment to quality and efficiency in its production processes.

5.8 MACRO FACTORS AND RISKS

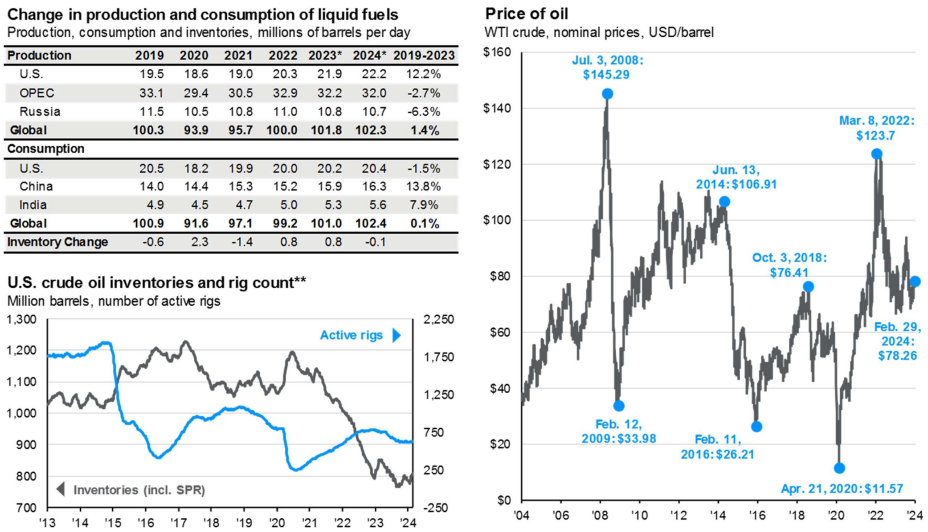
In the context of WEG S.A., a comprehensive analysis of macroeconomic factors and associated risks is essential for understanding the challenges and opportunities the company faces in the global and domestic markets. This analysis not only sheds light on the current operating environment but also provides insights into potential future scenarios that could impact the company's financial performance and strategic positioning.

Commodity Price Volatility

The prices of commodities such as copper, steel and oil, which are pivotal to the production of industrial machinery and equipment, are subject to significant fluctuations on the international market. Given that these commodities can account for more than 40% of the final cost of some products, substantial increases in commodity prices or the imposition of non-tariff barriers could hinder WEG's ability to pass these cost increases onto customers competitively. Price hikes in raw materials may lead to reduced sales volume and, consequently, diminish profit margins, adversely affecting the company. (WEG, 2024a).

The historical pricing trends of Brent crude oil, as depicted in Figure 7, illustrate significant volatility, particularly during global crises. During the 2008 financial crisis, the value of Brent crude plummeted, losing two-thirds of its value. Conversely, in the midst of the COVID-19 pandemic in 2020, its price experienced a doubling. However, it's not

Figure 7 – Price of oil, change in production and consumption of liquid fuels and US crude oil invetories and rig count



(J.P. MORGAN, 2024)

just during periods of crisis that oil prices exhibit fluctuations, even under more stable economic conditions, prices can vary significantly. This can be often due to the strategic production adjustments made by OPEC, including both synchronized production cuts and increases, or sudden demand shocks. Such volatility in oil prices can have a profound impact on WEG's operating margins and overall business performance if not mitigated with hedging strategies, utilizing financial derivatives and inventory management.

The historical pricing trends of iron ore, as detailed in Figure 8, also underscore the commodity's susceptibility to substantial volatility, particularly during times of global economic turmoil. For example, during the 2008 financial crisis, iron ore prices dramatically fell from $195 to $63, signifying the worldwide reduction in demand for raw materials. In a stark contrast, amidst the COVID-19 pandemic in 2020, iron ore prices surged from $84 to $215.

China's pivotal role in the iron ore demand is very important, as the world's largest consumer and importer of iron ore. The nation's demand significantly influences global pricing and market dynamics. This demand is closely tied to its steel production industry, the largest globally, which requires vast quantities of iron ore. Consequently, any shifts in China's industrial strategy, economic policies, or infrastructural investment directly impact the demand for iron ore, reflecting in global price adjustments.

Besides demand from China, several other factors contribute to the price fluctuations of iron ore. These include supply disruptions due to environmental policies, mining operations' challenges, geopolitical tensions that affect trading routes, and the operational status of major iron ore mines worldwide. Seasonal weather patterns, particularly

Figure 8 – Iron Ore prices in USD/ton from September 2007 until March 2024

(TRADING ECONOMICS, 2024)

in key iron ore exporting countries like Australia and Brazil, can also cause significant supply interruptions, leading to price spikes.

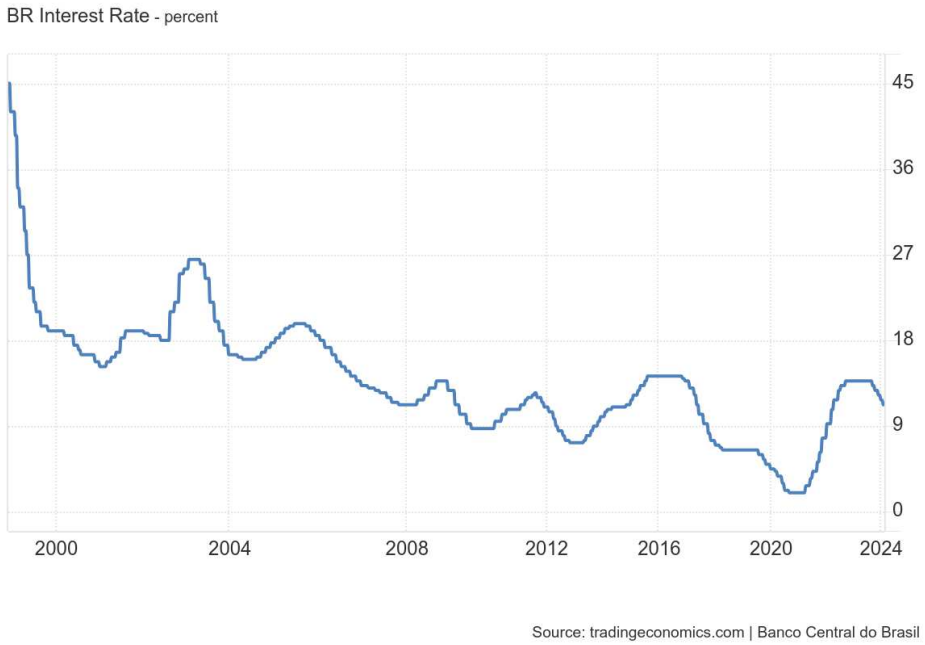
For companies like WEG, which depend on steel and other metals derived from iron ore, these price fluctuations pose a risk to cost structures and profit margins. To navigate this volatility, like in oil, WEG needs to adopt several risk mitigation strategies. These could include securing long-term contracts at fixed prices to hedge against market volatility, diversifying supply sources to reduce dependency on a single market or supplier, and utilizing financial derivatives to lock in prices. Additionally, maintaining flexible inventory levels can serve as a buffer against sudden price increases, ensuring that operations can continue smoothly despite market fluctuations. (WEG, 2024a).

Interest Rate Fluctuations

Interest rate variations pose a risk to WEG by potentially increasing the cost of borrowing. Higher interest rates can dampen demand for capital goods by making financing more expensive, thus negatively impacting WEG's operational results and financial expenses. Conversely, rising interest rates could positively affect the company's financial income through better returns on financial investments.

The brazilian interest rates have a significant volatility as well, as it can be seen in Figure 9. The interest rate not only affect WEGs financing ability through cost of debt increase but also interfere with the economic activity and cost of equity, through the decrease demand for risky assets like WEG's stock. So, to lower these risks, it's

Figure 9 – Historical Brazilian Interest Rates



(TRADING ECONOMICS, 2024)

essential to take the low interest rate period oppotunity to finance itself through stock offerings or debt, locking lower rates to finance itself during high interest rate times.

The volatility of Brazilian interest rates - which are only one of the many interest rates that affect WEG - as depicted in Figure 9, significantly impact WEG. These interest rates directly influence WEG's financing capabilities by affecting the cost of debt, as rates rise, so does the cost of borrowing. Moreover, fluctuations in interest rates also affect economic activity and the cost of equity, as higher interest rates typically lead to decreased demand for riskier assets, including stocks such as WEG's. In response to this, it is important for WEG to capitalize on periods of low interest rates to secure financing. By issuing stock or taking on debt when rates are favorable, WEG can lock in lower costs for future financing needs, even when interest rates escalate. This strategic financial management is vital for mitigating the adverse effects of interest rate volatility on the company's operations and long-term financial health. (WEG, 2024a).

Exchange Rate Instability

Given WEG's significant exposure to international markets, with around 50% of its net revenue derived from operations outside Brazil, fluctuations in exchange rates can significantly affect its financial condition and operational results. A depreciation of the Brazilian real against major currencies can lead to inflationary pressures in Brazil, impacting economic growth and possibly prompting higher interest rates which decrease economic activity and increase financing costs. Appreciation of the real, on

the other hand, could devalue Brazil's current accounts abroad and reduce export-driven growth.

Figure 10 – Historical Brazilian USD/BRL exchange rates

(TRADING ECONOMICS, 2024)

The fluctuating nature of exchange rates, as highlighted by the recent trends in the Brazilian Real (BRL) depicted in Figure 10, plays a pivotal role in shaping the financial landscape for Brazilian exporters like WEG and the agribusiness sector. The depreciation of the BRL in 2021 and 2022 has had a multifaceted impact.

For WEG, a leading manufacturer with a substantial international footprint, the lower value of the BRL against major currencies such as the USD has been particularly beneficial in enhancing export competitiveness. This depreciation has made WEG's products more price-attractive in international markets. Such a scenario is advantageous for Brazilian exporters, including the agro-industry, which has seen increased competitiveness of its products abroad.

On the flip side, WEG must navigate the challenges posed by exchange rate volatility, including increased costs for imported materials and components crucial for manufacturing processes. A weaker BRL makes these imports more expensive, potentially squeezing profit margins if the increased costs cannot be fully passed onto customers.

Moreover, WEG's strategy to mitigate the risks associated with exchange rate fluctuations can involve sophisticated approaches. Utilizing financial hedging instruments, such as forward contracts and options, allows WEG to lock in favorable exchange rates for future transactions, thus reducing the unpredictability of financial outcomes.

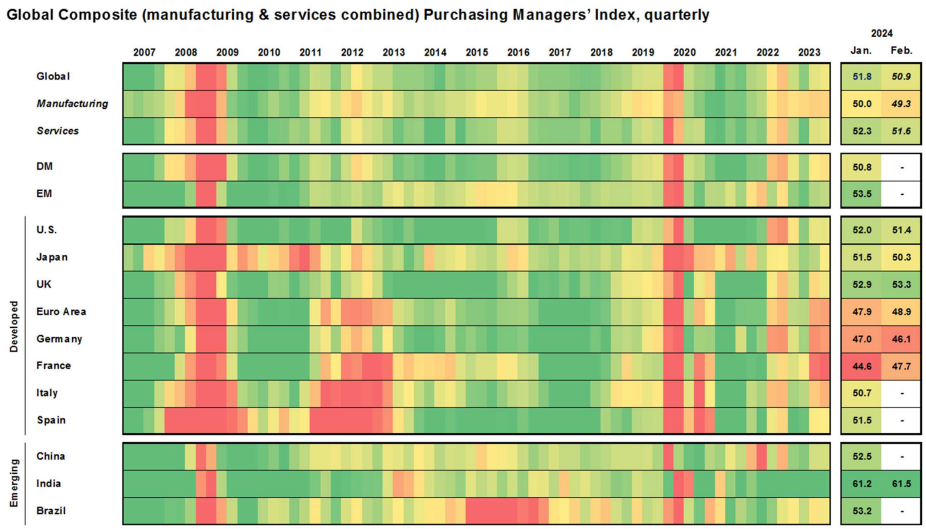
Additionally, geographical diversification of its operations helps WEG to balance the exchange rate risks, as gains in one region can offset losses in another.

The recent trends of a lower BRL have underscored the importance of agile financial management and strategic planning for companies like WEG. By capitalizing on the competitive edge provided by favorable exchange rates while employing hedging strategies to safeguard against volatility, WEG can navigate the complexities of the global market. (WEG, 2024a).

Global Economic Conditions

The performance of both the durable goods sector and the capital goods sector is highly sensitive to economic activity levels. Fluctuations in the Brazilian economy can adversely affect the performance of these sectors, thereby impacting WEG's operational results and financial condition. As durable goods and capital goods represent substantial portions of WEG's product portfolio, any downturn in economic conditions could significantly reduce demand for these products. WEG's revenue and future growth are not solely dependent on the Brazilian economy but also on the performance of other countries where it operates. A downturn in key markets such as North America and Europe could lead to reduced demand for WEG's products in these regions, adversely affecting the company.

Figure 11 – Global Composite (manufacturing and services combined) Purchasing Managers' Index



(J.P. MORGAN, 2024)

The Purchasing Managers' Index (PMI) is an economic indicator derived from monthly surveys of private sector companies. It provides insight into the economic health of the manufacturing and service sectors. The PMI is composed of several sub-

indices that cover new orders, inventory levels, production, supplier deliveries, and employment environments.

The heatmap in Figure 11 presents the Purchasing Managers' Index (PMI) data for both the manufacturing and services sectors, combined on a global scale as well as for specific countries and regions. The colors range from green, indicating expansion (PMI > 50), to red, showing contraction (PMI < 50).

For WEG, these PMI trends can be indicative of the general business climate they operate in. Strong PMI figures, especially in the manufacturing sector, are a good sign for WEG as they indicate healthy demand for industrial equipment and machinery. In regions where the PMI is above 50, WEG might anticipate higher sales and possibly plan to expand production or investment. Conversely, PMI figures below 50 suggest a contraction in manufacturing activity, which could lead to lower demand for WEG's products, prompting them to review and possibly adjust their production and sales strategies.

The "Global Economic Condition" risk for WEG is directly tied to these PMI figures, as they reflect the overall economic health of the markets WEG serves. Expansionary phases marked by PMI figures above 50 could signal robust economic conditions, potentially leading to increased investment and consumption, which benefit WEG. In contrast, contractionary phases signal economic downturns that could lead to reduced demand for WEG's products and services, tighter credit conditions, and overall increased economic risk. (WEG, 2024a).

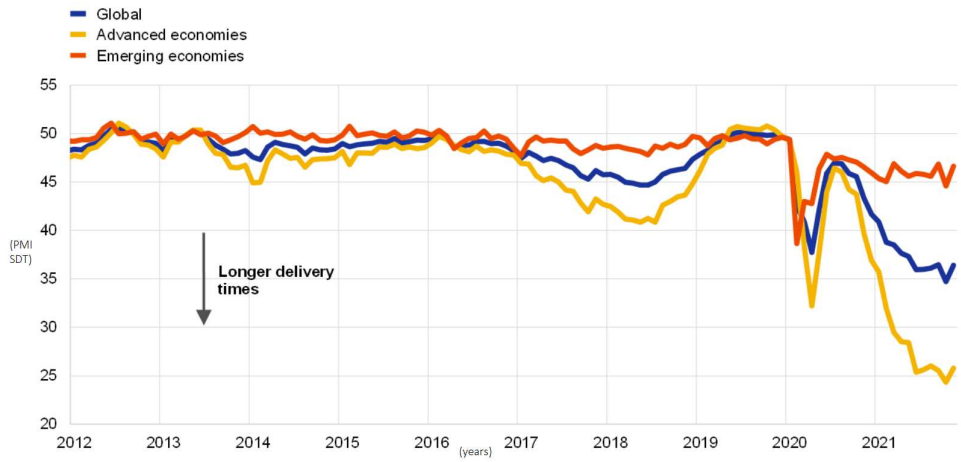
Transport Infrastructure and Logistics

The Brazilian transport infrastructure, characterized by port and airport saturation, high labor costs, and a deteriorated road and transport fleet, poses significant logistical challenges. These issues, compounded by frequent strikes and public sector disruptions, can affect WEG's ability to efficiently distribute its products to national and international clients, impacting operational results and financial conditions.

The chart depicted in Figure 12 shows the delivery times (through Purchasing Managers Index suppliers' delivery times [PMI SDT]) from 2012 through 2021, highlighting considerable increases, especially during the years 2018, 2020, and 2021, with advanced economies being the most impacted. This trend of growing disruptions suggests a worsening trajectory for global transport infrastructure and logistics over time.

For WEG, these lengthening delivery times signal a significant concern, as it also operates in developed countries. The upticks in 2018 and 2020 are particularly noteworthy, coinciding with major global events likely to impact logistics, such as trade disputes and the COVID-19 pandemic. In 2021, the trend continues, indicating that the transport and logistics industries have not yet recovered to pre-disruption efficiency

Figure 12 – PMI Suppliers Devery Times across regions



(EUROPEAN CENTRAL BANK, 2024)

levels.

Moreover, if WEG is relies in any of the components that are facing these extended delivery times, it could disrupt their manufacturing schedules, potentially leading to production delays and increased costs. To mitigate these risks, WEG could need to reassess its supplier relationships, seeking more locally based alternatives or suppliers from regions less affected by these delays.

The trend indicated in the Figure 12 underscores a broader risk related to logistics, one of the vital risks WEG must manage. This ongoing issue could prompt WEG to further diversify its manufacturing and distribution footprint, potentially investing in regions with more reliable infrastructure or exploring alternate transportation methods to escape the most problematic areas. Possibly incurring higher cost of transportation or manufacturing. (WEG, 2024a).

International Operations and Expansion Risks

WEG's expansion and operations in international markets introduces risks related to economic, political, social, and legal conditions in these countries. As the company operates in diverse international territories, it faces challenges of navigating a wide array of regulatory environments, each with its own unique stipulations and compliance requirements.

Political risks involve changes in leadership, regulatory reforms, and shifts in foreign policy, which can significantly alter the business and affect WEG's ability to operate efficiently. Social risks, such as labor force dynamics, cultural nuances, and consumer behavior, require careful management to ensure alignment with local market expectations and standards.

Furthermore, legal risks are always present as international law, trade agree-

ments, and local legislation can change with little notice, necessitating constant legal vigilance and adaptability. Additionally, the complexities of international taxation, repatriation of profits, and intellectual property rights add layers of financial and operational intricacies.

To thrive with these challenges, WEG must exhibit strategic agility, robust risk assessment, and adeptness at deploying localized management approaches. The development of comprehensive contingency plans, investment in local expertise, and forging strong relationships with local entities are essential for mitigating these risks. (WEG, 2024a).

6 VALUATION

In this chapter, the valuation of WEG S.A. is conducted using the Discounted Cash Flow (DCF) method. The DCF technique requires a forward-looking lens, therefore, financial projections for WEG over a five-year period, from 2024 to 2028, were done. These projections are based on the company's financial history over the past six years (2018-2023), considering that WEG will keep the previous growth.

The chapter is structured to explain the valuation process. It starts with Macro Assumptions, laying down the assumptions for inflation and GDP growth used for the model. The Revenue, Cost and Expenses, CAPEX and Depreciation and Working Capital Projections section are built on historical growth patterns.

The Cost of Capital section evaluates the expense of funding WEG's ventures, incorporating WEG's Cost of Equity and Cost of Debt to form the Weighted Average Cost of Capital.

Advancing further, the Perpetuity section assesses WEG's terminal value after the explicit forecast period. This is an essential component of the valuation, as it estimates the company's worth beyond the immediate projection timeframe based on its expected long-term stable growth.

The chapter culminates with the Enterprise Value and Equity Value, which translate the DCF projections into a quantifiable valuation of the company.

Additionally, the Multiples Valuation section offers a market-based perspective by comparing WEG's valuation metrics with industry standards.

It's important to note that the financial statements utilized are prepared in accordance with US GAAP (Generally Accepted Accounting Principles), rather than IFRS (International Financial Reporting Standards), which is commonly used in Brazil. This detail is crucial for the accuracy and comparability of the financial analysis. The financial data has been sourced from the Bloomberg Terminal, ensuring reliable and up-to-date information.

Overall, this chapter aims to synthesize all preceding analyses into a detailed and judicious valuation of WEG S.A., considering its present status, future potential, and the inherent value of its operations within the international marketplace.

6.1 MACRO ASSUMPTIONS

The valuation of WEG S.A. is based in macroeconomic assumptions projected by Itau, European Central Bank and Bloomberg, which encapsulate the dynamics of the global economy and the specific financial environments of Brazil, the Eurozone and Mexico. Such assumptions are essential for the DCF model projections and, by extension, for aligning the valuation outcomes with WEG's global operational realities.

To project the perpetuity growth used in discounting the future cash flows the

world GDP growth rates will be used, these being the last projected figures by (ITAÚ, n.d.). Projections regarding currency valuation, particularly the exchange rates that affect WEG's international trade, will not be explicitly modeled but acknowledged as an influencing factor, given the lack of reliability on exchange rates predictions.

Brazilian IPCA and interest rates, namely Brazil's CDI (index responsible for defining the interest rates of loans between banks), Mexico's TIIE (reference rate established by the Bank of Mexico intended for the financial sector), and the Euribor (the Euro Interbank Offered Rate, the benchmark rate that banks in the Eurozone use to lend to one another), serve as proxies for the cost of capital in their respective regions. These rates not only influence WEG's financial expenses but also impact investment appetite and access to capital within these markets. Itau's, European Central Bank and Bloomberg's weighted average financial projections will serve as the foundation for these interest rate assumptions, ensuring consistency with the market's latest expectations and expert insights.

For the period beyond the latest available projections, a conservative approach will be adopted, with the terminal values in the valuation model reflecting the stabilization of these macroeconomic indicators at the last projected figures. This assumption is made with an understanding of the potential deviations that could arise from unforeseen political, economic, or regulatory changes.

	2024P	2025P	2026P	2027P	2028P*	Perpetuity*
Economic Activity						
World - GDP Real Growth	3,1%	3,3%	3,0%	3,0%	3,0%	3,0%
Inflation						
IPCA	3,6%	3,5%	3,5%	3,5%	3,5%	3,5%
Interest Rate						
CDI - Year to Date	9,91%	8,89%	8,46%	8,39%	8,39%	8,39%
Source: Itau						
Euribor (source: ECB)	3,6%	2,8%	2,7%	2,7%	2,7%	2,7%
TIIE (source: Bloomberg)	10,2%	8,0%	6,8%	6,8%**	6,8%	6,8%

**assumed the same value as 2027*
***assumed the same value as 2026*

Figure 13 – Macro Assumptions

6.2 REVENUE PROJECTION

In the Revenue Projections section, the utilization of the harmonic mean of the last six years for future revenue predictions was chosen to foster a conservative forecast. This method is employed to mitigate the impact of outliers and ensure a more conservative approach compared to the arithmetic mean. This strategic choice diminishes the dependence on complex speculative models, like projecting the Commercial & Appliance Motors segment against population growth or the Energy Generation, Transmission & Distribution (GTD) segment against anticipated energy demand increases. Although such models might offer granular insights, they also introduce more

assumptions, potentially compromising the forecast's accuracy and clarity. Employing the harmonic mean as a basis for future revenue estimations provides a measured and trustworthy method, congruent with the aim to uphold a prudent perspective on WEG S.A.'s financial projections.

IS Assumptions

R$ in millions	2018	2019	2020	2021	2022	2023	2024e	2025e	2026e	2027e
Revenue	R$ 11.992,75	R$ 13.377,71	R$ 17.515,93	R$ 23.985,49	R$ 30.052,08	R$ 32.659,07	R$ 34.863,18	R$ 37.216,04	R$ 39.727,69	R$ 42.408,85
Growth (yoy)%	1,7%	11,5%	30,9%	36,9%	25,3%	8,7%	7%	7%	7%	7%
Other Operating Income	R$ 22,66	R$ 30,28	R$ 46,37	R$ 422,15	R$ 147,36	R$ 155,47	R$ 137,38	R$ 137,38	R$ 137,38	R$ 137,38
Growth (yoy)%	0,50%	33,6%	53,1%	810,4%	-65,1%	5,5%	0%	0%	0%	0%

Figure 14 – Revenue and Other Operating Income Projections

As depicted in Figure 14, the historical and projected values for Revenue and Other Operating Income are illustrated, highlighting the significant growth surge during the Covid-19 pandemic and the subsequent year, showcasing the company's capability to expand even amid global market fluctuations. Nevertheless, the growth rate for the most recent year reverted to align with the harmonic mean, indicating the extraordinary growth in 2020 and 2021 might be considered anomalies.

For the revenue projection, the previously mentioned use of the harmonic mean was applied. However, for Other Operating Income, given its volatility, it was postulated to stay constant through the projection period, anchored at the average value noted over the past six years.

6.3 COST AND EXPENSES PROJECTION

For the projections of Cost of Revenue and Operating Expenses, the model adopts the historical proportion of these costs to revenue, at 69% and -15% of revenue respectively, mirroring the prudent approach taken in revenue projections. Giving the low historical volatility of these measures this projection may be a good approximation for the years to come.

IS Assumptions

R$ in millions	2018	2019	2020	2021	2022	2023	2024e	2025e	2026e	2027e
Cost of Revenue	R$ 8.500,82	R$ 9.394,17	R$ 12.032,05	R$ 16.602,38	R$ 21.209,24	R$ 21.702,74	R$ 24.174,32	R$ 25.805,81	R$ 27.547,40	R$ 29.406,53
% of revenue	71%	70%	69%	69%	71%	66%	69%	69%	69%	69%
Operating Expenses	-R$ 1.978,45	-R$ 2.132,25	-R$ 2.663,55	-R$ 3.507,28	-R$ 3.760,41	-R$ 4.473,35	-R$ 5.140,86	-R$ 5.487,81	-R$ 5.858,17	-R$ 6.253,53
% of revenue	-16%	-16%	-15%	-15%	-13%	-14%	-15%	-15%	-15%	-15%

Figure 15 – Cost of Revenue and Operating Expenses Projections

6.4 CAPEX AND DEPRECIATION PROJECTION

CAPEX is projected as a function of Property, plant, and equipment PP&E and Depreciation and Amortization (D&A).

$$CAPEX_y = PP\&E_y - PP\&E_{y-1} - D\&A_y. \tag{7}$$

BS Assumptions

R$ in millions	2018	2019	2020	2021	2022	2023	2024e	2025e	2026e	2027e
PP&E	R$ 3.541,95	R$ 3.981,18	R$ 4.877,21	R$ 5.504,77	R$ 6.282,65	R$ 7.294,84	R$ 7.669,90	R$ 8.187,53	R$ 8.740,09	R$ 9.329,95
as a % of revenue	30%	30%	28%	23%	21%	22%	22%	22%	22%	22%

Figure 16 – PP&E Projection

In projecting Property, Plant, and Equipment (PP&E) expenditure, an adjusted methodology is adopted considering the scale economies inherent in capital-intensive sectors. Recognizing WEG's recent expansion and its effect on reducing PP&E's relative burden to revenue, the most recent effective percentage of revenue (2023)—22%—as a constant figure throughout the forecast period will be applied. This approach assumes that PP&E expenses will stabilize at this ratio, reflecting the recent efficiency gains and assuming these gains are already stabilizing with WEG becoming a more mature company. It can be seen on Figure 16.

IS Assumptions

R$ in millions	2018	2019	2020	2021	2022	2023	2024e	2025e	2026e	2027e
D&A	R$ 317,02	R$ 396,78	R$ 451,36	R$ 520,18	R$ 565,56	R$ 628,04	R$ 822,77	R$ 878,30	R$ 937,57	R$ 1.000,85
% of revenue	2,6%	3,0%	2,6%	2,2%	1,9%	1,9%	2,4%	2,4%	2,4%	2,4%

Figure 17 – D&A Projection

The approach for projecting Depreciation & Amortization utilizes the average from the past six years as seen in Figure 17 and as used before.

Given that, it's possible to project capital expenditures, as seen in the figure below.

R$ in millions	2018	2019	2020	2021	2022	2023	2024e	2025e	2026e	2027e
CAPEX		R$ 836,01	R$ 1.347,39	R$ 1.147,74	R$ 1.343,44	R$ 1.640,23	R$ 2.618,76	R$ 1.513,28	R$ 2.811,37	R$ 4.870,81

Figure 18 – CAPEX Projection

6.5 WORKING CAPITAL PROJECTION

Working capital (WC) is function of accounts receivable (AR), accounts payable (AP), and inventory as it will be described below, due to the recent disruptions caused by the COVID-19 pandemic, the projections have been made using the median of these components over the past six years, rather than the average, assuming this period was an outlier and trying to mitigate its impact impact on the analysis. WC is important for WEG's operational efficiency and liquidity, due to capital-intensive nature. Efficient management of working capital supports WEG's capability to fulfill its short-term liabilities and sustain ongoing operational requirements. The COVID-19 pandemic underscored

the significance of agile working capital management, with 2020 witnessing a 31% growth in working capital, followed by an unprecedented surge of 47% in 2021. This spike, driven by supply chain disruptions and the strategic stockpiling of inventory to safeguard against component shortages, underscored the challenges and adjustments required in working capital strategies. As the effects of the pandemic begin to wane, a regression towards mean is anticipated, reflecting a stabilization in supply chains and inventory levels.

$$Account\ Receivable\ Days = \frac{Revenue}{365x\,Accounts\ Receivables} \tag{8}$$

$$Accounts\ Payable\ Days = \frac{Cost\ of\ Revenue}{365x\,Accounts\ Payable} \tag{9}$$

$$Invetory\ Days = \frac{Cost\ of\ Revenue}{365x\,Inventory} \tag{10}$$

$$Working\ Capital = Accounts\ Receivable + Accounts\ Payable + Inventory \tag{11}$$

BS Assumptions

R$ in millions	2018	2019	2020	2021	2022	2023	2024e	2025e	2026e	2027e
Assets										
Accounts Receivable	R$ 2.440,84	R$ 2.747,08	R$ 3.417,25	R$ 4.317,39	R$ 5.614,42	R$ 6.070,56	R$ 6.749,88	R$ 7.205,42	R$ 7.691,71	R$ 8.210,81
Account Receivable Days	74,29	74,95	71,21	65,70	68,19	67,84	69,70	69,70	69,70	69,70
Inventory	R$ 2.458,41	R$ 2.817,13	R$ 3.737,53	R$ 6.497,05	R$ 7.644,36	R$ 7.116,29	R$ 7.825,20	R$ 8.353,31	R$ 8.917,06	R$ 9.518,86
Inventory Days	105,56	109,46	113,38	142,84	131,56	119,68	116,53	116,53	116,53	116,53
Liabilities										
Accounts Payable	R$ 842,96	R$ 839,88	R$ 1.249,37	R$ 2.120,34	R$ 2.036,22	R$ 2.190,09	R$ 2.451,92	R$ 2.617,40	R$ 2.794,05	R$ 2.982,61
Account Payable Days	36,19	32,63	37,90	46,62	35,04	36,83	36,51	36,51	36,51	36,51

Figure 19 – Account Receivable, Payable and Inventory Projection

R$ in millions	2018	2019	2020	2021	2022	2023	2024e	2025e	2026e	2027e
Inventory	R$ 2.458,41	R$ 2.817,13	R$ 3.737,53	R$ 6.497,05	R$ 7.644,36	R$ 7.116,29	R$ 7.825,20	R$ 8.353,31	R$ 8.917,06	R$ 9.518,86
Accounts Receivable	R$ 2.440,84	R$ 2.747,08	R$ 3.417,25	R$ 4.317,39	R$ 5.614,42	R$ 6.070,56	R$ 6.749,88	R$ 7.205,42	R$ 7.691,71	R$ 8.210,81
Accounts Payable	R$ 842,96	R$ 839,88	R$ 1.249,37	R$ 2.120,34	R$ 2.036,22	R$ 2.190,09	R$ 2.451,92	R$ 2.617,40	R$ 2.794,05	R$ 2.982,61
Working Capital	R$ 4.056,30	R$ 4.724,33	R$ 5.905,41	R$ 8.694,10	R$ 11.222,57	R$ 10.996,75	R$ 12.123,16	R$ 12.941,33	R$ 13.814,72	R$ 14.747,05
Growth (yoy)%		16,47%	25,0%	47,2%	29,1%	-2,0%	10,2%	6,7%	6,7%	6,7%

Figure 20 – Working Capital Projection

The Equation (9), Equation (8) and Equation (10) show how AP, AR and Inventory days are calculated along with Equation (11) that shows how Working Capital is calculated.

Figure 19 shows the historical and the projections done with the median of the previous values. Figure 20 presents the Working Capital and how it varies throughout the whole period.

6.6 COST OF CAPITAL

For the valuation of WEG S.A. through the Discounted Cash Flow (DCF) method, the Weighted Average Cost of Capital (WACC) served as the discount rate for calculating the present value of the future cash flows. The WACC incorporates both the cost of equity (*Ke*) and the cost of debt (*Ki*), weighted according to the firm's capital structure, as shown previously in the Equation (6). This rate effectively reflects the expected returns demanded by both equity investors and debt holders, aligning the valuation with the comprehensive cost of funding the company's operations.

The cost of equity, estimated through the Capital Asset Pricing Model (CAPM), takes into account the risk-free rate, the beta of WEG's equity (indicating the stock's volatility compared to the market), and the market risk premium. This calculation aims to quantify the returns expected by equity investors, factoring in the risks associated with the company. For WEG S.A., the cost of equity was determined to be 10,69

The cost of debt, on the other hand, is assessed by reviewing the interest rates applicable to WEG's existing debt instruments, adjusted for the tax benefit of interest expenses. This approach yields an after-tax cost of debt, reflecting the actual expense of borrowing for WEG. The cost of debt for WEG was calculated at 5,23%.

WACC Calculation	
Risk Free Rate	10,85%
Beta	0,626
Market Return	10,59%
Ke	10,69%
Ki	5,23%
Equity Weight	84,04%
Debt Weight	15,96%
Effective Tax	12,59%
WACC	**9,92%**

Figure 21 – WACC Parameters and Result

Incorporating these elements, the WACC for WEG S.A. was computed to be 9,92% as seen in Figure 21. This rate was subsequently applied as the discount rate throughout the projection period and in calculating the terminal value. The debt weight, a ratio of the firm's total debt to the total capital (total debt plus total equity), was noted at 15,96%, indicating a low level of leverage within the firm's financial strategy.

By employing the WACC as the discount rate, the analysis acknowledges the total financing cost of WEG S.A., thus ensuring a valuation that resonates with the return expectations of all capital providers.

6.6.1 Cost of Debt

In the context of determining WEG S.A.'s financial valuation using the Discounted Cash Flow (DCF) method, the cost of debt plays a significant role in formulating the Weighted Average Cost of Capital (WACC). As highlighted in Equation (6), the cost of debt (*Ki*) reflects the expense associated with the company's borrowings.

WEG S.A.'s approach to managing its debt profile is prudent. The company's debt structure is predominantly denominated in foreign currencies, with a significant portion linked to USD. This financial strategy is reflective of WEG's global operations and its exposure to international markets.

DEBT (in Thousands)			
Debt	Rate	Index	Volume
	4	116% %CDI	R$ 5.765,00
	7	116% %CDI	R$ 25.000,00
	10	0,77% Euribor+	R$ 1.093.347,00
	3	6,84% IPCA+	R$ 151.227,00
	1	13% Fixed-rate	R$ 1.521,00
	2	4% Fixed-rate	R$ 301,00
	5	4% Fixed-rate	R$ 14,00
	6	2% Fixed-rate	R$ 66.178,00
	8	5% Fixed-rate	R$ 258.397,00
	9	4% Fixed-rate	R$ 249.149,00
	12	8% Fixed-rate	R$ 139.632,00
	13	9% Fixed-rate	R$ 91.431,00
	14	0% Fixed-rate	R$ 1.622,00
	15	4% Fixed-rate	R$ 484.070,00
	16	7% Fixed-rate	R$ 89.469,00
	11	1% TIIE+	R$ 177.932,00
		Total:	R$ 2.835.055,00

Indexadores	2024	2025	2026	2027
CDI	9,9%	8,9%	8,5%	8,4%
IPCA	3,6%	3,5%	3,5%	3,5%
Euribor	3,60%	2,80%	2,70%	2,70%
TIIE	10,24%	7,99%	6,83%	6,83%

Interest Expense	2024	2025	2026	2027
1	$195,98	$195,98	$195,98	$195,98
2	$12,79	$12,79	$12,79	$12,79
3	$15.715,59	$15.659,83	$15.636,87	$15.636,87
4	$662,95	$594,38	$566,03	$560,98
5	$0,60	$0,60	$0,60	$0,60
6	$1.323,56	$1.323,56	$1.323,56	$1.323,56
7	$2.874,90	$2.577,52	$2.454,61	$2.432,69
8	$12.403,06	$12.403,06	$12.403,06	$12.403,06
9	$11.062,22	$11.062,22	$11.062,22	$11.062,22
10	$47.724,60	$38.977,82	$37.884,47	$37.884,47
11	$20.039,59	$16.036,12	$13.967,66	$13.967,66
12	$10.472,40	$10.472,40	$10.472,40	$10.472,40
13	$8.091,64	$8.091,64	$8.091,64	$8.091,64
14	$72,02	$72,02	$72,02	$72,02
15	$21.492,71	$21.492,71	$21.492,71	$21.492,71
16	$6.602,81	$6.602,81	$6.602,81	$6.602,81
Total	$160.771,41	$147.600,45	$144.265,43	$144.239,46
Ki	5,67%	5,21%	5,09%	5,09%

Figure 22 – Cost of Debt Calculations

To account for the cost of WEG's debt in the valuation, it was used the current values of WEG's loans in BRLs - as seen in Figure 22, considering the exchange rate used in the latest financial statement and the current capital structure as constant.

For the purpose of this analysis, WEG's cost of debt before taxes has been calculated to be reflective of its diversified debt portfolio. While specific rates and spreads may vary across different debt instruments, the overall cost of debt is used. This cost, adjusted for the tax shield - as shown in Figure 21 - provided by interest expenses, contributes to the WACC calculation, ensuring a comprehensive understanding of WEG's financing cost.

6.6.2 Cost of Equity

The Cost of Equity for WEG S.A. was calculated using the Capital Asset Pricing Model (CAPM) - shown in Equation (4) - a widely recognized model that estimates the return required by equity investors based on the risk associated with the investment. This section extends the discussions initiated in the WACC calculation, focusing now on the specifics of determining the equity cost.

The CAPM formula incorporates three critical components: the risk-free rate, the equity market risk premium, and the beta of the company's stock. For the risk-free rate,

Figure 23 – Brazilian 10 Year Generic Treasury Bond 10 Year Average

(source: Bloomberg Terminal, March 2024)

the average yield of the last 10 years on 10-year Brazilian government bonds was used, as depicted in Figure 23, where the blue dotted line indicates the period's average yield. This measure reflects the long-term borrowing cost of the Brazilian government and provides a benchmark for the safest investment in Brazil's financial market. This approach was chosen over using international benchmarks such as the U.S. 10-year Treasury bond to more accurately reflect the local investment landscape and the specific risks associated with the Brazilian market.

Figure 24 – IBOVESPA 10 Year Return Average

(source: Bloomberg Terminal, March 2024)

The market return was derived from the past 10-year returns of the Ibovespa, Brazil's benchmark stock market index, as shown in the Figure 24. This measure reflects the overall performance of the Brazilian stock market, capturing the returns investors might expect from a diversified portfolio of stocks in Brazil. By using the Ibovespa as a

proxy for market return, the analysis aims to incorporate the unique characteristics and risks of investing in the Brazilian equity market.

Figure 25 – Bloomberg's BETA function for WEG

(source: Bloomberg Terminal, March 2024)

Beta, which measures the volatility of WEG's stock relative to the market ($\beta = \frac{Covariance(RW,Rm)}{Variance(Rm)}$, with *Rm* being the market return and *Rw* WEG's return), was determined based on WEG's historical price movements in relation to the Ibovespa, as shown in Figure 25. This raw beta captures the sensitivity of WEG's stock price to movements in the broader Brazilian stock market, indicating the stock's relative risk compared to the market as a whole.

Notably, the decision was made not to employ the S&P 500 index and U.S. 10-year Treasury bond rates, combined with an added country risk premium for Brazil, as is common in some valuations. This choice was driven by a desire to more accurately capture the idiosyncratic risks and characteristics of the Brazilian stock and bond markets, rather than applying a more global perspective that might not fully account for local market dynamics.

By integrating these localized inputs for the risk-free rate, market return, and beta, the cost of equity for WEG S.A. reflects the specific expectations and risk perceptions of investors in the Brazilian market. This tailored approach ensures that the valuation is grounded in the realities of WEG's operational and financial environment, providing a more nuanced understanding of the equity cost in the context of WEG's valuation.

6.7 PERPETUITY

In the valuation process, particularly when calculating the terminal value or perpetuity, a critical assumption is the long-term growth rate. For WEG S.A., this projection adopted the 2028 world GDP growth estimate provided by Itaú (as seen in Figure 13) of 3% as the growth factor. This decision rests on a broad assumption that WEG's growth

could align with global economic trends, given its international presence and diverse market operations.

Using a global GDP growth rate as a proxy for WEG's perpetual growth rate, however, comes with its limitations. Primarily, it homogenizes the company's growth potential with that of the global economy, which might not accurately reflect WEG's specific opportunities or challenges. Additionally, this approach implicitly assumes indefinite global economic expansion, a premise that, while useful for modeling purposes, might not hold true over the long run.

Considering alternative growth rates, such as projecting a scenario of zero growth or using Brazil's GDP growth rate, could also introduce biases. Zero growth might be overly pessimitics about WEG's potential in capturing market opportunities and technological advancements. Conversely, anchoring the growth rate to Brazil's GDP could exaggerate the influence of local economic conditions on WEG's global operations.

Between these imperfect options, the choice use the world GDP growth estimate emerges as the most pragmatic but not the most conservative. It offers a balanced outlook that acknowledges WEG's global market integration while avoiding the extremes of undue pessimism or localized optimism. Despite its shortcomings, this method provides a standardized benchmark for perpetuity growth, aligning with broader valuation practices where precise forecasting remains challenging. This approach, while not without critique, aims to offer a reasonable basis for estimating WEG's terminal value in the absence of a more tailored and potentially more accurate growth projection.

6.8 ENTERPRISE VALUE AND EQUITY VALUE

The valuation process culminated in the calculation of WEG S.A.'s Enterprise Value (EV) through Equation (1) and Equity Value, integrating the preceding analysis and financial projections. Through the Discounted Cash Flow (DCF) method, and taking into account the variables and assumptions discussed, the valuation yields an Equity Value per share (i.e. fair value) for WEG of R$42.74, as shown in the figure below. This valuation suggests a potential upside of 15.9% from the utilized closing price of R$36.90, indicating that WEG's shares may be undervalued based on the DCF analysis.

Included in the analysis is a sensitivity table, depicted in Figure 27, that assesses the impact of variations in key inputs, specifically the growth rate and the WACC, on WEG's valuation. This sensitivity analysis underscores the importance of these variables in the valuation outcome and provides insight into the range of potential values for WEG under different scenarios.

However, several critical assumptions underpinning this valuation warrant cautious interpretation. Among these, the perpetuity growth rate, predicated on global GDP forecasts, represents a considerable uncertainty. Short to medium-term economic down-

DCF	$
PV of Cashflows	R$ 39.236,30
PV of Perpetuity Value	R$ 136.948,35
Firm Value	R$ 176.184,65
Net Debt	-R$ 3.689,26
Minority	R$ 512,69
Equity Value	R$ 179.361,23
Number of shares	4195,2
Price per share	R$ 42,75
Current price (02/27/2024)	R$ 36,90
Upside	15,9%

Figure 26 – Discounted Cash Flows Final Calculations

		WACC				
		8,92%	9,42%	9,92%	10,42%	10,92%
g	2,50%	R$ 47,07	R$ 43,51	R$ 40,43	R$ 37,75	R$ 35,38
	2,75%	R$ 48,65	R$ 44,84	R$ 41,56	R$ 38,72	R$ 36,23
	3,00%	R$ 50,36	R$ 46,27	R$ 42,78	R$ 39,76	R$ 37,13
	3,25%	R$ 52,22	R$ 47,82	R$ 44,09	R$ 40,88	R$ 38,09
	3,50%	R$ 54,26	R$ 49,50	R$ 45,50	R$ 42,07	R$ 39,11

Figure 27 – Sensitivity Analysis

turns or a long-term cessation in global economic growth could significantly deviate actual growth from the estimates, thereby impacting WEG's terminal value.

The revenue growth projection, set at 7%, also introduces variability given recent fluctuations. Unforeseen volatility in WEG's markets could lead to divergences from this growth trajectory.

The cost of debt is another area of potential fluctuation, sensitive to changes in interest rates and foreign exchange rates. Given WEG's substantial foreign debt, shifts in these financial conditions could alter the cost structure. The assumption of a constant capital structure and perpetuity exchange rates, though necessary for modeling, may not hold over time, adding further to the model's uncertainties.

The cost of equity calculation informed by a period characterized by unusually high Brazilian interest rates relative to those in the rest of the world, combined with a period where the Ibovespa experienced an annualized growth of approximately 10%, and WEG itself delivered a remarkable 25% annualized return with dividends reinvested. Such exceptional performance significantly influenced the Beta used in the model. However, projecting forward, this rate of return may not be sustainable, potentially

showing that the cost of equity estimate was optimistic.

Finally, WEG's cost base could either decrease as the company matures and optimizes its operations or increase due to fluctuations in commodity prices.

Given these considerations, the model's output—while informed by thorough analysis and best-available data—should be viewed as one of several potential outcomes. The identified weak points underscore the inherent uncertainties in financial modeling, particularly for a company like WEG with diverse global operations and exposure to a wide range of market and economic variables. This valuation thus provides a framework for understanding WEG's potential market value, acknowledging the dynamic factors that could influence its financial future.

6.9 MULTIPLES VALUATION

In the final analytical phase before the conclusion, a dive into a multiples valuation was done, contrasting WEG S.A.'s current multiples against those projected should the stock price reach R$ 42,75, in comparison with its peers, which were described in the section 5.5. This comparison reveals that at its current price of R$ 36,9 and even at the hypothesized price of R$ 42,75, WEG appears overvalued relative to the broader industry, with execption to its price-to-earnings (P/E) ratio. All the companies multiples can be seen in the figure below.

Players	P/E	EV/EBITDA	P/S	P/BV
1 Mitsubishi Electric Corp	18,94	9,81	0,99	1,47
2 Siemens AG	18,35	13,68	1,81	3,07
3 Schneider Electric SE	28,79	17,27	3,28	4,45
4 Eaton Corp PLC	33,91	21,10	4,86	5,93
5 Atlas Copco AB	31,12	19,28	4,89	9,54
6 Illinois Tool Works Inc	27,28	19,10	4,89	26,19
7 Parker-Hannifin Corp	25,34	17,56	3,45	6,05
8 Emerson Electric Co	27,90	20,75	3,79	2,92
9 AMETEK Inc	31,61	21,13	6,27	4,74
10 Cummins Inc	52,82	14,95	1,13	4,36
Top 10 Players Average	29,61	17,46	3,54	6,87
Top 5 Players Average	26,22	16,23	3,17	4,89
6-10 Players Average	32,99	18,70	3,91	8,85
WEG SA Actual Multiples	26,87	21,32	4,75	8,90
WEG SA Multiples if trading at R$ 42,75	31,12	24,85	5,50	10,31
Top 10 Players Average in Comparisson to WEG Actual Multiples (%)	91%	122%	134%	129%
Top 5 Players Average in Comparisson to WEG Actual Multiples (%)	102%	131%	150%	182%
Top 6-10 Players Average in Comparisson to WEG Actual Multiples (%)	81%	114%	122%	101%
Top 10 Players Average in Comparisson to WEG Multiples if R$ 42,75 (%)	105%	142%	156%	150%
Top 5 Players Average in Comparisson to WEG Multiples if R$ 42,75 (%)	119%	153%	174%	211%
Top 6-10 Players Average in Comparisson to WEG Multiples if R$ 42,75 (%)	94%	133%	141%	116%

Figure 28 – Multiples

Specifically, WEG's actual P/E multiple suggests a valuation that aligns with more mature companies in the sector, which traditionally project modest growth. This alignment shows that market expectations for WEG's earnings growth are more similar to those for established, mature companies—among the top 5 by market cap.

However, when the lens shifts to consider WEG's P/E multiple at the speculative price of R$ 42,75, the company begins to edge towards overvaluation relative to these mature companies. In contrast, this adjusted multiple brings WEG closer to being

fairly valued when compared with the bottom 5 companies by market cap, which are anticipated to experience higher growth rates. This tier of companies, characterized by their higher growth expectations, frames WEG in a different light, suggesting a market sentiment that WEG's future earnings growth might be simillar to these more agile and rapidly expanding entities.

This nuanced multiple valuation analysis underscores a pivotal market sentiment: WEG is show to be on the verge of transitioning from being perceived in line with mature, slow-growth entities to a company capable of capturing higher growth as its more rapidly evolving smaller peers - if considered only P/E. However, this transition is not without its valuation challenges, as evidenced by the disparity in its valuation metrics. This disparity highlights the complexity of valuing companies like WEG that stand between the divide of stable, mature growth and the potential for more significant expansion.

7 CONCLUSION

In concluding this extensive analysis of WEG S.A., this thesis embarked on a comprehensive valuation of the company using the Discounted Cash Flow (DCF) method. It started with a literature review, laying the theoretical background for subsequent analyses.

Following the theoretical background, the methodology chapter detailed the approach taken to project the company's future financial outcomes. This involved not only a review of WEG S.A.'s historical financial performance but also an examination of the broader capital goods sector. Insights into economic, behavioral, technological, and environmental trends were gleaned through sectoral studies, particularly focusing on the Industrial Electro-Electronic Equipment and Energy Generation, Transmission & Distribution sectors, which are central to WEG's business activities.

An in-depth overview of WEG S.A. provided a strategic and competitive analysis of the company. Utilizing information from a variety of sources, including WEG's financial statements, investor presentations, and earnings calls, this analysis painted a comprehensive picture of WEG's business model, competitive advantages, and strategic positioning.Along with a competitor analysis done to gauge WEG's standing in the market.

Then, the Discounted Cash Flow (DCF) valuation done, utilizing conservative historical averages, projected an enterprise value leading to a fair value stock price of R$ 42,74, compared to the closing price of R$ 36,90 in February 27th. This indicates a potential upside of 15.9%, suggesting that WEG's stock presents an opportunity for growth based on the DCF model used. However, it's imrpotant to recognize the methodological considerations and assumptions that underpin this valuation, which may not fully outline the company's specific trajectory.

The cost of capital analysis, incorporating a review of WEG's cost of equity and debt, provided insight into the financing dynamics at play. Specifically, the cost of equity was informed by a CAPM model using a raw beta reflective of WEG's volatility compared to the Ibovespa, with historical returns on the Brazilian bond rate serving as the risk-free rate.

The multiples valuation compared WEG's market metrics against its industry peers. With the actual stock price and the calculated fair value of R$ 42,74, WEG appeared overvalued compared to the industry, except in the Price to Earnings (P/E) ratio, where WEG's current multiple positioned it as fairly valued among more mature companies expecting lesser growth. This analysis suggests the market perceives WEG's earnings growth potential to align more closely with established firms. However, at the fair value price, WEG's P/E multiple edges towards overvaluation relative to these mature peers, yet nears fair valuation against smaller companies anticipating higher

growth rates.

In synthesizing the findings from the DCF valuation, cost of capital considerations, and multiples analysis, this thesis provides a comprehensive financial overview of WEG S.A. While highlighting WEG's potential for sustained value creation, it also brings attention to critical areas of uncertainty that could impact future valuations, such as the assumptions underlying perpetuity growth rates, revenue projections, and the effects of global economic conditions on cost factors.

In essence, this analysis of WEG S.A. articulates the complexities involved in valuing a dynamic and growing entity within the global marketplace. By offering a blend of conservative financial projections, strategic insights, and comparative market analysis, this conclusion underscores both the opportunities and challenges facing WEG. As the company progresses, its journey will undoubtedly continue to offer valuable lessons for investors, analysts, and stakeholders, keen on understanding the intricacies of corporate valuation in an ever-evolving economic landscape.

Further studies could be done utilizing different and more complex approaches to base the projections, such as: indirect growth drivers of revenue as energy demand, using a multi-factor model for the historical β, using convex optimization for the historical β, modelling the future exchange rates with inflation differentials and others. Although more complex, those may not bring additional precision to the model and can possibly overcomplicate it decreasing the possibility to read its outputs intuitively.

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APPENDIX A – MODEL PAGES

DCF Valuation Model WEG S.A.
Assumption
Formula result
Sourced from worksheet

Figure 29 – Model Cover

IS WEGE3	2018 Y	2019 Y	2020 Y	2021 Y	2022 Y	2023 Y
Revenue	**$11.970,09**	**$13.347,43**	**$17.469,56**	**$23.563,34**	**$29.904,72**	**$32.503,60**
Other Operating Income	**$22,66**	**$30,28**	**$46,37**	**$422,15**	**$147,36**	**$155,47**
Total Revenue	**$11.992,75**	**$13.377,71**	**$17.515,93**	**$23.985,49**	**$30.052,08**	**$32.659,07**
Cost of Revenue	$8.500,82	$9.394,17	$12.032,05	$16.602,38	$21.209,24	$21.702,74
Gross Profit	$3.491,93	$3.983,55	$5.483,88	$7.383,11	$8.842,85	$10.956,33
Operating Expenses	$1.978,45	$2.132,25	$2.663,55	$3.507,28	$3.760,41	$4.473,35
Operating Income (Loss)	$1.513,48	$1.851,30	$2.820,32	$3.875,84	$5.082,44	$6.482,98
Non-Operating (Income) Loss	$6,06	$32,85	$65,81	($171,69)	($64,06)	($128,79)
Interest Expense, Net	($150,36)	($33,69)	($8,04)	($221,55)	($254,01)	($525,49)
Interest Expense	$200,06	$162,54	$76,84	$51,97	$78,37	$150,06
Interest Income	$350,41	$196,23	$84,89	$273,52	$332,38	$675,56
Foreign Exch (Gain) Loss	$982,90	$151,29	$77,58	($54,46)	$40,47	$267,13
(Income) Loss from Affiliates	($3,43)	($10,44)	($3,87)	$0,00	$0,00	($0,11)
Other Non-Op (Income) Loss	($823,06)	($74,31)	$0,13	$104,32	$149,49	$129,69
Pretax Income (Loss), Adjusted	$1.507,42	$1.818,45	$2.754,52	$4.047,53	$5.146,49	$6.611,76
Abnormal Losses (Gains)	$9,88	$14,00	$7,87	($282,51)	$30,85	$20,96
Pretax Income (Loss), GAAP	$1.497,54	$1.804,45	$2.746,65	$4.330,04	$5.115,64	$6.590,80
Income Tax Expense (Benefit), GAAP	$153,39	$172,00	$350,69	$672,56	$842,77	$723,18
Income (Loss) Incl. MI, GAAP	$1.344,15	$1.632,46	$2.395,96	$3.657,48	$4.272,87	$5.867,62
Minority Interest, GAAP	$5,83	$17,87	$55,08	$71,53	$64,79	$135,95
Net Income, GAAP	$1.338,32	$1.614,58	$2.340,87	$3.585,95	$4.208,08	$5.731,67
D&A	$317,02	$396,78	$451,36	$520,18	$565,56	$628,04
EBITDA	$1.830,51	$2.248,08	$3.271,68	$4.396,01	$5.647,99	$7.111,02

Figure 30 – Income Statement used as source

BS WEGE3	2018 Y	2019 Y	2020 Y	2021 Y	2022 Y	2023 Y
Total Assets						
+ Cash, Cash Equivalents & STI	$3.529,89	$3.390,27	$4.484,93	$3.217,14	$4.982,83	$7.081,22
+ Accounts & Notes Receiv	$2.440,84	$2.747,08	$3.417,25	$4.317,39	$5.614,42	$6.070,56
+ Inventories	$2.458,41	$2.817,13	$3.737,53	$6.497,05	$7.644,36	$7.116,29
+ Other ST Assets	$1.009,44	$806,42	$916,43	$1.914,37	$1.411,60	$1.294,25
Total Current Assets	**$9.438,58**	**$9.760,90**	**$12.556,14**	**$15.945,95**	**$19.653,21**	**$21.562,31**
+ Property, Plant & Equip, Net	$3.541,95	$3.981,18	$4.877,21	$5.504,77	$6.282,65	$7.294,84
+ Property, Plant & Equip	$6.846,84	$7.587,26	$9.013,42	$10.290,12	$11.480,12	$12.632,62
- Accumulated Depreciation	$3.304,89	$3.606,08	$4.136,21	$4.785,35	$5.197,47	$5.337,78
+ LT Investments & Receivables	$0,56	$0,00	$0,00	$0,00	$12,29	$10,70
+ Other LT Assets	$2.418,75	$1.945,56	$2.494,54	$2.482,07	$2.186,51	$2.628,42
Total Noncurrent Assets	**$5.961,27**	**$5.926,74**	**$7.371,75**	**$7.986,84**	**$8.481,45**	**$9.933,96**
Total Assets	**$15.399,85**	**$15.687,64**	**$19.927,90**	**$23.932,79**	**$28.134,66**	**$31.496,27**
Liabilities & Shareholders' Equity						
+ Payables & Accruals	$1.336,93	$1.617,07	$2.242,57	$3.346,46	$3.737,30	$3.671,80
+ Accounts Payable	$842,96	$839,88	$1.249,37	$2.120,34	$2.036,22	$2.190,09
+ Accrued Taxes	$88,18	$134,51	$240,47	$279,27	$459,65	$483,27
+ Interest & Dividends Payable	$165,44	$145,38	$136,01	$195,27	$361,84	$482,90
+ Other Payables & Accruals	$240,35	$497,30	$616,72	$751,58	$879,60	$515,54
+ ST Debt	$2.049,09	$985,54	$706,28	$1.125,31	$2.410,85	$2.243,20
+ Other ST Liabilities	$1.647,98	$1.888,42	$2.933,20	$3.456,12	$4.114,72	$5.304,69
Total Current Liabilities	**$5.034,00**	**$4.491,02**	**$5.882,04**	**$7.927,88**	**$10.262,88**	**$11.219,69**
+ LT Debt	$1.723,02	$1.502,27	$1.267,83	$986,32	$1.598,47	$1.148,76
+ Other LT Liabilities	$789,57	$764,36	$847,73	$1.007,92	$1.024,96	$1.273,04
Total Noncurrent Liabilities	**$2.512,59**	**$2.266,63**	**$2.115,55**	**$1.994,23**	**$2.623,43**	**$2.421,81**
Total Liabilities	**$7.546,59**	**$6.757,65**	**$7.997,60**	**$9.922,12**	**$12.886,31**	**$13.641,49**
+ Share Capital & APIC	$5.514,13	$5.517,37	$5.516,03	$5.518,08	$6.520,35	$6.522,35
+ Common Stock	$5.514,13	$5.517,37	$5.516,03	$5.518,08	$6.520,35	$6.522,35
- Treasury Stock	$15,26	$11,42	$15,78	$11,22	$18,74	$55,98
+ Retained Earnings	$1.133,12	$2.059,14	$3.512,41	$5.346,60	$6.409,90	$9.579,28
+ Other Equity	$1.082,28	$1.152,15	$2.550,51	$2.751,50	$1.923,29	$1.296,44
Equity Before Minority Interest	$7.714,27	$8.717,25	$11.563,17	$13.604,97	$14.834,80	$17.342,09
+ Minority Interest	$138,98	$212,74	$367,13	$405,70	$413,56	$512,69
Total Equity	**$7.853,26**	**$8.929,99**	**$11.930,30**	**$14.010,67**	**$15.248,36**	**$17.854,78**
Total Liabilities & Equity	**$15.399,85**	**$15.687,64**	**$19.927,90**	**$23.932,79**	**$28.134,66**	**$31.496,27**

Figure 31 – Balance Sheet used as source

IS Assumptions

R$ in millions	2018	2019	2020	2021	2022	2023	2024e	2025e	2026e	2027e
Revenue	$11.992,75	$13.377,71	$17.515,93	$23.985,49	$30.052,08	$32.659,07	$34.863,18	$37.216,04	$39.727,69	$42.408,85
Growth (yoy)%	1,7%	11,5%	30,9%	36,9%	25,3%	8,7%	7%	7%	7%	7%
Other Operating Income	$22,66	$30,28	$46,37	$422,15	$147,36	$155,47	$137,38	$137,38	$137,38	$137,38
Growth (yoy)%	0,50%	33,6%	53,1%	810,4%	-65,1%	5,5%	0%	0%	0%	0%
Cost of Revenue	$ 8.500,82	$ 9.394,17	$ 12.032,05	$ 16.602,38	$ 21.209,24	$ 21.702,74	$ 24.174,32	$ 25.805,81	$ 27.547,40	$ 29.406,53
% of revenue	71%	70%	69%	69%	71%	66%	69%	69%	69%	69%
Operating Expenses	-$ 1.978,45	-$ 2.132,25	-$ 2.663,55	-$ 3.507,28	-$ 3.760,41	-$ 4.473,35	-$ 5.140,86	-$ 5.487,81	-$ 5.858,17	-$ 6.253,53
% of revenue	-16%	-16%	-15%	-15%	-13%	-14%	-15%	-15%	-15%	-15%
D&A	$317,02	$396,78	$451,36	$520,18	$565,56	$628,04	$822,77	$878,30	$937,57	$1.000,85
% of revenue	2,6%	3,0%	2,6%	2,2%	1,9%	1,9%	2,4%	2,4%	2,4%	2,4%
Interest Expense	$200,06	$162,54	$76,84	$51,97	$78,37	$150,06	$160,77	$147,60	$144,27	$144,24
% of Total Debt	5%	7%	4%	2%	2%	4%				
Income Tax Expense (Benefit), GAAP	$153,39	$172,00	$350,69	$672,56	$842,77	$723,18	$736,99	$788,59	$842,32	$899,22
% of EBT	10%	10%	13%	16%	16%	11%	13%	13%	13%	13%
Interest Income	$350,41	$196,23	$84,89	$273,52	$332,38	$675,56	$533,88	$569,92	$608,38	$649,44
% of revenue	3%	1%	0%	1%	1%	2%	2%	2%	2%	2%
Foreign Exch (Gain) Loss	$982,90	$151,29	$77,58	($54,46)	$40,47	$267,13	$609,83	$650,98	$694,92	$741,81
% of revenue	8%	1%	0%	0%	0%	1%	2%	2%	2%	2%
(Income) Loss from Affiliates	($3,43)	($10,44)	($3,87)	$0,00	$0,00	($0,11)	($7,50)	($8,00)	($8,54)	($9,12)
% of revenue	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other Non-Op (Income) Loss	($823,06)	($74,31)	$0,13	$104,32	$149,49	$129,69	($353,76)	($377,63)	($403,12)	($430,33)
% of revenue	-7%	-1%	0%	0%	0%	0%	-1%	-1%	-1%	-1%
Abnormal Losses (Gains)	$9,88	$14,00	$7,87	($282,51)	$30,85	$20,96	($45,27)	($48,32)	($51,58)	($55,06)
% of revenue	0%	0%	0%	-1%	0%	0%	0%	0%	0%	0%
Minority Interest, GAAP	$5,83	$17,87	$55,08	$71,53	$64,79	$135,95	$82,90	$88,50	$94,47	$100,85
% of revenue	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Figure 32 – Income Statement Assumptions

BS Assumptions

R$ in millions	2018	2019	2020	2021	2022	2023	2024e	2025e	2026e	2027e
Assets										
Accounts Receivable	$2.440,84	$2.747,08	$3.417,25	$4.317,39	$5.614,42	$6.070,56	$6.749,88	$7.205,42	$7.691,71	$8.210,81
Account Receivable Days	74,29	74,95	71,21	65,70	68,19	67,84	69,70	69,70	69,70	69,70
Inventory	$2.458,41	$2.817,13	$3.737,53	$6.497,05	$7.644,36	$7.116,29	$7.825,20	$8.353,31	$8.917,06	$9.518,86
Inventory Days	105,56	109,46	113,38	142,84	131,56	119,68	116,53	116,53	116,53	116,53
PP&E	$3.541,95	$3.981,18	$4.877,21	$5.504,77	$6.282,65	$7.294,84	$7.669,90	$8.187,53	$8.740,09	$9.329,95
as a % of revenue	30%	30%	28%	23%	21%	22%	22%	22%	22%	22%
Other ST Assets	$1.009,44	$806,42	$916,43	$1.914,37	$1.411,60	$1.294,25	$2.091,79	$1.860,80	$1.589,11	$1.272,27
as a % of revenue	8%	6%	5%	8%	5%	4%	6%	5%	4%	3%
Other LT Assets	$2.418,75	$1.945,56	$2.494,54	$2.482,07	$2.186,51	$2.628,42	$2.091,79	$1.860,80	$1.589,11	$1.272,27
as a % of revenue	20%	15%	14%	10%	7%	8%	6%	5%	4%	3%
LT Investments & Receivables	$0,56	$0,00	$0,00	$0,00	$12,29	$10,70	$11,43	$12,20	$13,02	$13,90
as a % of revenue	0,00%	0,00%	0,00%	0,00%	0,04%	0,03%	0%	0%	0%	0%
Liabilities										
Accounts Payable	$842,96	$839,88	$1.249,37	$2.120,34	$2.036,22	$2.190,09	$2.451,92	$2.617,40	$2.794,05	$2.982,61
Account Payable Days	36,19	32,63	37,90	46,62	35,04	36,83	36,51	36,51	36,51	36,51
Payables & Accruals (ex- Acc. Payables)	$493,97	$777,19	$993,20	$1.226,12	$1.701,09	$1.481,71	$2.091,79	$2.046,88	$1.986,38	$1.908,40
as a % of revenue	4%	6%	6%	5%	6%	5%	6%	6%	5%	5%
ST Debt	$2.049,09	$985,54	$706,28	$1.125,31	$2.410,85	$2.243,20	$2.243,20	$2.243,20	$2.243,20	$2.243,20
as a % of revenue	17%	7%	4%	5%	8%	7%	*flat*	*flat*	*flat*	*flat*
Other ST Liabilities	$1.647,98	$1.888,42	$2.933,20	$3.456,12	$4.114,72	$5.304,69	$5.662,70	$6.140,65	$6.753,71	$7.421,55
as a % of revenue	14%	14%	17%	14%	14%	16%	16%	17%	17%	18%
LT Debt	$1.723,02	$1.502,27	$1.267,83	$986,32	$1.598,47	$1.148,76	$1.148,76	$1.148,76	$1.148,76	$1.148,76
as a % of revenue	14%	11%	7%	4%	5%	4%	*flat*	*flat*	*flat*	*flat*
Other LT Liabilities	$789,57	$764,36	$847,73	$1.007,92	$1.024,96	$1.273,04	$1.358,96	$1.450,67	$1.548,57	$1.653,08
as a % of revenue	7%	6%	5%	4%	3%	4%	4%	4%	4%	4%

Figure 33 – Balance Sheet Assumptions

R$ in millions	2018	2019	2020	2021	2022	2023	2024e	2025e	2026e	2027e	2028e
Revenue	$ 11.992,75	$ 13.377,71	$ 17.515,93	$ 23.985,49	$ 30.052,08	$ 32.659,07	$ 34.863,18	$ 37.216,04	$ 39.727,69	$ 42.408,85	$ 45.270,95
Other Operating Income	$ 22,66	$ 30,28	$ 46,37	$ 422,15	$ 147,36	$ 155,47	$ 137,38	$ 137,38	$ 137,38	$ 137,38	$ 137,38
Total Revenue	$ 12.015,40	$ 13.407,99	$ 17.562,30	$ 24.407,65	$ 30.199,44	$ 32.814,53	$ 35.000,56	$ 37.353,42	$ 39.865,07	$ 42.546,23	$ 45.408,33
Cost of Revenue	$ 8.500,82	$ 9.394,17	$ 12.032,05	$ 16.602,38	$ 21.209,24	$ 21.702,74	$ 24.174,32	$ 25.805,81	$ 27.547,40	$ 29.406,53	$ 31.391,13
Gross Profit	$ 3.514,59	$ 4.013,82	$ 5.530,25	$ 7.805,27	$ 8.990,21	$ 11.111,80	$ 10.826,24	$ 11.547,61	$ 12.317,67	$ 13.139,70	$ 14.017,20
Operating Expenses	-$ 1.978,45	-$ 2.132,25	-$ 2.663,55	-$ 3.507,28	-$ 3.760,41	-$ 4.473,35	-$ 5.140,86	-$ 5.487,81	-$ 5.858,17	-$ 6.253,53	-$ 6.675,57
Operating Income (Loss)	$ 1.536,14	$ 1.881,58	$ 2.866,69	$ 4.297,99	$ 5.229,80	$ 6.638,44	$ 5.685,38	$ 6.059,80	$ 6.459,50	$ 6.886,17	$ 7.341,63
Non-Operating (Income) Loss	$ 6,06	$ 32,85	$ 65,81	-$ 171,69	-$ 64,06	-$ 128,79	-$ 124,54	-$ 156,97	-$ 180,86	-$ 202,83	-$ 226,25
Interest Expense, Net	-$ 150,36	-$ 33,69	-$ 8,04	-$ 221,55	-$ 254,01	-$ 525,49	-$ 373,11	-$ 422,32	-$ 464,11	-$ 505,20	-$ 549,03
Interest Expense	$ 200,06	$ 162,54	$ 76,84	$ 51,97	$ 78,37	$ 150,06	$ 160,77	$ 147,60	$ 144,27	$ 144,24	$ 144,24
Interest Income	$ 350,41	$ 196,23	$ 84,89	$ 273,52	$ 332,38	$ 675,56	$ 533,88	$ 569,92	$ 608,38	$ 649,44	$ 693,27
Foreign Exch (Gain) Loss	$ 982,90	$ 151,29	$ 77,58	-$ 54,46	$ 40,47	$ 267,13	$ 609,83	$ 650,98	$ 694,92	$ 741,81	$ 791,88
(Income) Loss from Affiliates	-$ 3,43	-$ 10,44	-$ 3,87	$ 0,00	$ 0,00	-$ 0,11	-$ 7,50	-$ 8,00	-$ 8,54	-$ 9,12	-$ 9,74
Other Non-Op (Income) Loss	-$ 823,06	-$ 74,31	$ 0,13	$ 104,32	$ 149,49	$ 129,69	-$ 353,76	-$ 377,63	-$ 403,12	-$ 430,33	-$ 459,37
Pretax Income (Loss), Adjusted	$ 1.530,08	$ 1.848,73	$ 2.800,89	$ 4.469,68	$ 5.293,85	$ 6.767,23	$ 5.809,92	$ 6.216,77	$ 6.640,36	$ 7.089,00	$ 7.567,88
Abnormal Losses (Gains)	$ 9,88	$ 14,00	$ 7,87	-$ 282,51	$ 30,85	$ 20,96	-$ 45,27	-$ 48,32	-$ 51,58	-$ 55,06	-$ 58,78
Pretax Income (Loss), GAAP	$ 1.520,20	$ 1.834,73	$ 2.793,02	$ 4.752,19	$ 5.263,00	$ 6.746,26	$ 5.855,19	$ 6.265,09	$ 6.691,94	$ 7.144,06	$ 7.626,66
Tax rate	10%	9%	13%	14%	16%	11%	13%	13%	13%	13%	13%
Income Tax Expense (Benefit), GAAP	$ 153,39	$ 172,00	$ 350,69	$ 672,56	$ 842,77	$ 723,18	$ 736,99	$ 788,59	$ 842,32	$ 899,22	$ 959,97
Income (Loss) Incl. MI, GAAP	$ 1.366,80	$ 1.662,73	$ 2.442,33	$ 4.079,63	$ 4.420,23	$ 6.023,08	$ 5.118,19	$ 5.476,50	$ 5.849,62	$ 6.244,83	$ 6.666,69
Minority Interest, GAAP	$ 5,83	$ 17,87	$ 55,08	$ 71,53	$ 64,79	$ 135,95	$ 82,90	$ 88,50	$ 94,47	$ 100,85	$ 107,65
Net Income, GAAP	**$ 1.360,98**	**$ 1.644,86**	**$ 2.387,24**	**$ 4.008,10**	**$ 4.355,44**	**$ 5.887,14**	**$ 5.035,29**	**$ 5.388,01**	**$ 5.755,15**	**$ 6.143,99**	**$ 6.559,04**
D&A	$317,02	$396,78	$451,36	$520,18	$565,56	$628,04	$822,77	$878,30	$937,57	$1.000,85	$1.068,39
EBITDA	$ 1.853,16	$ 2.278,36	$ 3.318,05	$ 4.818,17	$ 5.795,35	$ 7.266,48	$ 6.508,15	$ 6.938,10	$ 7.397,07	$ 7.887,01	$ 8.410,02

Figure 34 – Income Statement Output

R$ in millions	2018	2019	2020	2021	2022	2023	2024e	2025e	2026e	2027e	2028e
Total Assets											
Cash and CE	$3.529,89	$3.390,27	$4.484,93	$3.217,14	$4.982,83	$7.081,22	$7.427,48	$8.905,51	$10.853,06	$13.522,05	$15.775,34
Accounts Receivable	$2.440,84	$2.747,08	$3.417,25	$4.317,39	$5.614,42	$6.070,56	$6.749,88	$7.205,42	$7.691,71	$8.210,81	$8.764,94
Inventory	$2.458,41	$2.817,13	$3.737,53	$6.497,05	$7.644,36	$7.116,29	$7.825,20	$8.353,31	$8.917,06	$9.518,86	$10.161,27
Other ST Assets	$1.009,44	$806,42	$916,43	$1.914,37	$1.411,60	$1.294,25	$2.091,79	$1.860,80	$1.589,11	$1.272,27	$1.131,77
Total Current Assets	$9.438,58	$9.760,90	$12.556,14	$15.945,95	$19.653,21	$21.562,31	$24.094,35	$26.325,04	$29.050,93	$32.523,98	$35.833,33
PP&E	$3.541,95	$3.981,18	$4.877,21	$5.504,77	$6.282,65	$7.294,84	$7.669,90	$8.187,53	$8.740,09	$9.329,95	$9.959,61
LT Investments & Receivables	$0,56	$0,00	$0,00	$0,00	$12,29	$10,70	$11,43	$12,20	$13,02	$13,90	$14,84
Other LT Assets	$2.418,75	$1.945,56	$2.494,54	$2.482,07	$2.186,51	$2.628,42	$2.091,79	$1.860,80	$1.589,11	$1.272,27	$1.131,77
Total Noncurrent Assets	$5.961,27	$5.926,74	$7.371,75	$7.986,84	$8.481,45	$9.933,96	$9.773,11	$10.060,53	$10.342,22	$10.616,11	$11.106,22
Total Assets	$15.399,85	$15.687,64	$19.927,90	$23.932,79	$28.134,66	$31.496,27	$33.867,47	$36.385,57	$39.393,15	$43.140,09	$46.939,55
Liabilities & Shareholders' Equity											
Payables & Accruals (ex- Acc. Payables)	$493,97	$777,19	$993,20	$1.226,12	$1.701,09	$1.481,71	$2.091,79	$2.046,88	$1.986,38	$1.908,40	$1.810,84
Accounts Payable	$842,96	$839,88	$1.249,37	$2.120,34	$2.036,22	$2.190,09	$2.451,92	$2.617,40	$2.794,05	$2.982,61	$3.183,90
ST Debt	$2.049,09	$985,54	$706,28	$1.125,31	$2.410,85	$2.243,20	$2.243,20	$2.243,20	$2.243,20	$2.243,20	$2.243,20
Other ST Liabilities	$1.647,98	$1.888,42	$2.933,20	$3.456,12	$4.114,72	$5.304,69	$5.662,70	$6.140,65	$6.753,71	$7.421,55	$8.148,77
Total Current Liabilities	$5.034,00	$4.491,02	$5.882,04	$7.927,88	$10.262,88	$11.219,69	$12.449,61	$13.048,13	$13.777,33	$14.555,75	$15.386,71
LT Debt	$1.723,02	$1.502,27	$1.267,83	$986,32	$1.598,47	$1.148,76	$1.148,76	$1.148,76	$1.148,76	$1.148,76	$1.148,76
Other LT Liabilities	$789,57	$764,36	$847,73	$1.007,92	$1.024,96	$1.273,04	$1.358,96	$1.450,67	$1.548,57	$1.653,08	$1.764,65
Total Noncurrent Liabilities	$2.512,59	$2.266,63	$2.115,55	$1.994,23	$2.623,43	$2.421,81	$2.507,72	$2.599,43	$2.697,34	$2.801,85	$2.913,41
Total Liabilities	$7.546,59	$6.757,65	$7.997,60	$9.922,12	$12.886,31	$13.641,49	$14.957,33	$15.647,56	$16.474,67	$17.357,60	$18.300,12
+ Share Capital & APIC	$5.514,13	$5.517,37	$5.516,03	$5.518,08	$6.520,35	$6.522,35	$6.522,35	$6.522,35	$6.522,35	$6.522,35	$6.522,35
+ Common Stock	$5.514,13	$5.517,37	$5.516,03	$5.518,08	$6.520,35	$6.522,35	$6.522,35	$6.522,35	$6.522,35	$6.522,35	$6.522,35
- Treasury Stock	$15,26	$11,42	$15,78	$11,22	$18,74	$55,98	$55,98	$55,98	$55,98	$55,98	$55,98
+ Retained Earnings	$1.133,12	$2.059,14	$3.512,41	$5.346,60	$6.409,90	$9.579,28	$11.614,57	$15.386,18	$19.414,78	$23.715,58	$28.306,90
+ Other Equity	$1.082,28	$1.152,15	$2.550,51	$2.751,50	$1.923,29	$1.296,44	$1.296,44	$1.296,44	$1.296,44	$1.296,44	$1.296,44
Equity Before Minority Interest	$7.714,27	$8.717,25	$11.563,17	$13.604,97	$14.834,80	$17.342,09	$19.377,37	$23.148,98	$27.177,59	$31.478,38	$36.069,71
+ Minority Interest	$138,98	$212,74	$367,13	$405,70	$413,56	$512,69	$512,69	$512,69	$512,69	$512,69	$512,69
Total Equity	$7.853,26	$8.929,99	$11.930,30	$14.010,67	$15.248,36	$17.854,78	$19.890,07	$23.661,67	$27.690,28	$31.991,07	$36.582,40
Total Liabilities & Equity	$15.399,85	$15.687,64	$19.927,90	$23.932,79	$28.134,66	$31.496,27	$34.847,39	$39.309,23	$44.164,95	$49.348,67	$54.882,52

Figure 35 – Balance Sheet Output

R$ in millions	2018	2019	2020	2021	2022	2023	2024e	2025e	2026e	2027e
EBIT	$1.536,14	$1.881,58	$2.866,69	$4.297,99	$5.229,80	$6.638,44	$5.685,38	$6.059,80	$6.459,50	$6.886,17
Operating Taxes	$157,35	$179,35	$366,02	$667,58	$861,58	$728,41	$715,62	$762,75	$813,06	$866,76
Operating tax rate	10%	10%	13%	16%	16%	11%	13%	13%	13%	13%
NOPAT	$1.378,79	$1.702,23	$2.500,67	$3.630,41	$4.368,22	$5.910,03	$4.969,76	$5.297,05	$5.646,44	$6.019,40
D&A	$317,02	$396,78	$451,36	$520,18	$565,56	$628,04	$822,77	$878,30	$937,57	$1.000,85
Gross Cash Flow	$1.695,81	$2.099,01	$2.952,03	$4.150,59	$4.933,78	$6.538,07	$5.792,53	$6.175,35	$6.584,01	$7.020,25
Inventory	$ 2.458,41	$ 2.817,13	$ 3.737,53	$ 6.497,05	$ 7.644,36	$ 7.116,29	$ 7.825,20	$ 8.353,31	$ 8.917,06	$ 9.518,86
Accounts Receivable	$ 2.440,84	$ 2.747,08	$ 3.417,25	$ 4.317,39	$ 5.614,42	$ 6.070,56	$ 6.749,88	$ 7.205,42	$ 7.691,71	$ 8.210,81
Accounts Payable	$ 842,96	$ 839,88	$ 1.249,37	$ 2.120,34	$ 2.036,22	$ 2.190,09	$ 2.451,92	$ 2.617,40	$ 2.794,05	$ 2.982,61
Working Capital	$ 4.056,30	$ 4.724,33	$ 5.905,41	$ 8.694,10	$ 11.222,57	$ 10.996,75	$ 12.123,16	$ 12.941,33	$ 13.814,72	$ 14.747,05
Growth (yoy)%		16,47%	25,0%	47,2%	29,1%	-2,0%	10,2%	6,7%	6,7%	6,7%
Variation in Inventory		-$ 358,72	-$ 920,40	-$ 2.759,52	-$ 1.147,31	$ 528,08	-$ 708,91	-$ 528,11	-$ 563,75	-$ 601,80
Variation in Accounts Receivable		-$ 306,24	-$ 670,17	-$ 900,14	-$ 1.297,03	-$ 456,13	-$ 679,33	-$ 455,54	-$ 486,28	-$ 519,10
Variation in Accounts Payable		-$ 3,08	$ 409,49	$ 870,97	-$ 84,12	$ 153,87	$ 261,84	$ 165,48	$ 176,64	$ 188,57
Investment in WC		-$ 668,04	-$ 1.181,08	-$ 2.788,69	-$ 2.528,47	$ 225,81	-$ 1.126,40	-$ 818,17	-$ 873,39	-$ 932,33
Investment in other ST Asset		$ 203,02	-$ 110,01	-$ 997,94	$ 502,77	$ 117,35	-$ 797,55	$ 230,99	$ 271,69	$ 316,84
Investment in other LT Asset		$ 473,20	-$ 548,99	$ 12,47	$ 295,56	-$ 441,91	$ 536,63	$ 230,99	$ 271,69	$ 316,84
Investment in other ST Liabilities		$ 240,43	$ 1.044,78	$ 522,91	$ 658,61	$ 1.189,97	$ 358,01	$ 477,95	$ 613,06	$ 667,84
Investment in other LT Liabilities		-$ 25,20	$ 83,36	$ 160,19	$ 17,04	$ 248,08	$ 85,92	$ 91,71	$ 97,90	$ 104,51
CAPEX		$ 836,01	$ 1.347,39	$ 1.147,74	$ 1.343,44	$ 1.640,23	$ 2.618,76	$ 1.513,28	$ 2.811,37	$ 4.870,81
Other investments		$ 0,56	$ 0,00	$ 0,00	-$ 12,29	$ 1,58	-$ 0,72	-$ 0,77	-$ 0,82	-$ 0,88
Extraordinary Items		$ 166,30	$ 80,54	$ 81,72	-$ 232,65	$ 220,81	$ 417,67	$ 203,30	$ 217,02	$ 231,67
UFCF		$3.325,29	$3.668,02	$2.288,99	$4.977,80	$9.740,00	$7.884,84	$8.104,64	$9.992,54	$12.595,56
Interest Expenses	$200,06	$33,69	$8,04	$221,55	$254,01	$525,49	$373,11	$422,32	$464,11	$505,20
Delta Taxes x Operating taxes	-$ 3,95	-$ 7,35	-$ 15,33	$ 4,98	-$ 18,81	-$ 5,23	$ 21,37	$ 25,84	$ 29,26	$ 32,46
Delta Financial Liabilities		-$ 1.284,31	-$ 513,70	$ 137,52	$ 1.897,69	-$ 617,36	$ 0,00	$ 0,00	$ 0,00	$ 0,00
Delta Equity (incl. Div)		$ 596,73	$ 2.656,05	$ 1.581,33	-$ 630,46	$ 977,86	-$ 851,85	$ 352,72	$ 367,15	$ 388,84
Net Cash Flow		$2.664,05	$5.803,09	$4.234,37	$6.480,24	$10.620,76	$7.427,48	$8.905,51	$10.853,06	$13.522,05

Figure 36 – Unlevered Free Cash Flow

WACC Calculation	
Risk Free Rate	10,85%
Beta	0,626
Market Return	10,59%
Ke	10,69%
Ki	5,23%
Equity Weight	84,04%
Debt Weight	15,96%
Effective Tax	12,59%
WACC	**9,92%**
g	**3,00%**

	2,50%
	2,75%
g	**3,00%**
	3,25%
	3,50%

R$ in millions	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
UFCF	$3.325,29	$3.668,02	$2.288,99	$4.977,80	$9.740,00	$7.884,84	$8.104,64	$9.992,54	$12.595,56	$14.775,39
Discount Factor						0,91	0,83	0,75	0,68	0,62
Present Value						**$7.172,99**	**$6.707,31**	**$7.523,13**	**$8.626,75**	**$9.206,12**

DCF	$
PV of Cashflows	$39.236,30
PV of Perpetuity Value	$136.948,35
Firm Value	**$176.184,65**
Net Debt	($3.689,26)
Minority	$512,69
Equity Value	**$179.361,23**
Number of shares	**4195,2**
Price per share	**$42,75**
Current price (02/27/2024)	**$36,90**
Upside	**15,9%**

Figure 37 – Discounted Cash Flows