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Equity Valuation: TPI Composites Inc.

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Master in Finance

Supervisor:
PhD, Joaquim Paulo Viegas Ferreira de Carvalho, Invited Assistant Professor,
Iscte-IUL

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BUSINESS
SCHOOL

Department of Finance

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Resumo

Este projeto tem como objetivo avaliar a empresa norte-americana TPI Composites, Inc. (TPIC) estimando o seu preço justo por ação a data de 31 de dezembro de 2025. A TPIC é uma fabricante de pás de aerogeneradores, com presença operacional global. Nos últimos anos, a empresa concentrou seus esforços na produção de pás de aerogeneradores, desinvestindo de outros segmentos para reforçar o seu negócio principal. Esse foco renovado, misturado ao atual ambiente econômico e político nos Estados Unidos, com uma elevada volatilidade debido ao risco politico e por condições particularmente desafiadoras para empresas renovavies e de pequeno porte, apresenta um contexto relevante para a realização desta avaliação.

Keywords
TPI Composites; Company Valuation; Free Cash Flow; Adjusted Present Value

JEL Classifications
G12, G30

Summary

This project aims to value the U.S.-based company TPI Composites, Inc. (TPIC) to estimate its fair price per share as of 31 December 2025. TPIC is a leading manufacturer of wind blades with a global operational footprint. In recent years, the company has strategically concentrated its efforts on wind blade production, divesting from other segments to reinforce its core business. This renewed focus, combined with the current economic and political environment in the United States, characterized by increased volatility due to political reasons and particularly challenging conditions for renewables and small-cap stocks, presents a relevant context for conducting this valuation.

Keywords
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1. Introduction

Valuation is one of the most important frameworks of finance as it seeks to ascertain the value of an asset or company through an analysis of its expected cash flows. This is a key concept of investment decision-making as the dislocations between the *fair value* of the assets and their market price is where investors can profit from. The goal of this thesis is to arrive after whether to buy, sell, or hold the stock of the American based wind blade producer TPI Composites.

This thesis is done in the context of an economic environment that has both tailwinds and headwinds for the renewables industry. On the positive side, there is strong governmental and institutional support for renewables as a means to mitigate the effects of climate change, enhance national energy independence, and provide the capacity to power emerging technologies such as artificial intelligence. On the negative side, certain political and economic forces continue to prioritize traditional energy sources, often at the expense of sustainability initiatives. This tension has left the renewables industry, particularly wind power, facing increased volatility. Such environment highlights the importance of valuation, as identifying companies that can capitalize on positive trends and withstand the negative ones is key for investors.

In recent years, TPIC has made the strategic decision to refocus on its core segment: wind blade manufacturing. This has involved divesting from non-core business lines, a move that creates both opportunities and risks. TPIC operates a complex, globally distributed manufacturing network and has faced significant operational and market challenges in recent years. This thesis seeks to estimate whether the company is capable of navigating the current economic, political, social, and technological landscape while providing a return to its shareholders.

The thesis follows a top-down approach and is organized into five chapters. Chapter 1 reviews the theoretical foundations of corporate valuation. Chapter 2 provides a qualitative assessment of TPIC. Chapter 3 examines the macroeconomic and industry environment. Chapter 4 presents a quantitative analysis of the company's recent financial performance. Finally, Chapter 5 develops the valuation assumptions, applies the selected valuation model, and presents the final recommendation.

1. Literature Review

In this section, we'll cover the general theoretical knowledge and methods that are going to be needed for the valuation of TPI Composites (TPIC). Through this literature review, we focus on providing the academic background for this research and the most appropriate models for our valuation goals.

1.1. Fundamentals of valuation

Rational agents make decisions based on the information available; hence, in the context of investments, valuation becomes a key driver for decision making, as it lays out the available information on the assets and their "fair value". As reviewed by Roy (2024) the current landscape in the valuation includes a variety of models and methodologies to arrive at the fair value of assets, considering a set of assumptions. This means that there are different valuation models to represent the different characteristics of assets.

According to Damodaran (2012), there are three main approaches to valuation: discounted cash flows (DCF), relative valuation, and contingent claim valuation. One of the most critical points of valuation is to pick the most adequate model to evaluate the asset, as each model implies a different set of criteria, hence the outcome will vary. These approaches build on the principles of the DCF, which relates the value of the asset to its expected discounted cash flow, whereas the relative valuation ties value to a common variable between a *peer group,* and, finally, the option pricing models to measure the value of assets that share option characteristics.

In this thesis, we will focus on what is common between practitioners in the intrinsic models and the relative valuation models, as they are what would be most correct for the valuation of this company

1.2. Discounted Cashflows methods

As explained by Gao et al. (2019) these models relate the value of a company by discounting the future payoffs received by the investor, such as dividends, residual income, or abnormal earnings growth. These models tend to be considered the correct models required to evaluate companies as they adapt to the fundamentals of the company, allowing to arrive to a conclusion of its *fair value.*

$$P_0 = \frac{D_1}{(1+r_e)} + \frac{D_2 * (1+g)}{(1+r_e)^2} + \cdots + \frac{D_n * (1+g)}{(1+r_e)^n} + \frac{P_n}{(1+r_e)^n} \quad (1)$$

Equation 1 is the generalization of a dividend-paying asset that is held until time n, where the *fair value* of the asset in current monetary value is represented by P_0. The value depends

on the forecast of each period's cash flow. Usually, a dividend D_n is tied to a dividend growth rate g. Additionally, there is a need to estimate a proper discount rate for these cash flows (r_e). This all implies a set of assumptions and forecasts of the fundamentals of the company and of the holding period of the asset (n). By changing the cash flow and its discount rate, we can arrive at other models such as the Free Cash Flow to the Firm (FCFF) and Free Cash Flow to Equity (FCFE).

1.3. Terminal Value

When a DCF model is assumed not to have a holding period, the last element of Equation 1 is replaced by the terminal value component. The resulting equation can be summarized for any cash flow attributable to the investors as follows:

$$P_0 = \frac{CF_1}{(1+r_i)} + \frac{CF_2}{(1+r_i)^2} + \cdots + \frac{CF_n * VR_n}{(1+r_i)^n} \quad (2)$$

$$VR_n = \frac{CF_n * (1+g)}{(r-g)} \quad (3)$$

In equations 2 and 3, the VR_n component represents the Residual Value of the company at time n. The goal of this component is to adjust the indefinite value of the asset to a growth rate g and adjust the growth factor by the discount rate r. As Fernández (2002a) mentions this component could be disregarded beyond a certain point, since its present value fades away as time goes on.

The previous formula assumes a constant growth rate for the terminal value, and as Buttignon (2016) concludes that different methods for estimating the Terminal Value have been created, most of which are variations of the Constant Growth Valuation Model. Hence, most practitioners resort to this model. Additionally, Velez-Pareja (2011) indicates that the practitioner's approach to the growth rate is to set it below the growth of the economy or the industry as to maintain soundness with the economic structure of the country and industry.

1.4. Discount Rate

1.4.1. Cost of Equity

Berk and DeMarzo (2017) state that the initial approach of the cost of equity is usually a single estimation of the expected return of the investors. Nonetheless, it is more common to opt for models such as the Capital Asset Pricing Model (CAPM) as to ascertain the expected return of an asset with similar return characteristics. This model can be estimated as:

$$r_e = r_f + \beta_i * (E[R_m] - r_f) \quad (4)$$

In this formulation, the r_f represents the risk-free rate (usually practitioners utilize the safest asset available, such as the US, German, or Japanese government bonds as a proxy). β_i represents the sensitivity risk of the asset's returns in comparison to the market. $(E[R_m] - r_f)$ represents the excess return of the stock market in comparison to the risk-free rate.

As proposed by Treynor (1993), when its assumptions are considered, the CAPM remains a valuable tool for understanding the relationship between risk and expected return in the financial market. Not only that, but the CAPM model allows practitioners adaptability, such as the one proposed by Torchio and Surana (2014) the model can be further adjusted by more factors tied to the return of the asset, such as the size, represented by the market cap of the company.

1.4.2. Beta

The beta of a stock is a measurement of the systematic risk of the company. It indicates numerically how the returns of the company are related to the general market movement. Betas are usually calculated as the slope of a linear regression between the returns of the stock and the returns of the market. Following the following functional form:

$$r_i = \beta_i * r_m + \alpha \tag{5}$$

Estimating the current beta of the stock is a matter of estimating the regression in equation (4). Nonetheless, as pointed out by Fernández (2002a) the estimation of the cost of equity can vary highly depending on the beta chosen (using an adjusted beta, the industry beta or a backward-looking beta). Additionally, Betas can underestimate risk if they don't consider effects such as the capital structure, i.e., leverage of the company.

1.4.3. Cost of debt

From an insider's perspective, the correct way to calculate the cost of debt is the average weighted interest rate of the financing through borrowing; nonetheless, companies don't tend to provide information on the cost of financing.

There have been different methodologies to estimate the proper cost of financing, such as the one from Koller et al. (2005) who proposes a more practical approach using on the current *Yield to maturity* of the current long-term bonds of the companies to find the current market rate for the financing of this company. This result must be further adjusted for the tax benefits of the service of the debt.

Alternatively, Damodaran (2012) proposes to estimate the cost of debt by calculating it through adding the risk-free rate, the default risk, and the tax advantage associated with the debt. This approach focuses mainly on using an average spread factor related to the current risk assessment (usually a risk rating from a third party) to estimate the cost of debt. Both

approaches differ and can be applied according to the characteristics of the company, such as its debt issuance or its risk characteristics.

1.4.4. Cost of capital

The cost of capital for companies is represented as the weighted average of their financing sources. Commonly called Weighted Average Cost of Capital or WACC, which is represented through the following formula:

$$WACC_i = \left(\frac{E}{D+E} * re\right) + \left(r_d * \frac{D}{D+E} * (1-t)\right) \quad (6)$$

One of the key points of the WACC here is that we're already considering the proposed statements of Modigliani-Miller by including the tax effect of the service of the debt by reducing the cost of financing through debt.

1.5. Adjusted Present Value

The adjusted present value model (APV) is an alternative way of estimating the value of the company. Through the same principle of the DCF models, this model seeks to value the company through the present value of its expected cash flows; nonetheless, the underlying assumptions of this model are different (Myers, 1974).

$$V^L = APV = V^U + PV(Interest\ Tax\ Shield) \quad (7)$$

This model estimates the value of the asset without considering the effect of financial leverage. This part of the valuation is represented through V^U and the second part represents the value benefit of the leverage effect on the value of the company. This model uses a pre-tax WACC for valuation and is commonly used for companies with high variation in their capital structure.

1.6. Multiples Valuation

A common alternative to the DCF models is the valuation multiples approach, which builds upon the assumption of the law of one price by relating the value of the company to other financial or non-financial statistics of the company. As stated by Kaplan and Ruback (1994) these models can be as accurate as regular DCF models, hence a common alternative used by practitioners.

Usually, the multiples are a family of financial ratios that relate to the value of a company, be it by utilizing the Enterprise Value (EV), Earnings, or Price. There are two types of valuation multiples: the equity-based and the invested capital valuation multiple. To consider the use of multiples, their relevance to the asset, and their ability to correlate with its value of the asset are the key.

As proposed by Goedhart et al. (2005), forward-looking multiples should be used as they are more accurate predictors of value and don't include the most recent one-time effects included in current multiples. Some of the most common multiples among practitioners are:

Price-to-Earnings Ratio (PER) can be estimated as shown in Equation 8. The ratio shows the price paid per unit of profit. If the ratio uses the trailing Earnings per share, it's called trailing PER, and it represents the historical relationship of Price and Earnings per share, whereas if calculated via forecasted earnings, it is called Forward PE.

$$PE = \frac{Price_n}{Earnings\ Per\ Share_n} \tag{8}$$

Price-to-Book Value (PB Ratio) can be estimated as shown in Equation 9. The ratio relates the company's current market capitalization to its book value. The book value is derived from the company's balance sheet and represents the net asset value. This ratio is commonly used when intangible assets are not relevant for the capital structure.

$$PB = \frac{Market\ Capitalization_n}{Book\ Value\ of\ Equity_n} \tag{9}$$

Enterprise Value to EBITDA (EV/EBITDA) can be estimated as shown in equation 10. This ratio compares the EV, the sum of its market capitalization, debt, minority interest, and preferred stock minus cash, to the operating earnings, represented by EBITDA. This ratio is commonly used for its comparability of the operational revenue of the company; nonetheless, it does not consider capital investments or working capital, which might affect the long-term value of the asset.

$$EV\ to\ EBITDA\ = \frac{Enterprise\ Value}{EBITDA} \tag{10}$$

Multiples can also be industry-specific, such as the ones mentioned by Fernández (2002b) These types of multiples seek to explain the value of the assets through specific industry metrics. As the paper mentions, these multiples are less common due to their volatility and spread between companies, making it harder to make a fair valuation leveraging them.

The final consideration of relative valuation is the amount of *comparables* assets. Cooper and Lambertides (2023) study the optimal number of peer companies to compare the multiples to. They find that too many *comparables* can worsen the result of the estimations, as there would be both more information and noise. Whereas too few *comparables* can also lead to the issue of mistakenly assuming two assets are comparable when they are not. They conclude that in the American market, the optimal value of peers is 5, as most of the explaining power came from 5 *comparables,* and adding any more doesn't significantly affect the value of the estimations of the value of the asset.

2. Company Profile

We start the valuation of TPI Composites (TPIC) with a qualitative assessment of the company and the industry aimed at understanding the company's current strategic context, market positioning, and role within its industry and key geographies. This section provides an overview of TPI's main business segments, its operational and governance structure, and concludes with a strategic analysis through a SWOT and Porter's Five Forces analysis.

2.1. Business Description

TPI Composites, Inc. is a holding company based in the United States, specializing in the design, manufacturing, and servicing of composite wind blades used in wind turbines for the generation of wind (Eolic) energy. TPI Composites trades on the NASDAQ stock exchange under the ticker symbol *TPIC*. The company has positioned itself as one of the key outsourcing partners within the renewable energy industry, with an estimated 33% share of the global onshore wind turbine blade market[1] as of the end of 2024. (TPI Composites, 2025)

The core of the business of TPI Composites is the manufacture of large-scale, high-performance composite wind blades via being the outsourcing partner of the Original Equipment Manufacturers (OEMs) in the wind energy sector. In addition to the manufacturing segment, TPI Composite also provides servicing to the already existing wind turbines, these services in field servicing of the wind turbines to engineering consultation, and certifications.

TPIC operates with a global manufacturing and service footprint, with facilities and operational presence in Denmark, Germany, India, Mexico, Spain, Turkey, and the United States. The primary manufacturing hubs are in Mexico, India, Turkey, and the U.S., which collectively serve both domestic and international markets. This geographic diversification allows TPIC to provide both manufacturing and services in the closest possible geographical location, lowering the final cost to the client by reducing logistical costs.

The company's origins can be traced back to 1968, when it was founded by Tillotson Pearson Inc., a company focused on the manufacturing of sailboats and powerboats. The firm's expertise in composite materials and structural engineering is the foundation for its pivot in the renewable energy sector in 1999. Following a corporate restructuring in 2004 and a formal name change to TPI Composites, Inc. in 2008, the company solidified its new strategic identity. TPI became a publicly traded entity on July 22, 2016, listing on the NASDAQ stock exchange under the symbol *TPIC.*

[1] Based on total megawatts (MW) of installed capacity.

2.2. Business Segments

TPI Composites operates primarily as an outsourcing partner to companies involved in the production, installation, and operation of wind turbines. In recent years, the firm has focused its efforts exclusively on the wind energy sector. As of the end of 2024, the firm has two business segments: *Wind Blade Manufacturing* and *Field Services*. Of these, approximately 97% of total revenue is derived from the *Wind Blade Manufacturing* segment. Previously, TPI Components operated a third segment dedicated to the manufacturing of automotive components; however, the company divested from it in 2024 due to a strategic shift to concentrate on wind energy.

2.2.1. Wind Blade Manufacture

The core business line of TPI Composites (TPIC) is wind blade manufacturing, a process divided into two main components: *Precision Molding and Assembly Systems,* and the *Wind Blade Production Process*. Manufacturing begins with the design and fabrication of customized molds, developed in close collaboration with clients to meet precise technical specifications. Once the molds are finalized, various composite materials are systematically layered to construct the wind blade structure.

Historically, TPIC has been recognized for its expertise in precision molding, with capabilities spanning a wide range of blade sizes (30 to 80 meters high). A defining feature of this business line is the company's scalable and standardized in-house production model, which enables efficient replication across its global manufacturing facilities. The process is characterized by a high degree of client integration and leverage modular tooling techniques, allowing for flexible adaptation and deployment across various geographies while maintaining consistency in quality and output.

2.2.2. Field Services

As an additional revenue stream, TPI Composites offers Field Services, a business line that leverages TPIC's specialized technical expertise in wind blade design and manufacturing. This segment provides a range of services, including technical maintenance, routine and specialized inspections, as well as improvements and analysis of wind turbine blades. These services are targeted at both OEMs and wind farm operators.

While significantly smaller than the Wind Blade Manufacturing segment in terms of revenue contribution, the Field Services business line serves as a strategic diversification tool, reinforcing TPIC's value proposition across the wind energy lifecycle and offering a degree of resilience against manufacturing-related volatility.

2.2.3. Automotive Business Line

TPI Composites previously maintained a business line dedicated to the automotive sector, building on the company's expertise in composite materials and structural engineering. Originating from the strategic vision of its predecessor, Tillotson Pearson Inc., this segment aimed to serve as an outsourcing partner for major automobile and bus manufacturers. However, based on a strategic realignment, TPI Composites divested its automotive business, effective June 30, 2024. The division was sold to Clear Creek Investments, LLC (currently under the name Senvias™ Inc), as part of the company's decision to refocus exclusively on the wind energy sector. The expected cash flows of this transaction are only expected to affect the 2024 financial year.

2.3. Governance Structure

TPIC is listed on the NASDAQ Stock Exchange and operates in compliance with the NASDAQ Listing Standards, the rules of the US SEC, and the provisions of the Sarbanes-Oxley Act of 2002. These regulatory frameworks establish the foundation of corporate governance, including transparency, accountability, and oversight. In compliance with these regulations, TPIC has established a Board of Directors, which serves as the representative body for shareholders, and several committees and sub-boards, each tasked with overseeing specific operational, strategic, and compliance-related areas.

2.3.1. Board of Directors

The Board of Directors of TPI Composites, Inc. is composed of nine members, each bringing diverse professional backgrounds and expertise. Board candidates may be nominated by any shareholder but must first receive approval from the Nominating and Corporate Governance Committee before being presented for election at the Annual General Meeting. The Board is responsible for overseeing the company's adherence to governance practices and ensuring that decisions made across the organization align with shareholder interests and committee-approved policies.

A key aspect of TPIC's governance structure is its commitment to board independence. The company maintains a separation between the roles of CEO and Chairperson of the Board, ensuring clear distinctions between strategic leadership and corporate oversight. Currently, Steve Lockard serves as the Chairman of the Board, while William Siwek holds the position of President and CEO. The Lead Independent Director is Paul Giovacchini, who previously served as Chairman. The remaining board members are all classified as independent directors.

2.3.1. Executive Management

On the executive management side, William Siwek serves as President and CEO. The executive leadership team is composed of key functional roles, including Ryan Miller (CFO), Theo Gibson (COO), Oscar Witherspoon (CPO), Sian Smith (CIO), and Steven Fishback (General Counsel).

TPIC's organizational structure shows a decentralized operational model, with regional and functional vice presidents. For instance, Nicholas Warchol serves as Vice President of Technology and Engineering, James Schimanski oversees the Global Supply Chain, Thomas Adams on Wind (customer relationships and supply agreements), Gökhan Serdar leads operations in Turkey, and Gordon Davis oversees the Mexico Operations.

This regionally specialized leadership structure enables TPI to maintain tight operational control over its global manufacturing footprint while allowing for greater specialization and strategic delegation across its different product and geographic segments. By assigning dedicated leadership to each critical area, the company enhances both operational efficiency and responsiveness to regional challenges and opportunities.

2.1. Shareholder structure

As of year-end 2024, TPI Composites had a simple equity structure, consisting of ordinary shares listed on the NASDAQ under the ticker *TPIC*. The shares were issued at a par value of $0.01, and the market price as of December 31, 2024, was quoted at $1.89, with approximately 48 million shares outstanding, of which 80% was classified as free floating.

According to the latest available data from TPIC's mid-2025 reporting, the company does not have a controlling shareholder. The top 10 shareholders collectively own 54.42% of the outstanding equity, with the majority being institutional investors. Notable institutional holders include Oaktree Capital Management LP, UBS, and Morgan Stanley. Of particular significance is Oaktree Capital, which acted as a strategic financial partner during the 2023 refinancing of TPIC's mezzanine debt. Additionally, the largest individual shareholder is Zeki Turan Bora, a director at Oaktree Capital, who directly owns 15% of TPIC and indirectly holds an additional 9.06% through his affiliation with Oaktree Capital.

In total, institutional investors control approximately 51% of TPIC's equity. Within this group, 60% are classified as investment advisors and 23% as investment funds. Furthermore, corporate governance policies stipulate that executive management must hold a portion of their compensation in company shares. Combined with variable compensation schemes for senior and middle management, also tied to the ordinary share class, internal ownership accounts for approximately 18% of the total equity.

In 2021, the company issued a mezzanine instrument[2] comprised of the issuance of 350,000 shares of Series A Preferred Stock (for $1,000 per share) and a warrant on the common stock (to buy an aggregate of 4,666,667 shares at $0.01 per share). Note that this instrument affected the capital structure from 2021 until 2023, as in November 2023, TPIC used a debt instrument from Oaktree Capital Management LP. (Senior secured Loan) to do an early execution of the mezzanine instrument.

In summary, TPIC's shareholder structure is diversified and lacks a controlling shareholder. Institutional investors own the majority of the company. And in terms of governance, equity-based compensation schemes for executives and management help attract qualified talent while aligning interests with shareholders. over the past year, the largest shareholder increased his position from 9% to a combined 24% when accounting for both his holdings and his position through Oaktree Capital. This expansion, coupled with Oaktree's role as a key lender to the company, highlights a deeper financial relationship between the companies and may influence future governance and capital allocation decisions in the future.

2.2. Porter Forces

The Five Forces model proposed by Michael Porter in 1979 is a common tool to understand the strategy and role within the sector and industry that the company faces by the company each day. In this analysis, each of the five forces is assessed on a scale from 1 (unfavourable) to 5 (favourable) to find its relative influence. Applying this model to TPI Composites enables us to better understand its competitive positioning within the wind energy supply chain and the broader renewables sector.

2.2.1. Bargaining Power of Customers

We grade the bargaining power of customers as having a *Neutral* effect for TPIC. This is because even though TPI Composites operates in a B2B environment where its customer base is highly concentrated, 77% of its operations are tied to only four clients. The company is somewhat mitigated by having fixed-term agreements that allow the company to have clear visibility of the short-to-medium term production needs and revenue.

Additionally, as an outsourced partner, TPIC has a high degree of customization and technical integration with TPIC, combined with confidentiality agreements and warranties, which makes client switching costly and logistically difficult. Despite the high concentration risk, these additional conditions and incentives reduce the effective bargaining power of customers.

[2] As per GAAP the company must consider the accounting of this instrument as a derivative and an equity or debt instrument depending on the nature of the mezzanine instrument. Due to the likelihood of the execution of the instrument TPIC categorized this as an equity instrument and a derivative.

2.2.2. Bargaining Power of Suppliers

The next category is the power of suppliers, which we grade as *Very Unfavourable*. As a manufacturer, TPIC is in a very niche industry which needs very specific raw material requirements — such as resins and carbon reinforcements — which need very specific quantities and meet specific quality requirements, limiting supplier options and exposing the firm to cost fluctuations. While the company has attempted to mitigate this through volume agreements and strategic procurement from multiple vendors, the limited supplier base still presents a risk.

On the other hand, TPIC also depends on highly specialized engineering talent and R&D resources further underscores the importance of supply-side stability. In the past, the company has already had issues due to unionization and struggled to find specialized labor. Hence, the company is open to increased volatility from its materials and labor costs, compressing margins.

2.2.3. Threat of Substitutes

The next category is the threat of substitutions, which we consider has a *Neutral* impact on TPIC. This category is somewhat split into two different segments: the substitution within the industry of wind energy, where the threat of direct substitutes is low. Once supplier-client relationships are set up, the switching costs, the customization capacities, and technical compatibility issues act as barriers to substitution.

However, at the energy industry level, wind competes with other traditional and renewable sources such as Oil and Gas or solar energy, which tend to be more cost-efficient and technologically mature. While this is an indirect substitution, it could influence clients' long-term production schedules and preferences, especially in markets where regulation favors other sources rather than wind.

2.2.4. Threat of New Entrants

When it comes to new entrants to the wind industry, we consider it *Very Favorable* for TPIC. As with any manufacturer of this size, economies of scale are a key component that already creates a natural barrier to entry. In addition to this, there are other barriers, such as technical know-how and the high degree of integration into clients' operations. TPIC benefits. Making TPIC have a key role in the industry in its home market.

2.2.5. Rivalry Among Existing Competitors

Finally, on the rivalry of competition, we see it as *Unfavorable*. Competition in the wind blade manufacturing space is intense and shaped by a small number of specialized players. TPIC is currently the most specialized independent manufacturer in the US, giving it a distinct strategic

advantage. However, it faces ongoing pressure from vertically integrated OEMs and emerging Chinese manufacturers that are expanding aggressively and competing on cost.

The sector is undergoing consolidation, particularly among OEMs, which could further concentrate the client base and increase pricing pressure on third-party suppliers like TPIC. Regulatory environments also play a pivotal role, as they affect capital availability, credit flows, and demand visibility, especially given the heavy reliance on public policy and decarbonization mandates.

In conclusion, TPI Composites occupies a strategically neutral position within the wind energy sector. The company demonstrates notable strengths in client integration, technical expertise, and domestic market presence, which provide a degree of resilience against customer power and substitution risks. However, it remains exposed to significant external pressures, including supply chain constraints, labor market challenges, intensifying global competition, and indirect substitution from other energy sources. These vulnerabilities highlight TPIC's role as a specialized, yet highly sensitive, player in a capital-intensive and cyclical industry, where operational performance and long-term viability are closely tied to macroeconomic trends and evolving regulatory landscapes.

3. Economic Outlook

3.1. Macroeconomic environment

After the 2020 pandemic, the global economic landscape had a significant transformation. Now the economic environment is shaped by increased geopolitical tensions, structural shifts in global trade, and the increasing relevance of long-term (secular) market dynamics. After 2024, several countries will have changed leadership or are about to, hence we can still expect increased volatility in the markets, and the economies will adjust to this *new* economic environment.

The current market dynamic revolves around the motto higher rates for longer, a stance underpinned by still positive economic activity with inflation that has proven more persistent than initially expected across most major developed economies. Many countries are still transitioning and adapting to this new reality; nonetheless, balancing growth, employment, and inflation is even more of a challenge, complicated by a volatile geopolitical landscape as the world continues its de-globalization trend. As the global economy continues to move toward de-globalization, short-term impacts are likely to pressure down on growth and up on inflation. In the longer term, this shift may fundamentally alter the policy frameworks and economic dynamics of individual countries or economic blocs (Blackrock Inc., 2025).

Even though the United States had a volatile year, the main activity indicators still showed that the economy grew, for example, real GDP showed a year-over-year growth of 2.8%, the year's inflation was 2.9% and the unemployment rate ended the year with 4.1%. The economy is still booming after the pandemic. Nonetheless, the United States will be at the centre stage of the geopolitical risk for the years to come as the Trump presidency has already established its policy of *America First*, reviving the tensions of trade tariffs that first appeared in 2016. This keeps us pointing towards a reinforcement of the idea of a fragmented global economy, where the formation of distinct economic blocs may redefine global trade relationships.

In Europe, economic growth lagged behind that of other regions. In 2024, inflation in the Eurozone outpaced GDP growth, with annual rates of 2.4% and 1.1%, respectively. The ongoing war in Ukraine continues to increase uncertainty over the region, particularly in Central Europe, where key economies such as Germany and France are facing inflationary pressures that are damaging growth. The primary contributors to growth were outside Central Europe, with Portugal and Spain in the lead. Looking ahead, the Eurozone may face increasing pressure to respond to potential shifts in U.S. foreign policy, particularly Trump's trade war, through the implementation of retaliatory tariffs. Additionally, in terms of monetary policy, the expected monetary easing remains low, as fiscal policy is expected to pick up towards defence and strategic investments.

Emerging markets present a mixed outlook. While many of these economies have benefited from elevated commodity prices and ongoing supply chain realignments, they remain highly vulnerable to external shocks such as fluctuations in interest rates set by the FED and the ECB, as well as shifts in the geopolitical landscape of major economies. Volatility across emerging markets is likely to increase as trade tensions between the United States and China intensify, generating ripple effects on growth. In this context, China's economic recovery remains uneven. With a modest annual inflation increase of just 0.2% domestic demand continues to lag. Nevertheless, government-led stimulus efforts have supported overall activity, enabling the Chinese economy to close 2024 with a GDP growth rate of 5%.

3.2. Industry outlook.

In contrast to the broader energy sector — traditionally dominated by companies in oil, gas, coal, and other consumable fuels — the renewable energy sector comprises companies focused on clean energy generation. These companies use renewable sources such as wind, solar, biofuels, geothermal, and hydroelectric power.

Over the last decade, the renewable energy industry has received increasing attention due to growing concerns about climate change. International agreements such as the Paris Agreement and most recently COP28 have established commitments among nations to accelerate the adoption of clean energy. These agreements aim to reshape national energy matrices by 2030, reducing dependency on fossil fuels and enhancing energy security through renewables. International Energy Agency (2024)

According to global energy transition goals proposed by the COP28, the world must install approximately 11,000 gigawatts (GW) of renewable energy capacity by 2030 to mitigate irreversible climate change, in line with the goals of the Paris agreement's target of limiting climate change to 2°C. These goals are demanding for this sector and countries, as achieving these goals requires a 2 to 3 times increase in current renewable energy deployment levels (International Energy Agency, 2025).

Despite these ambitious targets, the renewables sector has been under pressure since the COVID-19 pandemic. As a manufacturing-intensive industry, renewable energy has been heavily affected by supply chain disruptions, logistical bottlenecks, and the ongoing inflationary environment. These challenges have notably slowed the pace of capacity additions in wind and solar energy projects, the two leading segments within the sector.

Recent data from the International Energy Agency (IEA) points to solar energy being the leader of growth in renewable energy capacity expansion, primarily through photovoltaic installations, which have seen the most substantial increases in new capacity. In 2024, solar power grew by approximately 20%, while wind energy grew by 10%, well below the necessary

growth estimated by the IEA to fulfil the 2030 goals. Reflecting its vulnerability to economic pressures and manufacturing constraints.

Following China, Europe and the United States are the other major players in renewable energy. However, both regions face unique structural and political challenges. In the U.S., recent political uncertainty, particularly following the 2024 presidential election, has raised concerns. President Trump has publicly stated his intention to dismantle key policy frameworks that support the sector, including subsidies and incentives established under the Inflation Reduction Act (IRA). The IRA, introduced by the Biden administration, significantly enhanced the financial attractiveness of renewable energy projects through tax incentives and infrastructure investments.

In Europe, the sector faces regulatory and bureaucratic delays, rather than a lack of political will. For example, it can take an average of seven years to fully commission a wind farm due to permitting constraints and planning inefficiencies. Additionally, the short-term structure of renewable auctions limits capacity expansion, while long-term sustainability will depend on strategic government investments in grid infrastructure and electricity distribution systems.

In summary, while the renewable energy sector is poised for substantial long-term growth, it continues to navigate a complex landscape of political, economic, and structural challenges. Within this context, companies like TPI Composites must not only manage macroeconomic pressures but also adapt to evolving policy frameworks and global sustainability commitments.

4. Financial Analysis and Guidance

In this section, we examine TPIC's historical performance, focusing on the period from 2021 through 2024, to assess its financial health and long-term sustainability. To correctly frame this analysis, we start with a short discussion on key corporate events that have had a material impact on

4.1. Recent Corporate Events

In the past years, TPIC has undergone several major changes in both its operations and financial structure. These changes have been both material for the income generation ability of the company:

1) **Iowa blade facility closure (2021):** TPIC closed its Newton, Iowa, wind blade manufacturing facility following the termination of a key production contract with GE Wind. This facility had been a major production hub for the U.S. Segment. However, the relationship with GE Wind continued, as production was relocated to the company's Matamoros, Mexico plant in 2022.
2) **Mezzanine Equity Issuance and Refinancing (2021–2023):** In 2021, TPIC issued Series A Preferred Stock and warrants, raising $350 million via a Payment-in-Kind (PIK) structure to preserve cash and avoid restrictive debt covenants. In 2023, TPIC refinanced this instrument by converting it into a $393 million Senior Loan and 3.9 million common shares, reducing financing costs. The new loan carries an interest rate of 11% (PIK) or 9% (cash-based).
3) **China Operations Restructuring (2022):** TPIC exited the Chinese market by closing its Yangzhou plant, which accounted for its entire Asia segment. This move was driven by increased geopolitical risk and tightening regulatory conditions in China.
4) **Divestment of the Automotive Segment (2023–2024):** TPIC divested its automotive precision molding business, finalizing the transaction in 2024. This divestment marked a strategic decision to fully focus on the wind energy segment.

These corporate events reflect TPIC's attempt to stabilize its operations and ensure short-term survival amid industry-wide disruptions and internal financial pressures. However, they have also raised concerns about the company's long-term positioning and its ability to capitalize on the sector's expected growth. Recognizing this, TPIC formally established a Capital Structure Committee in late 2024, tasked with reviewing and optimizing its financial and operational framework to safeguard future sustainability.

Based on these past developments of TPIC, we can start with the financial analysis by looking at its financial ratios for profitability, liquidity, and solvency, to identify trends and evaluate potential future scenarios relevant to the company's valuation.

4.2. Profitability Analysis

TPI Composites has faced profitability problems from 2021 to 2024. Over this period, the company reported a negative compound annual growth rate (CAGR) of -2.5% in revenues, reflecting reduced production capacity linked to the end of key strategic contracts. TPIC has a global production footprint that they consider as their business segments United States, Mexico, EMEA, and India. Across the board, TPIC revenue is concentrated in the wind blade manufacturing, which has constantly accounted for more than 95% of the net income of the company, as seen in Table 4.1.

Table 4.1

TPIC revenue breakdown by business line

Segment	***2021***	***2022***	***2023***	***2024***
Wind Turbines	95.2%	93.5%	97.3%	97.5%
Services	2.2%	3.6%	2.6%	2.4%
Automotive	2.5%	2.9%	0%	0%
Total	100%	100%	100%	100%

Note. Data from TPIC 10-K form; calculations by the author.

This high reliance on a single business line introduces significant revenue concentration risk, particularly given that most of TPIC's demand originates from the U.S. renewable energy market, and specifically, 77% of sales are dependent on 4 clients. Hence, most of the segments share the same negative trend, due to demand lagging in the US and their exposure to the increased tariff and geopolitical risk in this market. Other segments, such as the EMEA segment, have experienced reduced output due to capacity expansions and plant transitions, which temporarily limit production.

As a capital-intensive manufacturer, TPIC heavily relies on its ability to operate at scale and maintain high plant utilization. Modifying the manufacturing lines or repurposing them for different clients carries several costs, such as the costs related to the goods/services provided (Cost of sale), the costs of initializing new production lines (Startup Costs), and the costs of repurposing existing business lines (Transition Costs). As illustrated in Table 4.2, the total cost of goods sold (COGS) has consistently exceeded revenue, with an average gross margin of -1.81% across the four years. This negative margin profile has been driven by a combination of inflationary pressures, contractual realignment, and cost inefficiencies associated with underutilized or restructured assets.

Table 4.2

Cost of Goods Sold breakdown.

	2021	***2022***	***2023***	***2024***
Cost of sales	1,459,155	1,482,428	1,474,356	1,331,241
Startup costs	0	0	4,399	18,277
Transition costs	50,832	25,668	17,358	34,612
Total Cost of Goods Sold	1,509,987	1,508,096	1,496,113	1,384,130
As a percentage of sales	102.55%	101.99%	104.45%	103.98%

Note. Data from TPIC 10-K form; calculations by the author.

TPIC has reported negative net income in each year since 2021, with losses intensifying in 2024. The firm's EBITDA margin, return on assets (ROA), and return on equity (ROE) have remained consistently negative. The negative trend in profitability metrics, summarized in Table 4, indicates ongoing challenges in TPIC achieving breakeven and raises concerns regarding its long-term sustainability.

Table 4.3

Profitability ratios

	2021	***2022***	***2023***	***2024***
P&L (USD Thousands)	-165,588	-124,208	-177,612	-240,707
P&L as a percentage of sales	-11.25%	-8.40%	-12.40%	-18.08%
EBITDA margin	-10.59%	-1.16%	-10.61%	-15.79%
ROA	-17.32%	-12.33%	-18.46%	-29.94%
ROE	-8.23%	-101.85%	-351.80%	-196.81%

Note. Data from TPIC 10-K form; calculations by the author.

4.3. Liquidity assessment

The lower profitability of TPIC has impacted its capacity to create liquidity, this has been evidenced by the company's capacity to create cash flows, which over the last 4 years have steadily declined. On average, the cash has reduced an average of 2.4% per year, whereas the current liabilities keep increasing.

As shown in Table 4.4, TPIC's current ratio fell from 1.41x in 2021 to 0.94x in 2024, indicating that the company no longer maintains sufficient short-term assets to cover its short-term liabilities. Combining this with the fact that the company has less cash at hand available creates a major weakness for the short-term sustainability of the company.

Additionally, TPIC's working capital position, which turned negative in 2024, falling to -$28.9 million, is currently showing a dependence on external financing sources to continue the day-to-day operations of the company. In response to these pressures, TPIC has established

special credit facilities within certain segments to finance its working capital requirements, which goes against TPIC's long-term viability.

Table 4.4

Liquidity Ratios

	2021	***2022***	***2023***	***2024***
Current ratio	1.41x	1.41x	1.30x	0.94x
Quick Ratio	1.13x	1.17x	1.06x	0.78x
Working Capital [USD Thousand]	191,161	188,581	116,654	-28,878
Net Working Capital to Sales	12.98%	12.75%	8.14%	-2.17%

Note. Data from TPIC 10-K form; calculations by the author.

4.4. Solvency and Leverage Analysis

TPI Composites' declining profitability and tightening liquidity have forced TPIC to rely increasingly on external financing, leading to a significant shift in its capital structure. This reliance has been driven by: 1) the sustained posting of negative net income and 2) continued capital expenditures aimed at restructuring and adapting its manufacturing.

The company's debt portfolio includes a mix of instruments with specific designations, notably the Senior Secured Term Loan — used to extinguish its Series A Preferred mezzanine equity — as well as Convertible Senior Unsecured Notes and Unsecured Financing tied to the EMEA segment. While some of these instruments are oriented toward long-term capacity expansion, others are used to finance working capital requirements, particularly in regions with operational cash shortfalls.

Between 2021 and 2024, TPIC's total debt-to-assets ratio rose from 7.41% to 89.04%, reflecting an aggressive increase in leverage. This aggressive shift into debt financing is straining the capacity of the company to pay in the short term and has led to almost reaching the top of its debt capacity for some segments (currently at 87% in EMEA and India segments). These debt ceilings are closely monitored by management and are controlled as part of other debt instruments' covenants.

The impact of this evolving capital structure is evident in TPIC's interest expense, which has increased at a compound annual growth rate (CAGR) of 60.3% over the period. As shown in Table 4.5, both the interest coverage ratio and debt coverage ratio have deteriorated sharply, reflecting the company's weakening ability to service its debt from operating income.

Table 4.5

Solvency Ratios

	2021	***2022***	***2023***	***2024***
Total debt to assets ratio	7.41%	6.36%	60.34%	89.04%
Debt to Equity ratio	61.21%	121.17%	-396.71%	-165.20%
Coverage ratio	-8.24x	3.99x	-9.93x	-1.14x
Debt Coverage	-5.48x	11.72x	-7.01x	-0.81x

Note. Data from TPIC 10-K form; calculations by the author.

5. Valuation

The valuation model assesses TPIC's financial performance leveraging the last 4 calendar years of financial information (2020-2024) and forecasts the company until 2030. Beyond 2030 we adopt a perpetuity based on projected free cash flows. Given TPIC's current financial condition and the information available in their financial reports, we chose an APV model. This would entail a forecast of the company's operation, revenue, and capital structure for the forecast period. As per our estimations, we cannot use a relative valuation as discussed below.

5.1. Key Forecast Assumptions

The following subsections will shine a light on the assumptions considered in the DCF model that support our estimated share price at the end of calendar year 2025.

5.1.1. Revenue

As stated in Section 2.2, TPIC now operates two business lines following the divestiture of its automotive segment: (1) the design, manufacture, and delivery of wind blades, and (2) on-site servicing of wind turbines and blades. The revenue model is built upon three central assumptions:

1. The company will maintain its strategic focus on wind energy and refrain from spinning off or divesting further business units.
2. The reactivation of its US manufacturing plant will be successful and contribute to production within the projection horizon.
3. Governments will maintain investments in line with COP28 targets to achieve the 1.5°C global warming threshold by 2030, sustaining demand for renewable infrastructure.

Revenue has been projected by region and by business line, covering four key geographies: the US, EMEA, MX, and IN. All except India contribute both manufacturing and servicing revenues. Based on TPIC's production capabilities and investment plans, we estimate a CAGR of 9.84%. This growth rate slightly exceeds the industry´s expected under the assumption of the COP28 goals. We justify this increment on the fact that TPIC's recent capacity expansions in EMEA and continued investment in US facilities, which we believe will lead to market share gains, particularly from the displacement of some OEMs in the market.

In terms of business line composition, we anticipate the servicing segment will slightly decline as a share of total revenue — from 2.47% in 2024 to 1.86% in 2030 — due to limited strategic guidance or investment from management in this area. Conversely, the manufacturing business line is expected to remain the main expansion source as per TPIC's guidance.

When it comes to its geographical split, we believe that the US plants will increase its importance over time, following a similar pattern to the recent IN plants a couple of years ago.

We expect the US plant to come into full capacity in 3 years. The MX segment is projected to remain the most important revenue source, continuing to account for nearly half of total revenues throughout the forecast horizon. This can be summarized in Table 5.1

Table 5.1

Revenue Forecast by Segment

Segment	*2024*	*2025F*	*2026F*	*2027F*	*2028F*	*2029F*	*2030F*
US	20	86	155	161	166	172	178
MX	697	786	856	928	1,000	1,085	1,172
EMEA	448	520	563	605	641	689	734
IN	166	191	206	222	235	252	268
Total Income	1,331	1,583	1,781	1,915	2,042	2,198	2,352

Note. Calculations by the author and data in million USD.

5.1.2. Costs

In terms of costs, we believe that the company will gain some efficiencies going forward due to a more controlled inflationary environment, where inflation will still be present in the long run, but with central banks playing a more active role in keeping it in line. The main risk for this cost segment is the risk of an extended period of time of trade-war that will harm commodity prices.

Additionally, cost improvements will be affected by a sharp reduction in its costs related to its non-controlling operations in China. As the discontinued operations have been mostly phased out of the financial statements, we expect an improvement in the gross margin in the following 2 years as these discontinued operation costs will become marginal. This summarizes the costs growing at a CAGR of 9.1% until 2030.

5.1.3. Operating Expenses

Overall, we believe that TPIC's current operational structure, with headquartered in the US, manufacturing facilities distributed globally, and service and R&D centers located in Europe, provides the company with a high degree of operational efficiency. Our view is supported by the relatively low historical volatility in the OPEX and R&D costs of recent years, including the COVID-19 pandemic. As a result, we project that OPEX will grow in line with revenue until 2030.

5.1.1. Depreciation and CAPEX

Capital expenditures (CAPEX) represent strategic investments in long-term assets that support operational capacity and efficiency. Given TPIC's current plans to reopen its U.S. manufacturing facility and focus on wind energy, we assume a consistent and elevated CAPEX strategy that supports the stabilization and scaling of operations over the forecast period.

Our CAPEX estimations start with company guidance for 2025, which outlines investments in the range of $25–30 million. We adopt the upper bound of this estimate, aligning with the strategic goal of reopening the US plant and the need for renovations of its MX segment. For the forecast period of 2025 to 2030, we project CAPEX above the historical CAPEX-to-sales ratio of approximately, meaning higher than 2%. This can be summarized in Table 5.2, where we can also see that we expect a depreciation rate consistent with historical averages.

Table 5.2

CAPEX and Depreciation forecast

	2024	2025F	2026F	2027F	2028F	2029F	2030F
Net PPE	93.14	117.11	146.60	180.50	217.66	256.96	297.27
Period's depreciation	0.00	-36.03	-42.72	-50.53	-59.48	-69.55	-80.75
Total CAPEX	26.20	33.88	40.77	47.67	54.57	61.46	68.36
CAPEX as % of sales	1.97%	1.89%	2.03%	2.20%	2.37%	2.48%	2.57%

Note. Calculations by the author and data in million USD unless otherwise specified.

5.1.2. Margins

We expect a gradual improvement in TPIC's profitability ratios over the following years; nonetheless, under the current market conditions and based on our estimations, TPIC would still not come back to positive profit until 2030. This slow recovery would be related to the loss of support from the US Inflation Reduction Act (IRA) subsidies which provided key subsidies for the renewables sector and the lack of support of the recent fiscal plans that have been recently approved in the US, making the company lose support and not being able to leverage on the new fiscal rules.

We expect TPIC's profitability to follow a "J-curve" trajectory, with losses gradually narrowing before reaching breakeven as TPIC is expected to have fully absorbed the financial impact of its discontinued operations in China and to have stabilized its most recent capacity expansions, specifically the Turkey plant and the planned expansion of its US plant. Nonetheless, this would not be sufficient to bring it back to profit.

A pivotal period will be 2025–2026, during which a substantial part of the company's debt matures. If TPIC can meet its obligations and refinance under more favourable terms, the reduction in financial expense from refinancing into cheaper debt it should support margin expansion in the following years.

Table 5.3

Forecast of Profitability Margins

Margins	2024	2025F	2026F	2027F	2028F	2029F	2030F
Gross	-4.0%	-3.0%	-2.4%	-1.8%	-1.3%	-0.2%	0.9%
EBIT	-7.9%	-5.8%	-5.4%	-4.7%	-4.3%	-3.0%	-2.1%
EBITDA	-15.8%	-11.9%	-12.5%	-10.4%	-12.9%	-4.5%	-2.7%
Net profit	-18.1%	-11.9%	-12.5%	-10.4%	-12.9%	-4.5%	-2.7%

Note. Calculations by the author

5.2. Valuation Assumptions

As previously mentioned, we decided to evaluate the company through the Adjusted Present Value model (APV). This decision is mainly related to the debt structure of the company. In this section, we discuss the main assumptions of the debt and how that affects our Free cash flow estimation and the discount rate estimation.

5.2.1. Debt Structure

A key consideration on the debt structure is that the company, as of the end of 2024, has a Debt-to-Equity ratio of 165%, meaning that the company is currently over-leveraged, and the current focus of management is to reduce the level of debt in the following years. This would mean that the debt-to-value ratio, a base component of the discount rate calculation, would change in the following years. This is a key assumption of the DCF models, which consider a constant debt/capital structure. Unlike the DCF, APV does allow for a differentiated debt structure on a year-over-year basis; hence, our valuation model leverages that capacity of the APV.

As previously mentioned, the company is currently over-leveraged and is on a path of reducing its outstanding debt. Hence, the first step of our forecast debt structure considers as its basis the information in Table 5.4, which represents the maturity scale reported by the company for the following years.

Table 5.4

Debt Maturity Staircase

	2025	*2026*	*2028*	*2029*
Future aggregate annual principal maturities	131,363	210	441,144	132,500

Note. Sourced from TPIC 10K Forms, data in USD Thousands

We would like to highlight that this maturity scale is being considered fully as a hard assumption of the model; hence, we are assuming that, independently of the debt structure, these payments must be made to ensure the sustainability of the business in the forecast

period. Additionally, it is worth noting that some of the debt instruments were lines of credit that are constantly used based on their credit capacity, and other instruments were bonds and structured loans with covenants tied to them.

If we were to assume that the company pays the debt and doesn't take in new debt to subsist, this would lead to a Debt / Equity (DE) ratio of 5% by 2030. Which would not be a realistic assumption, as the DE ratio in 2024 was -165.20% as mentioned previously. For our debt assumption, we made TPIC's Debt to value ratio gravitate towards the industry's average (manufacturing in renewables as per Bloomberg's classification) of 48.34%. This will lead to the following indebtedness ratio in the forecast period.

Table 5.5

Target Debt-to-Capital Ratio

	2025F	2026F	2027F	2028F	2029F	2030F
Debt-to-Capital Ratio	80.00%	73.67%	67.34%	61.00%	54.67%	48.34%

Currently, the company has not given any guidance on any long-term indebtedness ratio or indication of the "healthy" amount of leverage the company might need to sustain its long-term operations. We do believe that the company needs to come down to the industry's average as a sign of "good faith" to investors, as in the past years the company has not only overcomplicated its debt structure with mezzanine instruments and needed to sell its businesses to continue its operations to survive, hence, we believe returning to the industry's average within the following years is a soft goal of management to gain investor confidence.

Note that there is a significant decrease in the leverage of the company from 2024 to 2025 as the company has the maturity of a debt instrument, which, according to the current covenants of the company, it could not refinance. Hence, we expect the company this year to use most of its cash in paying off this debt.

5.2.2. Dividend Policy

In line with previous years and following the guidance of TPIC's management, we don't expect any dividend payments anytime soon. As per the last financial reporting of the company, management indicated that they view TPIC as a company that is in the process of maturing; hence, having a stock that pays dividends would be counterproductive, as those profits could be reinvested in the business (TPI Composites Inc, 2025). Hence, this model assumes no dividend payments throughout its forecast period.

5.2.3. WACC

Based on our capital structure assumptions, our WACC estimations are as shown in Table 5.6. Note that the difference between the 2 estimations is the tax effect, which was calculated with the average weighted tax rate by the sales mix in 2025 and kept constant. This yields a nominal tax rate of 28.02%.

Table 5.6

Discount Rate per year

WACC	2025F	2026F	2027F	2028F	2029F	2030F
POST-TAX	10.49%	11.25%	12.02%	12.78%	13.54%	14.30%
PRE-TAX	13.04%	13.60%	14.16%	14.72%	15.28%	15.84%

5.2.3.1. Cost of Equity

We estimate our cost of equity through an Adjusted CAPM. This is to better adapt the model for the risk characteristics we see in TPIC. This adjustment to the standard CAPM formula can be summarized in equation 11

$$R_e = R_f + \beta_i * (R_m - R_f) + Size\ Premium + Country\ Risk\ Premium \quad (11)$$

As it is common practice to represent the risk-free rate of the CAPM formula, we refer to the 10-year treasury bonds of the country where the company is located. We believe that the most correct source of representativeness of a risk-free rate for TPIC would be the US 10-year bond yields, as the company's HQ and main demand sources stem from the US. As of 30.06.2025, this rate was 4.55%

To represent the whole component of the market risk premium, we use the difference between the geometric average total return from the S&P500 returns in the last period, from 1928 to 2024, and the average return of the US 10-year bonds in the same period of time. We recovered this information from Damodaran (2025) this component came out to be 8.44%.

For the beta, we considered first the unlevered beta from the manufacturing industry, calculated by Damodaran (2025) This yields a beta of 1.07. We then readjust the beta with the financing structure of TPIC. To add the leverage effect to the industry beta, we picked the methodology from Vélez–Pareja et al. (2008) which leverages the beta according to equation 12, where β_u represents the unlevered beta, $\beta_d$represents the beta of the debt (recovered from Damodaran (2025)), τ represents the weighted average tax rate.

$$\beta_l = \beta_u + \left((\beta_u - \beta_d) * (1 - \tau) * \frac{D}{E}\right) \quad (12)$$

As previously mentioned, this would lead to a different beta per year as we expect the capital structure to change with each year. As follows:

Table 5.7

Equity Beta per year

Equity Beta	2024	2025F	2026F	2027F	2028F	2029F	2030F
Unlevered	1.070	1.070	1.070	1.070	1.070	1.070	1.070
Levered	0.051	3.180	2.545	2.157	1.895	1.706	1.564

In addition to the standard CAPM, we decided that, as TPIC is a small capitalization company, there should be an additional adjustment to the discount rate in order to represent both the increased volatility of the stock and the increased liquidity of the daily negotiations of the stock in the market. We considered the end of 2024 market capitalization of TPIC of USD 629 million to arrive at a premium of 2.94% according to Torchio & Surana (2014) estimations.

Finally, we decided to better represent the risk of the company by including its exposure to different countries and regions. For this, we included a Weighted Average country risk premium (CRP). We considered the risk premiums from Damodaran (2025) and the current sales mix of the company to calculate our average. This results in a country risk premium of 3.72% and was calculated as Table 5.8 shows.

Table 5.8

Country Risk Premium Calculation

Segment	Sales Weight	Country Risk Premium
US	1.52%	*0.0%*
MX	52.34%	*2.5%*
EMEA	33.65%	*6.0%*
IN	12.49%	*2.9%*
WEIGHTED AVERAGE CRP		**3.72%**

5.2.3.2. Cost of Debt

As per the definition of the cost of debt for valuation purposes and the “new debt” of TPIC, the cost of debt must represent the marginal cost of indebtedness; hence, in line with the proposed methodology of Damodaran (2012), we considered the following estimation as a proxy to calculate a reasonable marginal for TPIC:

$$r_d = r_f + High\ Yield\ Spread + Country\ Risk\ Premium \quad (13)$$

Our estimation, as proposed by Damodaran (2012), leverages on a Risk-Free rate for which we used the US 10-Year Bond Rate. To adjust for the increased riskiness of the company being a small-cap, we added the High Yield Spread. Nonetheless, these 2 components alone would just add up to a US-based high-yield company, which does not entirely fit the profile of TPIC, for which we added the same component as in the Cost of Equity, the Country Risk

Premium weighted by the relative importance of the business lines for each geography. This can be represented as shown in Table 5.9.

Table 5.9

Calculation cost of debt

	2025F
US 10Y	4.55%
HY SPREAD	3.00%
COUNTRY RISK PREMIUM	3.72%
KD - DEBT COST	**11.27%**

5.2.3.3. Terminal Value Growth

The terminal growth rate represents the constant rate at which TPIC's free cash flows are expected to grow in perpetuity beyond the forecast period. We estimate this rate by applying the Fischer sum or rates to combine the long-term CPI target and the GDP growth rate for each of the company's operating segments, as reported by Bloomberg. These figures are then weighted according to the relative contribution of each segment, prioritizing the U.S. segment in line with management's guidance, as the main driver for TPIC's products demand is the U.S. This methodology yields a terminal growth rate of **5.23%**, exceeding the sum of the US GDP growth and CPI (4%), reflecting the higher potential expansion in TPIC's non-U.S. markets.

Table 5.10

Terminal Value Calculation

SEGMENT	WEIGHT	LONG TERM CPI	LONG-TERM GDP GROWTH	TERMINAL GROWTH RATE
US	*50.0%*	*2.00%*	*2.0%*	
MX	*16.7%*	*3.00%*	*1.8%*	
EMEA	*16.7%*	*6.30%*	*2.8%*	
IN	*16.7%*	*2.10%*	*4.0%*	
TOTAL	**100.0%**	**2.90%**	**2.43%**	**5.40%**

5.3. Relative valuation

Normally, we would approach this part of the valuation by selecting a suitable *peer group*. As previously mentioned, it should consider manufacturing companies with direct exposure to renewable energies. Nonetheless, according to our estimations, TPIC will remain unprofitable through 2028 by EBITDA, Net Profits, and all performance-related indicators. Hence, the commonly used multiples are such as the PE or EV/EBITDA, would not be relevant as their

result would be indeterminate. So instead of choosing a multiple with little to no adequacy for the industry, we will base our valuation solely on the DCF analysis.

5.4. Valuation Results

We issue a SELL recommendation on TPI Composites Inc. (TPIC) with a 12-month target price of USD 1.764 per share, as of December 31, 2025. The target price is derived from an Adjusted Present Value (APV) model. This would imply a downside of -6.64% against the price of 1.890 on 31/12/2024.

Table 5.11

Valuation Stoplight

Recommendation: Sell								
Sell			Hold			Buy		
1.760	1.803	1.847	**1.890**	2.018	2.145	2.195	2.244	2.293
-6.9%	-4.6%	-2.3%	0.0%	6.8%	13.5%	16.1%	18.7%	21.3%

Our sell recommendation is based on a stoplight methodology that categorizes investment signals according to the stock's expected return. A Sell signal is triggered when the company's valuation implies it cannot sustain its historical price level (price of 31/12/2024). A Hold signal is issued when the stock is expected to generate returns in line with those of its benchmark index — in this case, the Russell 2000. Finally, a Buy signal is assigned when the stock shows an implied return that exceeds the benchmark's historical performance, indicating potential outperformance.

- **Niche Market Exposure:** TPIC operates in a highly specialized segment of the renewable energy sector, which inherently makes it more volatile and sensitive to policy shifts. Recent headwinds, such as the rollback of U.S. subsidies (e.g., under the Inflation Reduction Act) and policy focus on oil and gas, have negatively impacted investor sentiment.
- **Sticky Cost Structure:** TPIC continues to face stickiness in its cost structure. Costs, OPEX, and CAPEX remain high and are unlikely to decline significantly in the short term. This limits the company's ability to improve margins, particularly in an environment of strong competition.
- **Delayed Returns on Investment:** TPIC has committed resources to expand its capacity. However, the benefits from these projects are not expected to materialize in

the short term. The time lag between the historical and future CAPEX investments is a major factor in cost reduction and margin improvement.

- **Leverage and Financial Flexibility:** TPIC's capital structure remains a critical challenge. The company is overleveraged and must prioritize debt repayment and refinancing. This restricts its financial flexibility and increases vulnerability to refinancing risks—particularly during 2025–2026.
- **Macroeconomic and Trade Sensitivity:** As a globally integrated manufacturer, TPIC is highly sensitive to macroeconomic fluctuations and geopolitical developments. Its operations and supply chain are exposed to tariffs, trade restrictions, and commodity price volatility. This elevated exposure to external shocks adds another layer of risk, particularly in the context of rising protectionism and global economic uncertainty.

5.5. Sensitivity Analysis

As discussed in our literature review, valuation is not an entirely objective process as it heavily varies based on the assumptions of its input. Hence, to assess the robustness of our results and understand how changing these inputs will change our output (share price) we conducted a sensitivity analysis.

We chose to run the sensitivity analysis on the WACC and the terminal growth rate as these inputs tend to be more volatile and have a higher impact on the final share price. It is important to note that, since our valuation is based on an APV model, the WACC is not static; it evolves as the capital structure changes. For the sensitivity analysis, we consider a constant parallel shift to the WACC across the entire forecast period.

As illustrated in Table 5.12, the relationship is consistent with financial theory: higher WACC values reduce the company's valuation, while higher terminal growth rates increase it. By applying variations of up to ±15% in both WACC and terminal growth, the estimated per-share value of TPIC ranges from $1.6723 to $1.9815, corresponding to a deviation of approximately –5.22% to +8.51% compared to our base case valuation of $1.7645.

Table 5.12

Sensitivity Analysis

WACC Variation	G						
	4.59%	**4.86%**	**5.13%**	**5.40%**	**5.67%**	**5.94%**	**6.21%**
-15%	1.8534	1.8620	1.8712	1.8810	1.8914	1.9026	1.9147
-10%	1.8143	1.8213	1.8288	1.8366	1.8450	1.8540	1.8635
-5%	1.7799	1.7857	1.7918	1.7983	1.8051	1.8123	1.8200
0%	1.7492	1.7540	1.7591	**1.7645**	1.7701	1.7760	1.7823
+5%	1.7213	1.7254	1.7297	1.7342	1.7389	1.7439	1.7491
+10%	1.6958	1.6993	1.7030	1.7068	1.7108	1.7149	1.7193
+15%	1.6723	1.6753	1.6784	1.6817	1.6851	1.6886	1.6923

6. Conclusion

As discussed throughout this thesis, valuations are inherently subjective exercises, with results influenced by the underlying assumptions of both the valuation models and their inputs. The goal of this work was to estimate the expected fair value of TPI Composites, Inc. (TPIC) as of 31 December 2025.

To achieve this, we began with a comprehensive literature review to define the theoretical foundation for valuation and to find the most appropriate valuation model for TPIC's specific circumstances. We followed up our literature review with a qualitative assessment, which encompassed: the company's history, production processes, business model, governance structure, and strategic positioning within the wind energy industry. We then complemented the internal assessment of the company by taking a look at both macroeconomic and sectoral environments, enabling a clearer understanding of TPIC's role within its industry and the broader economic trends likely to shape its future.

On the quantitative side, the analysis focused on TPIC's most recent financial statements, linking operational performance and strategic decisions to prevailing economic conditions. This financial assessment provided the necessary context for developing a forward-looking valuation. One of the main conclusions from this point was the understanding that the Adjusted Present Value (APV) model would be the best model for our valuation, given the company's current capital structure and financial characteristics.

Under the current economic environment and our stated assumptions, the APV model yielded a target price of *$1.764* per share as of 31 December 2025. This valuation supports a *sell* recommendation, as it implies underperformance compared to the Russell 2000 Index.

To account for uncertainty in key variables, we conducted a sensitivity analysis. This produced a valuation range of $1.6723 to $1.9815 per share, corresponding to a potential deviation of approximately –5.22% to +8.51% from the base case. This range reinforces the view that, even under more favourable assumptions, the expected return does not justify a bullish position at the present, and with our set of assumptions.

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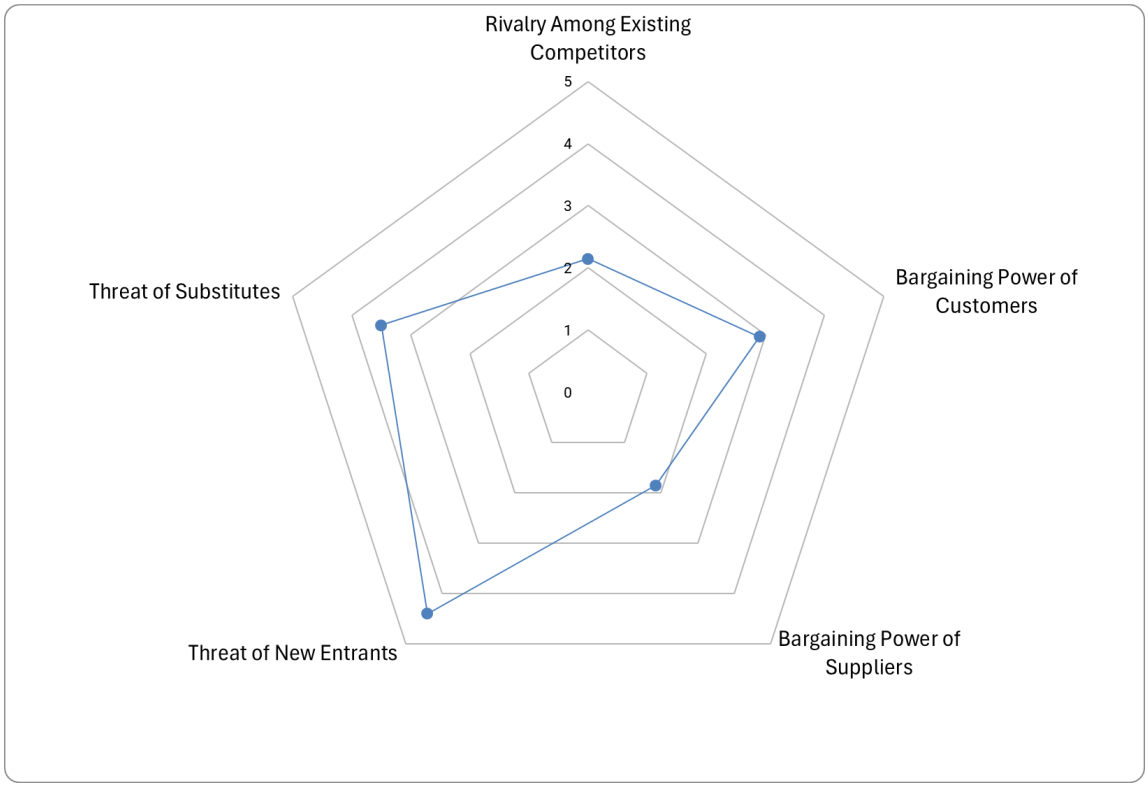
8. Annexes

Annex A:

Porter Analysis



Note. Scale: 1 (unfavourable) to 5 (favourable)

Annex B:

Summary of macroeconomic projections.

Forecast Factors	Source	2024	2025F	2026F	2027F	2028F	2029F	2030F
DK								
Denmark Wind installed Capacity	IEA - Renewable Energy Progress Tracker	7.80	7.90	8.50	9.20	10.50	12.10	14.60
DK Δ% Wind Installed capacity	Percentual difference	*2.63%*	*1.28%*	*7.59%*	*8.24%*	*14.13%*	*15.24%*	*20.66%*
DK CPI Forecast	Bloomberg	1.40%	1.80%	1.80%	2.20%	2.00%	2.00%	2.00%
DE								
Germany Wind installed Capacity	IEA - Renewable Energy Progress Tracker	71.90	78.50	85.10	92.10	100.50	108.50	120.70
DE Δ% Wind Installed capacity	Percentual difference	*3.90%*	*9.18%*	*8.41%*	*8.23%*	*9.12%*	*7.96%*	*11.24%*
DE CPI Forecast	Bloomberg	2.50%	2.20%	2.00%	2.00%	2.00%	2.00%	2.00%
US								
US Wind installed Capacity	IEA - Renewable Energy Progress Tracker	154.90	164.40	179.20	194.50	211.50	230.50	251.30
US Δ% Wind Installed capacity	Percentual difference	*4.80%*	*6.13%*	*9.00%*	*8.54%*	*8.74%*	*8.98%*	*9.02%*
US CPI Forecast	Bloomberg	2.80%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
US GDP Growth	Bloomberg	2.80%	1.40%	1.60%	1.90%	1.90%	1.90%	1.90%
US Wind Industry Expected Growth	Mordor Intelligence		5.45%	5.45%	5.45%	5.45%	5.45%	5.45%
MX								
Mexico Wind installed Capacity	IEA - Renewable Energy Progress Tracker	7.30	7.70	8.10	8.60	9.10	9.70	10.30
MX Δ% Wind Installed capacity	Percentual difference	*2.82%*	*5.48%*	*5.19%*	*6.17%*	*5.81%*	*6.59%*	*6.19%*
USDMXN	Bloomberg	20.83	20.00	20.14	20.25	20.20	19.49	19.49
Δ% USDMXN	Percentual difference	*22.75%*	*-3.98%*	*0.70%*	*0.55%*	*-0.25%*	*-3.51%*	*0.00%*
CPI Forecast	Bloomberg	4.70%	3.70%	3.60%	3.40%	3.00%	3.00%	3.00%
TR								
Turkey Wind installed Capacity	IEA - Renewable Energy Progress Tracker	12.50	13.60	14.60	15.90	17.50	19.30	21.20
TR Δ% Wind Installed capacity	Percentual difference	*5.93%*	*8.80%*	*7.35%*	*8.90%*	*10.06%*	*10.29%*	*9.84%*
EURTRY	Bloomberg	35.35	43.83	48.11	53.69	57.14	60.47	60.47
Δ% EURTRY	Percentual difference	*19.71%*	*23.99%*	*9.77%*	*11.60%*	*6.43%*	*5.83%*	*0.00%*
TR CPI Forecast	Bloomberg	60.00%	35.40%	23.80%	17.00%	17.00%	17.00%	17.00%
ES								
Spain Wind installed Capacity	IEA - Renewable Energy Progress Tracker	31.20	32.50	33.30	34.70	35.00	35.60	35.70
ES Δ% Wind Installed capacity	Percentual difference	*3.65%*	*4.17%*	*2.46%*	*4.20%*	*0.86%*	*1.71%*	*0.28%*
ES CPI Forecast	Bloomberg	3.00%	3.00%	2.80%	2.40%	2.00%	2.00%	2.00%
GB								
UK Wind installed Capacity	IEA - Renewable Energy Progress Tracker	32.90	36.30	40.90	46.00	50.30	55.60	62.80
UK Δ% Wind Installed capacity	Percentual difference	*9.30%*	*10.33%*	*12.67%*	*12.47%*	*9.35%*	*10.54%*	*12.95%*
EURGBP	Bloomberg	0.83	0.86	0.86	0.85	0.85	0.84	0.85
Δ% EURGBP	Percentual difference	*-4.60%*	*3.61%*	*0.00%*	*-1.16%*	*0.00%*	*-1.18%*	*1.19%*
UK CPI Forecast	Bloomberg	2.50%	3.10%	2.30%	2.00%	2.00%	2.00%	2.00%
FR								
France Wind installed Capacity	IEA - Renewable Energy Progress Tracker	24.70	27.30	30.40	33.10	35.80	37.40	38.50
FR Δ% Wind Installed capacity	Percentual difference	*9.29%*	*10.53%*	*11.36%*	*8.88%*	*8.16%*	*4.47%*	*2.94%*
FR CPI Forecast	Bloomberg	2.30%	0.90%	1.60%	2.00%	2.00%	2.00%	2.00%
EU								
EUR USD	Bloomberg	1.04	1.15	1.17	1.19	1.18	1.2	1.2
Δ% EURUSD	Percentual difference	*-5.45%*	*10.58%*	*1.74%*	*1.71%*	*-0.84%*	*1.69%*	*0.00%*
CPI EUR	Bloomberg	2.50%	2.20%	2.00%	2.10%			
EU Wind Industry Expected Growth	Statista		6.00%	6.00%	6.00%	6.00%	6.00%	6.00%
EMEA								
EMEA CPI	Bloomberg	16.70%	12.20%	7.80%	6.30%	6.30%	6.30%	6.30%
EMEA GDP Growth	Percentual difference	2.80%	2.40%	2.60%	2.80%	2.80%	2.80%	2.80%
MEA Wind Industry Expected Growth	Horizon Grand View		8.00%	8.00%	8.00%	8%	8%	8%
ASIA								
ASIA-EX JP CPI	Bloomberg	1.30%	1.30%	1.70%	2.10%	2.10%	2.10%	2.10%
ASIA-EX JP GDP Growh	Percentual difference	5.30%	4.40%	4.20%	4.30%	4.30%	4.30%	4.30%
ASIA Wind Industry Expected Growth	Forune Business Insight		8.00%	8.00%	8.00%	8%	8%	8%

Annex C:

Forecasted Financial Ratios

LIQUIDITY RATIOS	2024	2025F	2026F	2027F	2028F	2029F	2030F
Current	0.94x	1.17x	1.30x	1.25x	1.30x	1.08x	1.09x
Acid - test	0.78x	0.93x	1.06x	1.02x	1.07x	0.85x	0.86x
Working Capital	-28,878	58,501	116,620	102,979	130,227	37,132	42,879
Net Working Capital to sales	-2.17%	3.69%	6.55%	5.38%	6.38%	1.69%	1.82%
ACTIVITY RATIOS							
Days of Receivables	29.20 days	23.27 days	27.13 days	22.60 days	26.63 days	23.08 days	26.26 days
Days of Inventory	1.03 days	1.04 days	1.05 days	1.05 days	1.06 days	1.07 days	1.08 days
Days of Payables	61.49 days	63.74 days	62.56 days	61.27 days	62.48 days	62.49 days	62.18 days
PROFITABILITY							
Ratios							
Gross margin (w/o D&A)	-3.98%	-2.98%	-2.40%	-1.83%	-1.27%	-0.17%	0.90%
Operating Profit (EBIT)	-105,150	-92,542	-96,747	-89,600	-87,170	-66,794	-48,942
EBIT margin	-7.90%	-5.84%	-5.43%	-4.68%	-4.27%	-3.04%	-2.08%
Earnings Before Taxes (EBTIDA)	-75,267	-92,542	-96,747	-89,600	-87,170	-66,794	-48,942
EBITDA margin	-15.79%	-11.92%	-12.48%	-10.42%	-12.89%	-4.19%	-2.66%
Net Profit margin	-18.08%	-11.92%	-12.48%	-10.42%	-12.89%	-4.19%	-2.66%
ROA	-29.94%	-27.25%	-32.57%	-25.77%	-33.60%	-10.78%	-7.70%
ROE	196.81%	50.56%	40.40%	25.84%	27.09%	7.45%	4.71%

Annex D:

Forecasted P&L

P&L - Continuing Operations	2024	2025F	2026F	2027F	2028F	2029F	2030F
Net Sales	1,331,131	1,583,277	1,780,858	1,915,395	2,042,230	2,197,632	2,351,732
Cost of Sales	1,384,130	1,630,482	1,823,628	1,950,360	2,068,082	2,201,295	2,330,453
Gros Profit	**-52,999**	**-47,206**	**-42,771**	**-34,965**	**-25,852**	**-3,663**	**21,279**
General and administrative	27,536	32,253	36,278	39,018	41,602	44,768	47,907
Loss on sale of assets and asset impairments	17,230	12,940	16,968	15,199	19,098	17,809	21,686
Restructuring charges, net	10,950	2,599	3,492	3,388	3,784	3,962	4,275
Gain (loss) from continuing operations	**-108,715**	**-94,997**	**-99,508**	**-92,570**	**-90,337**	**-70,201**	**-52,589**
Interest Expense, net	92,420	84,808	112,106	97,926	160,293	19,706	9,749
FX Expense, net	1,655	0	0	0	0	0	0
Other Income	-5,220	-2,455	-2,762	-2,970	-3,167	-3,408	-3,647
Gain (loss) from continuing operations before income	**-197,570**	**-177,350**	**-208,852**	**-187,526**	**-247,463**	**-86,499**	**-58,691**
Income tax provision	12,550	11,350	13,367	12,002	15,838	5,536	3,756
Gain (loss) from continuing operations before income	**-210,120**	**-188,700**	**-222,219**	**-199,528**	**-263,301**	**-92,035**	**-62,447**
Preferred stock dividends and accretion	0	0	0	0	0	0	0
Gain on extinguishment of Series A Preferred Stock	0	0	0	0	0	0	0
P&L from Continuing	**-210,120**	**-188,700**	**-222,219**	**-199,528**	**-263,301**	**-92,035**	**-62,447**
P&L from Discontinued	30,587	0	0	0	0	0	0
P&L attributable to common stockholders	**-240,707**	**-188,700**	**-222,219**	**-199,528**	**-263,301**	**-92,035**	**-62,447**

Annex E:

Forecasted CF

CASH FLOW	2024	2025F	2026F	2027F	2028F	2029F	2030F
Net Revenue	**-240,707**	**-188,700**	**-222,219**	**-199,528**	**-263,301**	**-92,035**	**-62,447**
Depreciation & Amortization	30,482	36,035	42,718	50,531	59,475	69,549	80,753
Loss on sale of discontinued Operations	6,342	0	0	0	0	0	0
Loss on Sale of Assets and Asset Impairment	36,599	0	0	0	0	0	0
Share based Compensation	6,667	-11,009	-12,383	-13,319	-14,201	-15,281	-16,353
Amortization of debt issuance costs and debt discounts	32,331	0	0	0	0	0	0
Paid in Kind Interest	46,103	0	0	0	0	0	0
Deferred Income Taxes	-3,458						
Non-Cash Items	**155,066**	**25,025**	**30,335**	**37,213**	**45,274**	**54,268**	**64,400**
Δ WK	**98,139**	**170,161**	**44,474**	**77,597**	**28,731**	**69,470**	**24,691**
Operational Cash Flow	**12,498**	**6,486**	**-147,410**	**-84,719**	**-189,295**	**31,702**	**26,644**
CAPEX	-26,201	-30,000	-36,106	-42,213	-48,319	-54,425	-60,531
Proceeds form sale of business	0	0	0	0	0	0	0
Cash from Investment Activities	**-26,201**	**-30,000**	**-36,106**	**-42,213**	**-48,319**	**-54,425**	**-60,531**
Cash Flow From Investment Activities	**-13,703**	**-23,514**	**-183,516**	**-126,931**	**-237,614**	**-22,723**	**-33,887**
Convertible Note Effects	0	0	0	0	0	0	0
Revolving and term loans	0	0	0	0	0	0	0
Proceeds from working capital loans	192,677	0	0	0	0	0	0
Repayments of working capital loans	-136,158	0	0	0	0	0	0
Principal repayments of finance leases	-1,238	805	95	48	5	0	11,057
Net proceeds from (repayments of) other debt	-2,599	-126,739	214,127	133,540	243,587	-48,281	-1,435
Proceeds from exercise of stock options and common stock warrants	**0**	0	0	0	0	0	0
Repurchase of common stock including shares withheld in lieu of income taxes	-1,718	0	0	0	0	0	0
Cash from Financing Activities	**50,964**	**-125,934**	**214,222**	**133,588**	**243,592**	**-48,281**	**9,622**
FX Impact	-2,415						
Initial Cash	172,813	**207,659**	**58,211**	**88,916**	**95,573**	**101,550**	**30,546**
Free Cash Flow	**207,659**	**58,211**	**88,916**	**95,573**	**101,550**	**30,546**	**6,281**

Annex F

Forecasted APV

APV	2025F	2026F	2027F	2028F	2029F	2030F
Cash Flow	58,211	88,916	95,573	101,550	30,546	6,281
Terminal Value						74,406
WAAC Post Tax	13.04%	13.60%	14.16%	14.72%	15.28%	15.84%
Firm Value	**278,655**	**227,631**	**164,287**	**86,919**	**69,654**	**74,406**
Target DE (48.34%)	80.00%	73.67%	67.34%	61.00%	54.67%	48.34%
Debt Capacity	222,924	167,691	110,625	53,024	38,081	35,968
Tax Rate	28%	28%	28%	28%	28%	28%
Terminal Value Tax Shield						19,582.20
Nominal tax shield	25,966.97	8,561.16	6,705.42	4,598.61	2,288.11	1,703.56
Tax Shield Value	**28,273.14**	**23,398.19**	**19,874.53**	**18,089.90**	**18,464.47**	**19,582.20**
Firm Value	306,927.73	251,028.84	184,162.01	105,008.94	88,118.17	93,987.98
Financial Debt	222,923.67	167,690.94	110,624.62	53,024.09	38,081.07	35,967.75
Equity Value	**84,004.06**	**83,337.90**	**73,537.39**	**51,984.85**	**50,037.10**	**58,020.23**
Shares Outstanding	47,609.00	47,609.00	47,609.00	47,609.00	47,609.00	47,609.00
Share Price	**1.7645**	1.75	1.54	1.09	1.05	1.22