



Industrials

Stock Rating:  
**Hold**

Current Price: \$63.37  
Target Price: \$57 - \$79

Terex Corporation  
(NYSE: TEX)

**Analysts:**

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### Investment Thesis

We recommend a **HOLD** rating on Terex Corporation, based on a target price range of \$57 - \$79. This recommendation is based on our valuation model projecting an upside range of -9.5% to 24%. Once present economic risks have been mitigated and a new product line reaches greater potential, Terex's place in the market will become even stronger in the midst of large industry players.

**Thesis Driver:**

Terex announced GreenTec, a vegetation management line of products falling under the materials processing (MP) segment, on February 5, 2024. This new product line further diversifies the products that Terex offers to their customers across numerous industries. This diversification sets Terex apart from their competitors, as no other big players within the construction and industrial machinery industry provide their customers solutions to environmental problems.

**Risk to Thesis:**

Housing starts and interest rates are highly correlated. As interest rates increase, housing starts typically decrease. Higher interest rates are difficult for companies within this industry. Fewer housing starts and industrial construction projects leads to less revenue for consumers. However, this also affects consumers' ability to purchase new equipment. Many construction companies look to loans from commercial banks in order to make these large purchases. Increased interest rates make these loans more expensive, leading to an economic environment where Terex's products are not purchased as frequently, leading to decreased sales and net income.

### Valuation Summary

Discounted Cash Flow Analysis: \$70.55  
Dividend Discount Model: \$57.32  
Relative P/E: \$78.66

### Company Overview

Terex Corporation is a key player in the construction and industrial machinery industry. Headquartered in Norwalk, Connecticut, Terex designs, manufactures, and markets aerial work platforms and material processing machines on a global scale. They work in various industries including construction, mining, energy, and recycling.

### Statistical Highlights

**Stock Price**  
52-Week Range: \$42.50 - \$65.89

**Financials**  
Market Cap: 4,309M  
WACC: 10.3%  
Beta: 1.57  
2023 Sales: 5,152M  
2024E Sales: 5,200M  
LTM EPS: 7.7  
2023 Dividend Yield: 1.1%

**Margins and Ratios**  
Gross Margin: 22.84%  
Profit Margin: 10.06%  
2023 ROIC: 28.8%  
Debt-to-Equity: 0.37  
Quick Ratio: 0.95

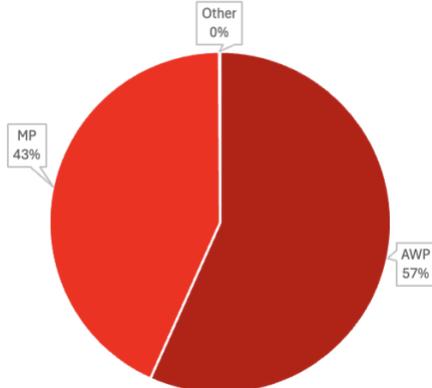
2 Year Stock Performance vs. S&P 500 and Industrials Sector



## Company Analysis

Terex has four main product segments, Aerial Works Platforms (AWP), Materials Processing (MP), and Other. Other includes Utility and Specialty Equipment, as well as Terex Financial Services (TFS). TFS assists customers with the financing of short-term rentals, long-term leases, or the acquisition of various Terex products. AWP products consist of various types of lifts, such as portable material lifts, boom lifts, and scissor lifts, while also producing utility equipment. MP offers a wider range of products, from concrete pavers and mixer trucks, to tower cranes, conveyers, and washing systems. AWP and MP are segments that contrive the most revenue, at 56.7% and 43.2% of 2023 revenue respectively, with “Other” consisting of 0.1%.

AWP is Largest Segment by 2023 Revenue at 56.7%

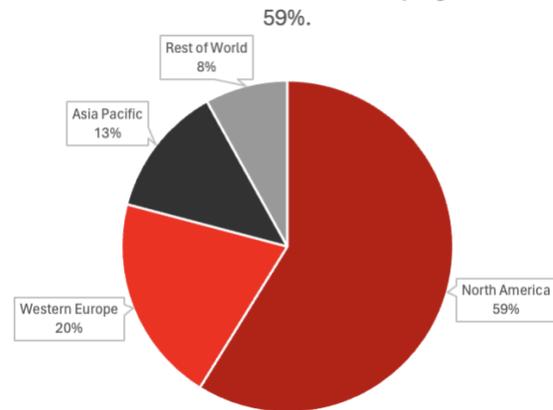


Source 23

Terex also has a large international presence, with 41% of 2023 revenue coming from outside of North America. The countries that comprise most international revenue in 2023 are Canada, China, Germany, and the United Kingdom, at 4.5%, 3.7%, 3.7%, and 3.4%, respectively. In addition to being sold internationally, Terex also manufactures many products around the globe. For example, Terex operates a plant for pick and carry cranes in Brisbane, Australia, and another for mobile crushers and mobile screens in Jiading, China. CEO

Simon Meester shares in his letter attached to the 2023 annual report that Terex is currently building another AWP facility in Monterrey, Mexico, which is on track with the construction plan (Source 23).

In 2023, North America led sales by region at



Source 5

It is important to note that Terex does not have any individual customer accounting for more than 10% of revenues. In fact, the top ten customers of Terex in 2023 accounted for less than 27% of revenues, with the top customer accounting for 5%.

As for acquisitions, on April 4, 2023, Terex MP announced the purchase of MARCO Conveyors. Terex will purchase a 100,000 square foot facility in Vernon, Missouri to expand the site's manufacturing capacity to support the demand for their mobile conveying equipment. Terex will also assume MARCO's sales and engineering office in the St. Louis area.

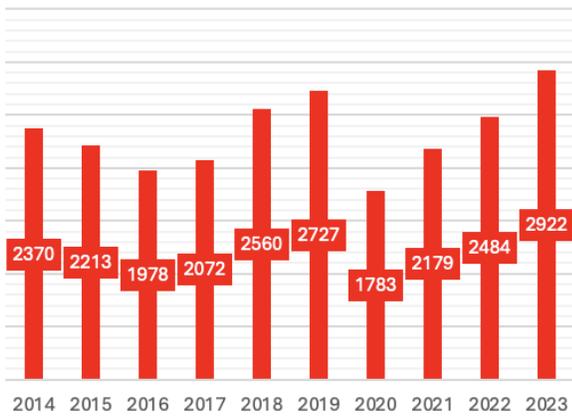
## Product Segments

### Aerial Works Platforms (AWP)

Customers looking to purchase AWP products are using them for the construction and maintenance of industrial, commercial, institutional, and residential buildings. As for particular projects, customers are using AWP products for working on transmission and distribution lines, tree trimming, and construction or foundation drilling. These products assist construction and maintenance workers in reaching elevated surfaces. Some product examples

are portable aerial work platforms and material lifts, telehandlers, boom and scissor lifts, and various utility equipment. The primary brands that fall under the AWP segment are Terex and Genie. Products in this segment are mostly distributed through independent distributors and international equipment rental companies. A substantial portion of revenues for the AWP segment comes from these rental companies. Additionally, Terex has sales employees located globally to serve these different distribution channels. Some utility products in this segment are also distributed through a direct sales model, particularly when sales are occurring outside of North America. The Monterrey facility previously mentioned is being built for Genie products leading to improved performance and increased competitiveness within the industry. (Source 23).

AWP revenues increased by 4.09% on average (2014-2023)



Source: Valuation Model

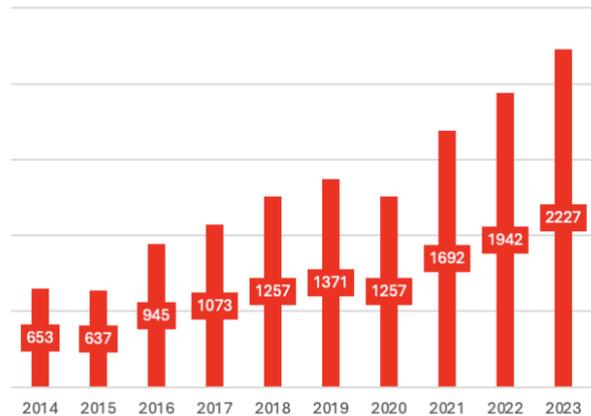
The last three years for the AWP segment have been the strongest of the decade. As depicted in the bar chart above, the segment saw an increase of 22% in 2021, 14% in 2022, and 18% in 2023. These correspond to an increased concern for the safety of construction workers. AWP products offer a safer alternative to ladders or scaffolding and are essential for electrical work projects. The safety of workers then leads to more efficient infrastructure projects. As a result, increased

urbanization around the globe and population growth are leading to an increase in electrical connection projects, we believe worker safety will continue to be a major priority, thus leading to an average revenue growth of 6.54% before reaching a 5% steady state of growth in 2029 (Source 1).

**Materials Processing (MP)**

MP products are purchased by customers across various industries for uses such as recycling, mining, biomass production, construction and infrastructure projects, and the handling, lifting, and movement of various materials. Some examples of these materials are various minerals, concrete, and wood. In contrast to the AWP product segment, MP products have a wider range of uses beyond construction and infrastructure. Products in this segment include washing systems, wood processors, recycling equipment, concrete mixers, and many others. With a wider range of products that offer multiple uses, more brands are associated with this segment. Some of them are Terex, Terex Ecotec, Terex Recycling Systems, Powerscreen, and Fuchs. Similar to AWP, MP products are distributed through rental companies, direct sales, and independent distributors found across the globe (Source 23).

MP revenues increased by 15.71% on average (2014-2023)



Source: Valuation Model

Similar to AWP, the last three years of revenue growth for the MP segment are the strongest of the decade. The bar chart above depicts that this

segment saw revenue growths of 35%, 15%, and 15% for 2021, 2022, and 2023 respectively. The bar chart also depicts a trend of revenue increases over time, with the exception of 2020 due to the COVID-19 pandemic.

These increases can be attributed to increases in technology. As construction activity has increased over the decade, industry workers have shown an increased desire for automated and robotic products (Source 5). Additionally, with the rise of machine learning and artificial intelligence, Terex has new opportunities for how to enhance and evolve their current MP product offerings. In the same annual report letter mentioned previously, CEO Simon Meester touches on MP innovation, specifically speaking on the recent launch of Green-Tec, a new line of MP products to be used for vegetation management (Source 23).

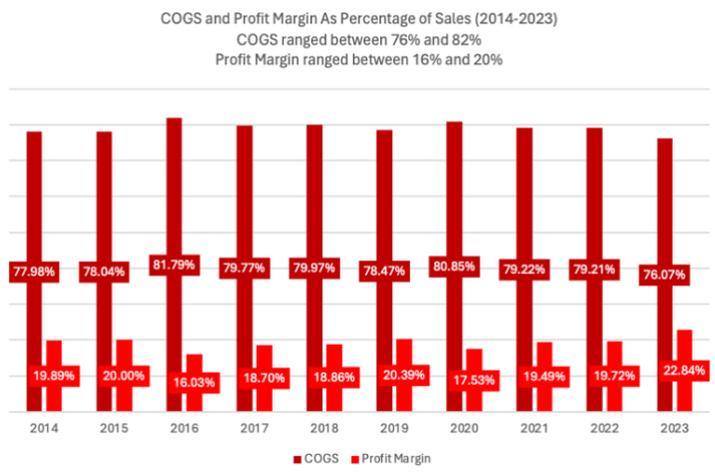
Our team believes that these technological developments will continue to evolve throughout the forecast horizon, leading to more opportunities for Terex to create innovative products. Additionally, the addition of Green-Tec to the MP product offerings allows for new customers and industries to interact with Terex, which will lead to even more growth on top of strong historical performances from other product lines. This reasoning has led to an average forecasted revenue growth of 6.54% before reaching a similar steady state to AWP of 5% in 2029.

### Expense Analysis

Terex has three main expense categories: cost of goods sold, depreciation & amortization, and SG&A. Additionally, Terex has goodwill & intangible asset impairment as one of the main expenses. This expense has had a value of zero for the majority of the historical financials. However, for forecasting purposes, our team followed the amortization schedule provided in Terex’s 2023 annual report for forecasting purposes, assuming no additional acquisitions will be made through 2030.

### Cost of Goods Sold and Margin Analysis

Cost of goods sold (COGS) is the largest expense category that Terex has had for the last decade. Over the last three years, COGS, as a percentage of net income, has been 79.22%, 79.21%, and 76.07% for 2021, 2022, and 2023 respectively. This leads to profit margins of 19.49% for 2021, 19.72% for 2022, and 22.84% for 2023. Both COGS and profit margins have been consistent across the decade, as depicted in the bar chart below.



Source: Valuation Model

In contrast, the average profit margin for companies in the industrial machinery industry is 39.04%, meaning that the average COGS is 60.96% (Source 6). Terex comes in over 19% above the average. This can be attributed to the fact that in relation to the rest of the industry, Terex has a wider variety and range of products. So, as a result, their regular course of business requires more raw materials and parts to be used, increased labor costs due to a larger workforce, and increased costs during the manufacturing process in the factories found across the globe.

When forecasting, our team averaged the previous decade’s COGS due to the consistency that is shown in the bar chart above. This average came to be 79.14%, leading to a gross margin of 20.86%. Our team then kept this consistent across the rest of the horizon forecast to 2030. This is due to the fact that we believe Terex will continue to provide a diverse range of products to its customers. With that, we

also believe that Terex will not change its manufacturing processes at any point in the near future, as it is a heavy cost to change the way production is completed. While AI and robotics are a technological advancement that can potentially decrease manufacturing costs in the future, our team believes that these innovations will take a while long amount of time to integrate and will fully occur after the forecast horizon.

**Depreciation and Amortization**

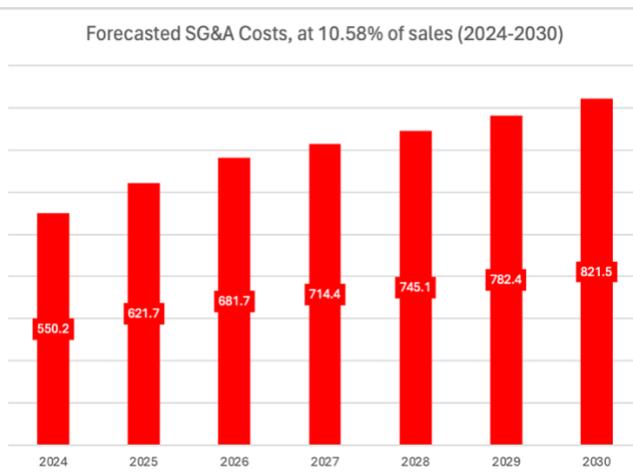
Depreciation and amortization have historically ranged from 1% - 2% of total sales. In the last three years, from 2021 to 2023, the expense has been consistently under 1.3%. Depreciation and amortization expenses have been reduced largely since the 2017 sale of its Material Handling and Port Solutions Business. We project that depreciation and amortization will cost around 1% of sales going into the future.

**SG&A**

Terex’s internal accounting team, as well as their auditor, KMPG, includes research and development (R&D) costs within SG&A. Over the last three years, R&D has consisted of about 12% of SG&A, with values (in millions) of \$52.2, \$55.8, and \$66.7 for 2021, 2022, and 2023 respectively. According to the financial statements, Terex’s R&D consists of engineering costs, the development of new products, and improvements to existing products (Source 23). When forecasting SG&A, our team kept R&D at 12% of SG&A, with the assumption that it is being used for future engineering costs, AI opportunities, and new product research.

Besides R&D, SG&A for 2023, according to the notes to the financial statements, consisted of increased marketing costs, engineering, technology, and new acquisitions. Additionally, much of the \$88.9 million increase between 2022 and 2023 was due to inflation and incentive compensation expenses. Our team estimates that besides the previously mentioned R&D expenses, the largest expense is wages and incentive compensation.

With that in mind, our team forecasted SG&A by taking an average from 2021 to 2023 and growing that average to be a constant 10.58% of sales for the rest of the forecast horizon. Within that forecast, our team expects wages to grow with inflation to provide a consistent cost of living for all Terex employees. A bar chart depicting these forecasts is below.



Source: Valuation Model

**Capital Expenditures, Capital Structure, and Payout Policy**

**Capital Expenditures (CapEx)**

Terex’s capital expenditures relate to the maintenance and construction of new manufacturing facilities. Terex’s management expectations for 2024 capital expenditures are \$145 million. The largest portion of this is related to the new Genie manufacturing facility in Mexico. This is in line with Terex’s 2023 capital expenditures of \$127.2 million, a 45% increase in the 10-year average. The largest portion of this was also attributed to the new Genie manufacturing facility. As the construction and opening of the new facility winds down, we expect capital expenditures to approach its 10-year historical average of 90 million, and to grow with an inflation rate of 2.5% (Source 23).

## Capital Structure

Terex's management prefers to aim for a capital structure with a 2.5 average net debt to EBITDA ratio over an economic cycle (Source 23). The team believes that this is optimal for growth and maintaining strong dividend payouts and share repurchases. Terex currently has a net debt to EBITDA ratio of 0.36. This may indicate that Terex's management may seek out more debt in the future to approach its target goal. Although this is a possibility, we did not include this in our projections due to uncertainty surrounding current interest rates and economic conditions, as it is a relatively unfavorable lending and borrowing environment. We have projected Terex's capital structure to remain relatively unchanged with a low debt-to-equity ratio of around 17%.

The little debt that Terex currently has, is one \$600 million bond due in 2029. Terex currently does not have enough cash and cash equivalents on hand to pay off this debt in full. Terex has demonstrated the ability to pay off large amounts of debt. In 2023, Terex paid off a \$177 million revolving line of credit (Source 23). Because the principle is not due until 2029, there is a strong likelihood that Terex will be able to save enough cash to pay the principle of the bond without affecting its long-term capital allocation strategy.

Companies	Moody's	S&P
Terex	Ba2	BB
Oshkosh	Baa3	BBB
Caterpillar Inc.	A2	A
Wabash National Corp.	Ba3	BB-
Cummins	A2	A
Manitowoc	B2	B
PACCAR Inc.	A1	A+

Source 2

Terex currently has a bond rating of Ba2 by Moody's and BB by S&P (Source 2). This would mean that bonds that Terex issues would be non-investment grade, resulting in higher interest rates they would need to pay on any debt they take out, resulting in a higher cost of debt. Compared to their

main competitors; Terex has an average to slightly below-average long-term credit rating.

## Payout Policy

In the past three years, Terex has participated in paying out dividends and share repurchases. Post Covid-19, Terex has made it a priority to participate in both these activities. Over the past three years, Terex has maintained an average dividend payout ratio of 11.79% (Source 23). We expect them to maintain this level of dividend payout. Terex also participates in share repurchases. Over the past ten years, excluding 2017, Terex has an average buyback of around \$107 million of shares per year. We expect this to remain relatively consistent, as Terex's management makes it a priority to return cash to investors.

## SWOT Analysis

### Strength

A strength of Terex is that they offer a wide range of products that span across different industries. The materials processing segment creates products to assist in turning raw materials into finished products. These products are popular in the mining, quarrying, construction, and recycling industries. Aerial work platforms produce aerial lifts. They are often used in construction and landscaping. Given the different nature of the materials processing and aerial works platforms segments, Terex has a broad range of customers and product offerings. Within these two business segments, Terex produces 17 different types of products. The two major segments have very similar performance, with MP accounting for \$2,227 million and AWP accounting for \$2,921.7 million in revenue in 2023. Terex does not overly rely on either business segment, so this makes Terex resilient to individual industry downturn (Source 23).

### Weakness

A weakness Terex deals with is a fragile supply chain. Since the Covid-19 pandemic, Terex has been dealing with supply chain issues resulting in a

backlog of \$3.4 billion in sales, \$2.4 billion more than the historical average. Terex has manufacturing facilities in North America, Asia, Australia, and Europe that are interconnected, meaning a delay in one facility often results in delays in others. These delays have been caused by a lack of availability of critical materials used to develop products, suppliers' supply chain issues, and regulatory changes in manufacturing facilities in China (Source 7). Terex's supply chain will remain susceptible to these issues, and supply chain issues could be spurred by global issues or conflicts. Terex does not currently have an estimate of how long it will take to get back to historical levels of backlog. This will remain a weakness and a risk to Terex's operations going into the future and it can result in losing customers to competitors (Source 12).

### **Opportunity**

A strong opportunity for Terex going forward is the development of GreenTec, a new brand within the MP environmental products vertical. This brand was announced on February 5 of this year and focuses on vegetation management (Source 21). Vegetation management includes things such as taking care of overgrown trees and other plants. If overgrown vegetation is not taken care of, it can cause soil erosion and issues with water quality (Source 19). If taken to the extreme, overgrown vegetation interfering with power lines can lead to widespread blackouts, as was seen in August of 2003 in northern Ohio, which led to over 50 million people losing power for two days (Source 18). Now, Terex is offering current and prospective clients a solution to these problems. Many of the products that this new line offers, such as chippers, shredders, trommels, and more, are similar to products that are currently offered by other brands but are geared toward a new purpose. The growth of this new product line provides Terex with the opportunity to reach an entirely new industry and client base. It is still in the beginning stages, with the appointment of the business line's director, Jamie Mairs, becoming official on March 1, 2024 (Source 21). Additionally, none of Terex's main competitors

within the industry offer a similar business line, so it is another way for the company to differentiate itself as an industry leader.

### **Threat**

Terex has a major manufacturing presence in China, particularly for the AWP segment. According to the information provided by the company in the notes to the financial statements, a major risk to the business is if there are any major escalations of trade relations with the Chinese. Whether it is changes in tariffs or political policy on imports and exports, the company is at risk of major price changes in raw materials and supplies, as well as the dangers of potentially being able to carry out operations at all in China. This is especially significant for Terex due to the fact that the AWP product segment has a heavy manufacturing presence in China and that this product segment made up 56.7% of sales in 2023. The company does mention that some of these risks have been mitigated through the U.S. government's "duty draw-back mechanism," as well as other governmental offerings (Source 23). However, if parts of the business are affected by changes in Chinese action not mitigated by the government, then portions of Terex's business are significantly at risk of decreased profitability and increased inventory backlogs.

## **Industry Analysis**

### **Porter's 5 Forces**

#### **Degree of Competition: Medium**

Terex competes in markets with moderate levels of competition, driven by factors such as price competition, product differentiation, technological innovation, and global market dynamics. Its diverse product portfolio and global footprint position it against a range of competitors, from large multinational corporations to regional players and niche specialists. Competitive pressure may vary across different market segments and geographies, with factors such as industry consolidation,

regulatory changes, and economic conditions influencing the intensity of rivalry. Terex’s ability to differentiate its products, provide value-added services, and adapt to evolving customer needs and market trends is crucial in maintaining its competitive position amidst industry rivalry.

**Bargaining Power of Suppliers: Medium**

Terex sources materials and components from various suppliers globally to manufacture its products. Its medium degree of competition suggests that it likely maintains a balanced relationship with suppliers. While Terex may have multiple suppliers for critical components, ensuring flexibility and mitigating supply chain risks, certain specialized suppliers may hold some bargaining power, particularly in cases where there are limited alternative sources or high switching costs. However, Terex’s scale and global presence may enable it to negotiate favorable terms with suppliers.

**Threat of Substitutes: Low**

Terex’s products, such as cranes, aerial work platforms, construction equipment, and material processing machinery, serve specific functions essential in various industries. While direct substitutes may exist for certain applications, such as renting equipment vs. Purchasing, Terex’s diverse product range and global presence provide it with a degree of resilience against substitution. Once established in the market, companies face considerable exit barriers, including investments in specialized assets or long-term contracts. The threat of substitutes is moderated by the challenges and risks involved in entering and exiting the market, thus providing a degree of stability for Terex within its competitive market.

**Bargaining Power of Consumers: Low**

With its diverse product portfolio and global sales network, Terex serves a wide range of customers, including contractors, rental companies, government agencies, and industrial firms. While buyers may have some negotiating power due to the availability of alternative suppliers and products,

Terex’s established reputation for quality, reliability, and after-sales support may mitigate this to some extent. Moreover, the cost of switching suppliers, especially for specialized equipment and ongoing service requirements, may reduce buyer leverage. However, in competitive markets or during economic downturns, buyers may exert pressure on pricing and contract terms.

**Threat of New Entrants: Low**

Terex operates in industries such as construction, material handling, and mining, which often require substantial capital investment, technological expertise, and regulatory compliance. Its wide range of products and global reach act as barriers to entry for new competitors. Additionally, Terex’s established relationships with customers and distribution networks further strengthen its position against potential entrants. However, innovative startups or companies with disruptive technologies could pose a threat, especially in niche segments where Terex may not have a dominant presence.

**Industry Competition**

Terex’s main competitors consist of Oshkosh, Caterpillar Inc., Wabash National Corp., Cummins, Manitowoc, and PACCAR Inc. In the table below are the comparisons between each company’s EBITDA, enterprise value, and sales.

Company	Enterprise Value (M)	Gross Margin	EBIT (M)	EV/EBIT
Caterpillar Inc.	215,180.3	35.0%	13826.0	15.6x
PACCAR Inc.	67,409.1	20.6%	6056.2	11.1x
Cummins	46,085.3	23.8%	3266.0	14.1x
Oshkosh	8,710.5	18.4%	843.8	10.3x
Terex	4,545.6	23.0%	642.6	7.1x
Wabash National Corp.	1,459.2	19.3%	315.5	4.6x
Manitowoc	888.2	18.8%	112.6	7.9x

Source 5

When comparing Terex’s Enterprise to its competitors, they lack the scale that others excel in. This can be a signal that the market has not yet

recognized the company's growth potential. Looking deeper helps paint a better picture of their performance with a gross margin of 23% which is higher than the majority of their competitors. Their room for growth, as shown in the graph, is shown in their lower EBIT compared to their peers.

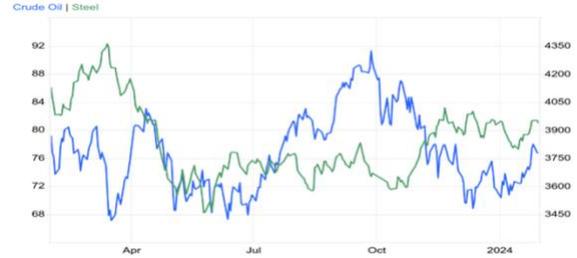
EV/EBIT can give a good indication of how much is being paid for the company's earnings before considering the effects of interest and taxes. Terex is trailing behind some of its biggest competitors, which could indicate that the company may be relatively undervalued compared to its operating income. Their lower ratio can also suggest a more efficient use of capital. While this metric is on the lower end, it still remains within a healthy range. As discussed with their enterprise value, Terex has plenty of room for growth with its diverse range of products in various geographies.

## Economic Analysis

Over the last few years, the economy has experienced high inflation and increased interest rates. We expect these factors to gradually improve over the coming years.

### Commodity Prices

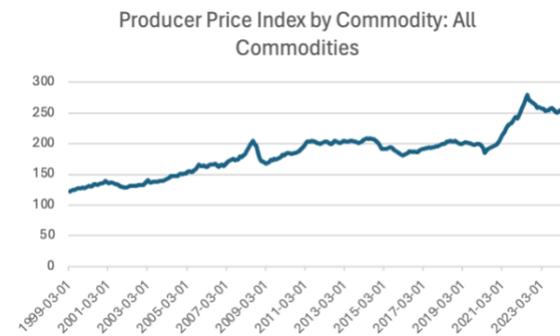
Many common materials, such as steel and precious metals, are priced based on supply and demand. These demands are ever-changing as the economy changes. When certain commodity prices rise, the gatherer of that commodity becomes more profitable. Companies within the industrial sector are affected by changing commodity prices, as it can alter profitability margins and new project demand. We feel that steel prices will slowly increase by roughly 2% over the next year due to an increase in demand in the United States. Crude Oil prices will average \$82/barrel for the year 2024 due to production matching consumption, which is in line with the 2023 average (Source 24). The graph below illustrates the price of essential materials used over the past 12 months.



Source: 24

### PPI (Producer Price Index)

The PPI (Producer Price Index) is impactful as it measures prices from the point of view of a business. As prices rise within the index, manufacturers will post higher costs. Demand is also a necessary gauge. If prices increase due to increased demand, this indicates a healthy manufacturing environment. Additionally, PPI is a pre-indicator of inflation since it looks more at the costs of production rather than the costs to consumers. We feel that PPI will significantly decrease over the next 6 months to a level of 235 due to foreign currencies strengthening against the US dollar and commodities increasing in price. The graph below depicts the price of all commodities over the past 25 years.

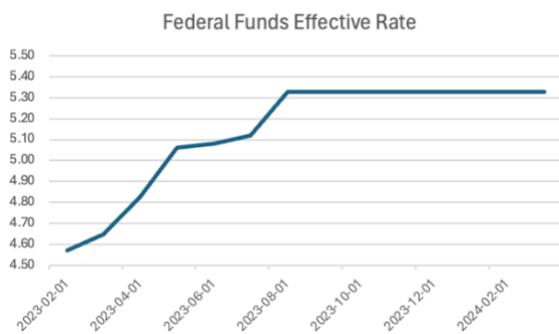


Sources 6 & 10

### Federal Funds Rate/Interest Rates

The Federal Funds Rate is the overnight borrowing rate set by the Federal Open Markets Committee. This rate is used by other institutions to determine their borrowing rates, trickling down to consumers and businesses. As the cost of borrowing increases, fewer new projects will be started. This relates to interest rates because as banks are borrowing at

higher Federal Funds rates, they will need to charge higher interest rates to people and firms who are looking to take out loans. This is important to consider when viewing construction and engineering companies throughout the industrial sector. Many of these companies require large machinery that can only be purchased by taking out loans, making it difficult to obtain products and land. Over the course of 2024, we expect to see three rate cuts totaling 74 basis points, bringing the Federal Funds Rate to 4.6%. The graph below illustrates the change in interest rates over the past year.



Sources 7 & 22

## Housing Starts

This index refers to the units of home construction performed within a month. We expect housing starts will decrease for 2024 to 1.04M due to higher resale rates that are caused by the Federal Funds Rate cuts. This affects the performance of key industries within this sector such as construction, machinery, construction materials, electrical equipment, and more that go into this sector itself. This is how these industries make money, which leads back to the performance of the sector. In 2024, housing starts will see a decline as a result of higher resale rates that are caused by the Federal Funds Rate being cut. We expect to see a decrease to a level of 1.04M. The graph below shows the amount of new privately owned housing starts in the past 5 years.



Sources 8 & 13

## Consumer Confidence Survey

The Consumer Confidence Survey reports consumers' thoughts and feelings about financial and employment expectations, business conditions, consumer spending and economic growth, and the labor market. When consumer confidence is higher, consumers will be more willing to start businesses and projects and spend more money. Due to the Federal Funds Rate gradually decreasing to 4.6% over the coming 12 months, we expect to see consumer confidence increase to 120 as a result of borrowing costs lessening. The graph below illustrates the Consumer Confidence Index for the past 17 years.

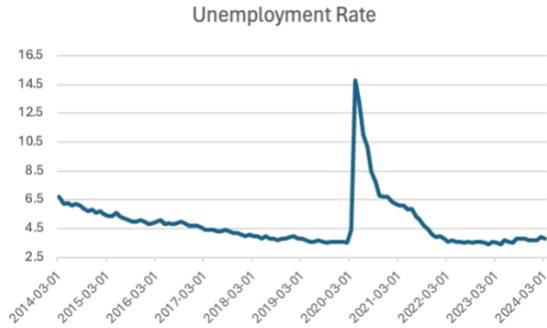


Source 3

## Employment Statistics

When the market is strong and the unemployment rate is low, important industries such as transportation, infrastructure, construction & engineering, air freight & logistics, and others have more support in getting projects done, thus leading to stronger performance. We expect the

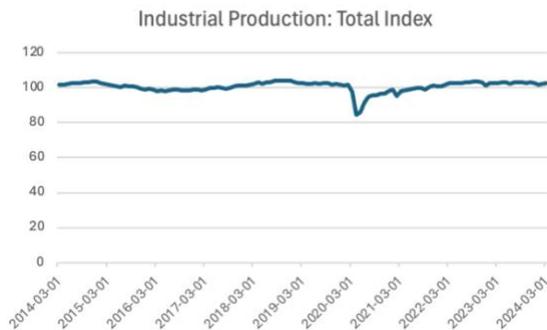
unemployment rate to increase in 2024, peaking at 4.2% because of the economy slowing before the Fed starts its rate cuts. The graph below illustrates the unemployment rate over the past decade.



Sources 10 & 16

## IPI (Industrial Production Index)

The industrial production index (IPI) is a monthly economic indicator measuring real output in the manufacturing, mining, electric, and gas industries relative to a base year. This is important to look at as it depicts the entire industry as a whole on a month-by-month basis from the Federal Reserve’s perspective. We project that the IPI will decrease by 1.5% by the end of 2024. The graph below illustrates the trajectory of the IPI over the last decade.

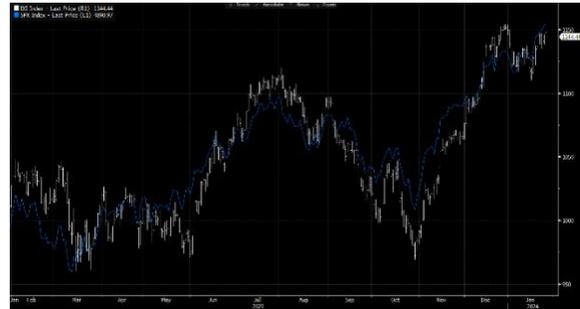


Source 8,13

## Capital Markets Outlook

To analyze the industrials industry, we are using the Industrial Select Sector Index. The index has relatively tracked the S&P500 over the course of the past year. We believe that is a good time to invest

in the industrial industry due to the expected federal funds rate decrease. We believe that industrials and materials will outperform due to the expected federal funds rate decrease and ongoing conflicts in Ukraine and the Middle East. Industries that will benefit from our outlook are Aerospace & Defense, Industrial Conglomerates, and Commercial Services & Supplies. The chart below depicts the performance of the industrial sector relative to the S&P500 over the last year.



Source 2

## **Valuation Discussion**

It is important to know that for all forecasts, our team used a six-year forecast horizon, spanning the years 2024 to 2030.

## Revenue

As depicted in the pie chart breaking down Terex’s 2023 revenues the two leading segments are Aerial Works Platforms (AWP) at 56.7% and Materials Processing (MP) at 43.2%. Our team forecasted that these two segments will continue to be the most profitable segments in that order.

Additionally, when forecasting revenues over the next six years, we began our forecasts by following the guidance provided by management in the 2023 Q4 earnings call (Source 19). Terex’s management team projects that 2024 revenues will be between \$5.1 billion and \$5.3 billion, so our team chose to place our estimate in the middle of that range at \$5.2 billion, a 0.9% increase from 2023. Our team then had the goal of forecasting Terex to be in a steady state of growth at 5% for 2029 and beyond. So, for

2025 – 2028, we used historical data as guidance and forecasted an average growth of 6.5%, leading to revenues of \$7.394 billion and \$7.764 billion for 2029 and 2030 respectively.

### **Discounted Cash Flow (DCF) and Economic Profit (EP)**

Both the DCF and EP valuation techniques determine the implied share price for a company. The DCF approach looks at the present value of free cash flow, and the EP approach looks at the company's earnings.

The DCF approach began by calculating free cash flows, which was done by calculating net operating profit after taxes (NOPLAT) and subtracting that from that year's capital expenditures, also known as change in invested capital. Those free cash flows were then discounted by the WACC, which our team calculated to be 10.17%. To end, non-operating assets were added, and non-operating liabilities were subtracted from the value of equity and provided the final price after dividing by the number of shares outstanding. For Terex, the value that the DCF model provided was \$70.55. As for EP, each year's economic profit was forecasted and then discounted by the same WACC previously mentioned. Each year's economic profit was calculated by multiplying the previous year's invested capital, also known as beginning invested capital, by the difference between the return on invested capital (ROIC) and the WACC. After, the same non-operating adjustments from the DCF were made to EP, leading to the exact same price of \$70.55.

Our team believes that these models are the best estimation of our target price. This is due to the fact that \$70.55, rounded up to \$71, fits right in the middle of the target range (\$57 - \$79).

### **Dividend Discount Value (DDM)**

The DDM bases the intrinsic value of a stock on Terex's ability to pay dividends in the future. In the past three years, the company has been able to pay

a dividend of \$0.50 per common share for 2021 and 2022, and \$0.70 per common share for 2023. Previous to those three years, the company either did not pay a dividend, or paid an even smaller one in 2016 and 2017 at \$0.30 per common share, and \$0.40 per common share in 2019. To forecast dividends for the future, our team took the average payout ratio (total dividends divided by net income) from the previous decade of 26.29% and multiplied it by each year's forecasted net income. Then, in order to get the final value, these dividends were discounted, leading to a final intrinsic price of \$57.32. Since this value is at the low end of the target range and below Terex's current stock price, our team did not place much value on this model and instead placed more focus on the previously mentioned DCF and EP models.

### **Relative Valuation**

The last model that our team worked with was the relative valuation model, where we compared Terex to key players within the construction and industrial machinery industry. These players are Caterpillar, Oshkosh, Wabash, Cummins, Manitowoc, and PACCAR. The way that we compared these companies to each other was by calculating P/E (EPS24), P/E (EPS25), PEG (EPS24), and PEG (EPS25). When comparing the prices that the model calculated to the target range, we found that the PEG ratios for both 2024 and 2025 were too low. This makes sense, as Terex is one of the smaller companies in this industry, especially when compared to a major player like Caterpillar. But the strongest metric provided was EPS for 2024 at \$78.66, which fits at the high end of our target range.

### **Cost of Debt**

We calculated Terex's cost of debt to be 6.59%. We calculated this by using Bloomberg to find the US Corporate Bond 10-year yield curve for BB+, BB, and BB-rated bonds. Terex has limited public debt, with their only bond being issued 5 years ago in a vastly different lending environment. Terex's marginal tax rate is 16.7% which results in a final cost of debt to be 5.49%.

## Cost of Equity

The cost of equity for Terex was calculated by using the Capital Asset Pricing Model. For a risk-free rate, we used the yield on a 10-year US treasury bond, which is 4.50%. Our beta is calculated from running a regression against the S&P 500 of 5-year monthly returns to get a beta of 1.57. For equity risk premium we used Damodaran's, April 1, 2024, trailing 12-month cash yield. This resulted in a cost of equity of 11.15%.

## WACC

The weighted average cost of capital for Terex was calculated by using the cost of equity and the cost of debt. We found the market value of equity by multiplying our current stock price by the current shares outstanding. To calculate the market value of debt we took our short-term debt, long-term debt, and present value of operating leases. Next, we summed these totals and divided the market value of equity and the market value of debt to calculate the market value weights of debt and equity. Once we had these weights, we multiplied the cost of debt by the market value weight of debt, and we multiplied the cost of equity by the market value weight of equity, to get our WACC of 10.17%.

## **Sensitivity Analysis**

### ERP vs. Beta

We examined the impact of changing the equity risk premium compared to the beta to see what impacts are made on the intrinsic value. The Beta measures Terex's volatility compared to the overall market. As a result of the beta being greater than one, it implies that the price is more volatile than the S&P 500. The equity risk premium shows us the additional return investors require for taking on more risk. The sensitivity table below depicts the impacts of these variables on Terex's stock price, ranging from \$95.20 to \$53.12. ERP is provided by Source 3.

	Beta							
	70.55	1.27	1.37	1.47	1.57	1.67	1.77	1.87
ERP	3.78%	95.20	89.09	83.61	78.67	74.20	70.13	66.41
3.93%	92.03	86.04	80.67	75.84	71.46	67.48	63.85	
4.08%	89.04	83.16	77.90	73.16	68.88	65.00	61.45	
4.23%	86.21	80.44	75.28	70.64	66.45	62.65	59.18	
4.38%	83.53	77.86	72.80	68.26	64.16	60.44	57.05	
4.53%	80.98	75.42	70.46	66.00	61.99	58.35	55.03	
4.68%	78.56	73.10	68.23	63.87	59.93	56.37	53.12	

### CV ROIC vs. WACC

We then looked at the change from altering the CV ROIC compared to the weighted average cost of capital (WACC). These factors can greatly affect the output of the final implied share price due to the changes within the DCF and EP models. The continuing value of return on invested capital is a critical metric that measures a company's ability to generate returns from its invested capital. Due to its distant future, it can be challenging to predict its value and is essential to test it since it makes up a large portion of the enterprise value. The WACC can fluctuate as a result of many factors including the market risk premium, cost of debt, and risk-free rate. It is essential to see what changes in these variables can do to the overall share price. The table below illustrates the impacts of these variables on the overall value, ranging from \$82.83 to \$60.32.

	CV ROIC							
	70.55	15.92%	16.92%	17.92%	18.92%	19.92%	20.92%	21.92%
WACC	9.42%	78.52	79.45	80.28	81.02	81.68	82.28	82.83
9.67%	74.92	75.80	76.58	77.28	77.91	78.48	79.00	
9.92%	71.57	72.41	73.15	73.82	74.42	74.96	75.45	
10.17%	68.46	69.26	69.97	70.60	71.17	71.69	72.16	
10.42%	65.56	66.32	67.00	67.60	68.15	68.64	69.09	
10.67%	62.85	63.58	64.22	64.80	65.32	65.79	66.22	
10.92%	60.32	61.01	61.63	62.18	62.68	63.13	63.53	

### Marginal Tax Rate vs. Normal Cash Estimate

Next, we contrasted the impact of adjusting the marginal tax rate compared to the normal cash estimate. Examining the different impacts of the marginal tax rate is crucial for the valuation of a business. When the tax rate for a given company increases, it results in lower cash flow and earnings. Changes in the normal cash estimate can sway an investor's perception of its financial health and future prospects. An increase can paint the picture that a company is not deploying its cash effectively. Where a decrease could be interpreted as a sign of

management's confidence in the company's future. The table below shows the impacts of these variables on the overall value, ranging from \$72.52 to \$67.98.

Normal Cash Estimate	Marginal Tax Rate							
	70.55	17.00%	17.50%	18.00%	18.50%	19.00%	19.50%	20.00%
5.04%	72.52	71.99	71.46	70.93	70.40	69.87	69.34	
5.54%	72.40	71.87	71.34	70.81	70.27	69.75	69.22	
6.04%	72.27	71.74	71.21	70.68	70.15	69.62	69.09	
6.54%	72.15	71.62	71.09	70.55	70.02	69.49	68.97	
7.04%	72.02	71.49	70.96	70.43	69.90	69.37	68.84	
7.54%	71.89	71.36	70.83	70.30	69.77	69.24	68.71	
8.04%	71.76	71.23	70.70	70.17	69.64	69.11	68.58	

## Risk Free Rate vs. CV Growth of NOPLAT

Following, we compared the impact of a change in the risk-free rate compared to a change in the CV growth of NOPLAT. Risk risk-free rate is the theoretical risk-free investment return which is typically denoted by the yield on the 30-year U.S treasury bond. A change in the rate impacts the weighted average cost of capital and in return, alters the implied value. Predicting the continuing value of NOPLAT is tricky due to how far out in the future it is. However, it is essential to test due to the size it composes in the enterprise value. Below is the table depicting these variables and the changes it has on the value, ranging from \$72.89 to \$68.38.

CV Growth of NOPLAT	Risk Free Rate							
	70.55	4.35%	4.40%	4.45%	4.50%	4.55%	4.60%	4.65%
2.85%	71.42	70.90	70.39	69.88	69.37	68.88	68.38	
2.90%	71.66	71.13	70.61	70.10	69.59	69.09	68.59	
2.95%	71.90	71.37	70.84	70.33	69.81	69.31	68.81	
3.00%	72.14	71.61	71.08	70.55	70.04	69.53	69.02	
3.05%	72.39	71.85	71.31	70.79	70.27	69.75	69.24	
3.10%	72.64	72.09	71.55	71.02	70.50	69.98	69.47	
3.15%	72.89	72.34	71.80	71.26	70.73	70.21	69.69	

## Pre-Tax Cost of Debt vs. SG&A (% of sales)

We then compared the changes in the pre-tax cost of debt with the SG&A as a percent of sales. The pre-tax cost of debt is an important measure as a result of the debt that sits on a company's balance sheet. It can also alter a company's net income which will lead to their retained earnings. Selling, general, and administrative expenses represent the day-to-day operations of a company that are not directly tied to producing goods or services. An

increase can reduce profitability which will impact a company's net income, though could also be seen as a growth initiative such as expanding marketing efforts. Below is the table illustrating the impacts of these variables on the overall value, ranging from \$83.96 to \$58.79.

SG&A % of Sales	Pre Tax Cost of Debt							
	70.55	2.09%	3.59%	5.09%	6.59%	8.19%	9.69%	11.19%
9.83%	83.96	81.86	79.88	77.99	76.08	74.37	72.74	
10.08%	81.30	79.27	77.34	75.51	73.66	72.00	70.42	
10.33%	78.65	76.68	74.81	73.03	71.23	69.63	68.09	
10.58%	75.99	74.08	72.28	70.56	68.81	67.26	65.77	
10.83%	73.34	71.49	69.74	68.08	66.39	64.88	63.44	
11.08%	70.68	68.90	67.21	65.60	63.97	62.51	61.12	
11.33%	68.03	66.31	64.68	63.13	61.55	60.14	58.79	

## COGS (% of Sales) vs. Depreciation Rate

Finally, we looked at the impacts of the cost of goods sold (COGS) as a percent of sales compared to the depreciation rate. As an industrial manufacturer, COGS eats away a large portion of their revenues. This can decrease the amount of capital for reinvestment which hinders their growth potential. The depreciation rate is essential for an industrial company due to its large amount of machinery and factories in which products are built. It is a non-cash expense that can reduce a company's reported net income. The sensitivity table below illustrates the impacts of these variables on Terex's stock price, ranging from \$77.50 to \$64.95.

Depreciation Rate	COGS % of Sales							
	70.55	78.69%	78.84%	78.99%	79.14%	79.29%	79.44%	79.59%
4.68%	77.50	76.01	74.53	73.04	71.56	70.07	68.58	
6.68%	76.48	74.99	73.51	72.02	70.54	69.05	67.56	
8.68%	75.66	74.17	72.69	71.20	69.72	68.23	66.74	
10.68%	75.01	73.53	72.04	70.55	69.07	67.58	66.10	
12.68%	74.51	73.03	71.54	70.06	68.57	67.08	65.60	
14.68%	74.14	72.65	71.17	69.68	68.19	66.71	65.22	
16.68%	73.87	72.38	70.90	69.41	67.92	66.44	64.95	

## Disclaimer

This report was created by students enrolled in the Security Analysis (6F:112) class at the University of Iowa. The report was originally created to offer an internal investment recommendation for the University of Iowa Krause Fund and its advisory board. The report also provides potential employers and other interested parties an example of the students' skills, knowledge and abilities. Members of the Krause Fund are not registered investment advisors, brokers or officially licensed financial professionals. The investment advice contained in this report does not represent an offer or solicitation to buy or sell any of the securities mentioned. Unless otherwise noted, facts and figures included in this report are from publicly available sources. This report is not a complete compilation of data, and its accuracy is not guaranteed. From time to time, the University of Iowa, its faculty, staff, students, or the Krause Fund may hold a financial interest in the companies mentioned in this report.

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**Terex**

*Revenue Decomposition*

<b>Fiscal Years Ending Dec. 31</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024E</b>	<b>2025E</b>	<b>2026E</b>	<b>2027E</b>	<b>2028E</b>	<b>2029E</b>	<b>2030E</b>
<b>Total Revenue</b>	3886.8	4417.7	5151.5	5200.0	5876.0	6443.0	6752.3	7042.6	7394.8	7764.5
Total Revenue Growth	26.3%	13.7%	16.6%	0.9%	13.0%	9.7%	4.8%	4.3%	5.0%	5.0%
<b>Sales by Business Segment</b>				15.50%	13.00%	9.65%	4.80%	4.30%	5.00%	5.00%
Aerial Work Platforms	2178.8	2483.6	2921.7	2949.2	3332.6	3654.2	3829.6	3994.3	4194.0	4403.7
Growth	22.2%	14.0%	17.6%	0.9%	13.0%	9.7%	4.8%	4.3%	5.0%	5.0%
Materials Processing	1691.8	1941.6	2227.0	2248.0	2540.2	2785.3	2919.0	3044.5	3196.8	3356.6
Growth	34.6%	14.8%	14.7%	0.9%	13.0%	9.7%	4.8%	4.3%	5.0%	5.0%
Corporate/ Other	16.2	-7.5	2.8	2.8	3.2	3.5	3.7	3.8	4.0	4.2
Growth	-126.5%	316.0%	367.9%	0.9%	11.5%	8.8%	4.6%	4.1%	4.8%	4.8%
<b>Sales by Geographic Region</b>										
North America	2109.5	2497.2	3031.0	3059.5	3457.3	3790.9	3972.9	4143.7	4350.9	4568.4
Growth	20.9%	18.4%	21.4%	0.9%	13.0%	9.7%	4.8%	4.3%	5.0%	5.0%
Western Europe	862.8	953.9	1043.6	1053.4	1190.4	1305.2	1367.9	1426.7	1498.0	1573.0
Growth	41.4%	10.6%	9.4%	0.9%	13.0%	9.6%	4.8%	4.3%	5.0%	5.0%
Asia Pacific	662.7	612.4	661.6	667.8	754.6	827.5	867.2	904.5	949.7	997.2
Growth	25.0%	-7.6%	8.0%	0.9%	13.0%	9.7%	4.8%	4.3%	5.0%	5.0%
Rest of World	251.8	354.2	415.3	419.2	473.7	519.4	544.4	567.8	596.1	626.0
Growth	31.8%	40.7%	17.3%	0.9%	13.0%	9.7%	4.8%	4.3%	5.0%	5.0%

Terex

Income Statement

<i>Fiscal Years Ending Dec. 31</i>	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Net sales	3886.8	4417.7	5151.5	5200.0	5876.0	6443.0	6752.3	7042.6	7394.8	7764.5
Cost of goods sold	3079.2	3499.3	3918.5	4115.3	4650.3	5099.0	5343.8	5573.6	5852.2	6144.8
<b>Gross profit</b>	<b>757.4</b>	<b>871.2</b>	<b>1176.6</b>	<b>1084.7</b>	<b>1225.7</b>	<b>1344.0</b>	<b>1408.5</b>	<b>1469.1</b>	<b>1542.6</b>	<b>1619.7</b>
Depreciaton and Amortization	50.2	47.2	56.4	63.3	71.9	73.9	76.1	77.4	80.6	82.8
Selling, general & administrative expenses	429.4	451.2	540.1	550.2	621.7	681.7	714.4	745.1	782.4	821.5
Goodwill & intangible asset impairment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Income (loss) from operations</b>	<b>328.0</b>	<b>420.0</b>	<b>636.5</b>	<b>471.3</b>	<b>532.2</b>	<b>588.5</b>	<b>618.1</b>	<b>646.6</b>	<b>679.6</b>	<b>715.4</b>
Interest income	3.7	2.8	7.6	16.7	24.6	29.4	33.9	35.9	35.8	37.8
Interest expense	51.5	49.1	63.3	41.1	54.7	60.1	64.7	67.3	69.8	72.8
Gain (loss) on early extinguishment of debt	-29.4	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amortization of debt issuance costs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other income (expense) - net	13.0	-6.8	-1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Income (loss) from continuing operations before income taxes</b>	<b>263.8</b>	<b>366.6</b>	<b>579.7</b>	<b>446.9</b>	<b>502.1</b>	<b>557.8</b>	<b>587.3</b>	<b>615.2</b>	<b>645.6</b>	<b>680.4</b>
Provision for (benefit from) income taxes	46.3	66.4	63.0	82.7	92.9	103.2	108.6	113.8	119.4	125.9
Income (loss) from continuing operations	217.5	300.2	516.7	364.2	409.2	454.6	478.6	501.4	526.2	554.5
Income (loss) from discontinued operations - net of tax	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gain (loss) on disposition of discontinued operations - net of tax	3.4	-0.2	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Net income (loss)</b>	<b>220.9</b>	<b>300.0</b>	<b>518.0</b>	<b>364.2</b>	<b>409.2</b>	<b>454.6</b>	<b>478.6</b>	<b>501.4</b>	<b>526.2</b>	<b>554.5</b>
Net income (loss) per share - basic	3.2	4.4	7.7	5.5	6.2	6.9	7.4	7.9	8.4	9.0
Dividends per common share	0.5	0.5	0.7	0.7	0.7	0.8	0.9	0.9	1.0	1.1
Year end common shares outstanding	69.2	66.8	66.1	65.8	65.8	65.8	64.5	63.4	62.3	61.4
Dividends Paid	33.2	34.7	43.6	42.9	48.2	53.6	56.4	59.1	62.0	65.4

Terex  
Balance Sheet

	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Cash & cash equivalents	266.9	304.1	370.7	578.8	784.0	1042.0	1305.7	1590.4	1890.5	2213.3
Accounts receivable	507.7	547.5	547.8	620.2	700.8	768.4	805.3	840.0	882.0	926.1
Inventories	813.5	988.4	1186	1106.6	1250.5	1371.1	1437.0	1498.7	1573.7	1652.4
Prepaid & other current assets	179.7	122	140.7	227.3	256.8	281.6	295.1	307.8	323.2	339.3
<b>Total current assets</b>	<b>1767.8</b>	<b>1962</b>	<b>2245.2</b>	<b>2532.9</b>	<b>2992.1</b>	<b>3463.1</b>	<b>3843.1</b>	<b>4236.9</b>	<b>4669.3</b>	<b>5131.1</b>
Property, plant & equipment - gross	816.8	848.7	995	1140.0	1232.3	1326.8	1423.7	1523.1	1624.9	1729.3
Less: accumulated depreciation	387.2	383.1	425.2	488.5	560.3	634.2	710.3	787.7	868.2	951.1
Property, plant & equipment - net	429.6	465.6	569.8	651.5	671.9	692.6	713.5	735.4	756.7	778.2
Goodwill	280.1	284.4	294.6	294.6	294.6	294.6	294.6	294.6	294.6	294.6
Intangible assets - net	13.4	17.4	15.7	13.3	11.0	8.9	6.8	5.6	3.6	1.6
Other assets	372.6	388.7	490.2	523.8	591.9	649.0	680.2	709.4	744.9	782.2
<b>Total assets</b>	<b>2863.5</b>	<b>3118.1</b>	<b>3615.5</b>	<b>4016.1</b>	<b>4561.5</b>	<b>5108.3</b>	<b>5538.2</b>	<b>5981.9</b>	<b>6469.1</b>	<b>6987.6</b>
Notes payable & current portion of long-term debt	5.6	1.9	2.8	7.0	19.9	21.5	22.8	24.0	25.3	26.7
Trade accounts payable	537.7	624.6	702.6	662.3	748.4	820.7	860.1	897.0	941.9	989.0
Accrued compensation & benefits	108.5	103	135.6	145.4	164.3	180.1	188.8	196.9	206.7	217.1
Accrued warranties & product liability	39.2	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other current liabilities	218.9	269.1	278.2	275.5	311.3	341.3	357.7	373.1	391.8	411.4
Current liabilities held for sale	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total current liabilities</b>	<b>909.9</b>	<b>998.6</b>	<b>1119.2</b>	<b>1090.2</b>	<b>1244.0</b>	<b>1363.7</b>	<b>1429.3</b>	<b>1491.0</b>	<b>1565.7</b>	<b>1644.1</b>
Long-term debt, less current portion	668.5	773.6	620.4	822.1	891.2	959.2	998.0	1035.2	1079.0	1124.8
Retirement plans	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other non-current liabilities	175.5	164.7	203.6	171.0	193.2	211.8	222.0	231.5	243.1	255.3
<b>Total liabilities</b>	<b>1753.9</b>	<b>1936.9</b>	<b>1943.2</b>	<b>2083.2</b>	<b>2328.3</b>	<b>2534.7</b>	<b>2649.4</b>	<b>2757.8</b>	<b>2887.8</b>	<b>3024.2</b>
Common stock and Additional Paid in Capital	860.9	882.5	907	953.3	999.6	1045.9	1045.9	1045.9	1045.9	1045.9
Retained earnings (accumulated deficit)	936.9	1200.6	1674.8	1996.1	2357.1	2758.1	3180.3	3622.6	4086.7	4575.8
Accumulated other comprehensive income (loss)	-228.5	-341.6	-287.1	-287.1	-287.1	-287.1	-287.1	-287.1	-287.1	-287.1
Less cost of shares of common stock in treasury	459.7	560.3	622.4	729.4	836.3	943.3	1050.3	1157.2	1264.2	1371.2
Total Terex Corporation stockholders' equity (deficit)	1109.6	1181.2	1672.3	1932.9	2233.2	2573.6	2888.8	3224.1	3581.2	3963.4
Noncontrolling interest	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total stockholders' equity</b>	<b>1109.6</b>	<b>1181.2</b>	<b>1672.3</b>	<b>1932.9</b>	<b>2233.2</b>	<b>2573.6</b>	<b>2888.8</b>	<b>3224.1</b>	<b>3581.2</b>	<b>3963.4</b>

Terex

Historical Cash Flow Statement

<i>Fiscal Years Ending Dec. 31</i>	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Net income (loss)	319.5	149	-175.5	128.7	113.7	54.4	-10.6	220.9	300	518
Depreciation & amortization	155.7	128.2	96.7	66.5	59.7	49.6	49.7	50.2	47.2	56.4
Loss (gain) on disposition of discontinued operations	-58.6	-3.4	-3.5	-68.7	-2.4	-0.1	19.2	-3.4	-	-
Deferred taxes	-17.8	-2.6	-137.6	37.6	-9.1	-17.6	5.6	1.2	-	-38.1
Impairments	-	-	70	6.8	9	83.6	5.5	6.3	-	-
Loss (gain) on sale of assets	16.6	-1	-5.8	-58	-1.9	-9.8	-0.4	-7.4	-	-
Loss on early extinguishment of debt	2.6	0.1	-	52.6	0.7	-	-	29.4	-	-
Stock-based compensation expense	46.5	38.5	37.8	38.5	36.7	43.1	23.8	33.1	30.3	43.6
Inventory & other non-cash charges	32.3	72.9	60.6	34	30.3	47.6	20.6	14.7	22	9.4
Trade receivables	-4.2	74.1	33	-0.5	-107.9	176.1	16.1	-139	-54.7	11
Inventories	-27.1	-90.6	97.3	-33.5	-284.2	20.3	261.6	-229.5	-206.1	-199.6
Trade accounts payable	85.8	41.7	-21	25	213.2	-220.1	-156.9	173	96.3	57.5
Other assets & liabilities	-17.4	-181.5	165.6	-29.8	-25.1	-57	8.8	140.7	37.5	2.3
Other operating activities, net	20.3	18.5	-	-	-	-	-	-	-	-
Foreign exchange & other operating activities, net	-	-	-43.5	-31.5	-6.3	3.3	-17.6	3.2	-11.3	-1.2
<b>Net cash flows from operating activities</b>	<b>410.7</b>	<b>212.9</b>	<b>367</b>	<b>153</b>	<b>94.2</b>	<b>173.4</b>	<b>225.4</b>	<b>293.4</b>	<b>261.2</b>	<b>459.3</b>
Capital expenditures	-81.5	-103.8	-73	-43.5	-103.8	-108.9	-64.5	-59.7	-109.6	-127.2
Acquisitions, net of cash acquired	-	-71.2	-7	-	-6.9	-	-	-	-	-
Proceeds from sale of capital assets	-	-	-	-	-	4.3	2.7	1.9	-	33.6
Acquisitions, net of cash acquired, & investments	-	-	-	-	-	-	-	-42.7	-50.1	-
Proceeds (payments) from disposition of discontinued operations	162.2	-0.2	3.5	775.7	2.5	177.7	15.8	-	-	-23.8
Proceeds from sale of assets	43.3	3.1	67.2	803.4	2.3	-	-	-	-	-
Other investing activities, net	-9	-0.6	-2.5	-	0.2	-	-	-	5.6	3
<b>Net cash flows from investing activities</b>	<b>95</b>	<b>-172.7</b>	<b>-11.8</b>	<b>1535.6</b>	<b>-85.9</b>	<b>103.8</b>	<b>-38.5</b>	<b>-102.2</b>	<b>-154.1</b>	<b>-114.4</b>
Repayments of debt	-1801.8	-1397.8	-1286.3	-1594.1	-1150.1	-1660.5	-176	-1103.5	-224.4	-401.5
Proceeds from issuance of debt	1684.2	1462.8	1097.7	1010.7	1382.3	1616.6	170	600.1	320.9	242.8
Share repurchases	-171.2	-50.8	-82.7	-924.9	-427.5	-7.4	-56	-3	-101.3	-62.8
Dividends paid	-21.8	-25.8	-30	-29.5	-30	-31.4	-8.4	-33.5	-35.6	-43.2
Other financing activities, net	-5.8	-1.3	-1.7	-32.3	-19.1	-21	-12.4	-23.3	-14.5	-23.1
<b>Net cash flows from financing activities</b>	<b>-396.7</b>	<b>-14.4</b>	<b>-300.1</b>	<b>-1606.5</b>	<b>-244.9</b>	<b>-103.7</b>	<b>-82.8</b>	<b>-580.1</b>	<b>-54.9</b>	<b>-287.8</b>
Effect of exchange rate changes on cash & cash equivalents	-38.9	-37.5	-19.7	46.1	-21.4	-5.5	25.9	-14.3	-15	9.5
Net increase (decrease) in cash & cash equivalents	70.1	-11.7	35.4	128.2	-258	168	130	-403.2	37.2	66.6
Cash & cash equivalents at beginning of year	408.1	478.2	466.5	501.9	630.1	372.1	540.1	670.1	266.9	304.1
<b>Cash &amp; cash equivalents at end of year</b>	<b>478.2</b>	<b>466.5</b>	<b>501.9</b>	<b>630.1</b>	<b>372.1</b>	<b>540.1</b>	<b>670.1</b>	<b>266.9</b>	<b>304.1</b>	<b>370.7</b>

Terex

Forecasted Cash Flow Statement

Fiscal Years Ending Dec. 31	2024E	2025E	2026E	2027E	2028E	2029E	2030E
<b>Operating Activities</b>							
Net income (loss)	364.2	409.2	454.6	478.6	501.4	526.2	554.5
Depreciation & amortization	63.3	71.9	73.9	76.1	77.4	80.6	82.8
<b>Changes in Current A/L:</b>							
Change in accounts receivable	-72.4	-80.6	-67.6	-36.9	-34.6	-42.0	-44.1
Change in inventory	79.4	-143.9	-120.7	-65.8	-61.8	-74.9	-78.7
Change in accounts payable	-40.3	86.1	72.2	39.4	37.0	44.9	47.1
Change in prepaids and other current assets	-86.6	-29.5	-24.8	-13.5	-12.7	-15.4	-16.2
Change in accrued comp and benefits	9.8	18.9	15.9	8.6	8.1	9.8	10.3
Change in accrued warranties and product liability	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Change in other current liabilities	-2.7	35.8	30.0	16.4	15.4	18.7	19.6
Change in other non-current liabilities	-32.6	22.2	18.6	10.2	9.5	11.6	12.2
Change in intangible assets	2.4	2.3	2.1	2.1	1.2	2.0	2.0
Change in accumulated other comprehensive income (loss)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Net cash flows from operating activities</b>	<b>284.5</b>	<b>392.4</b>	<b>454.3</b>	<b>515.2</b>	<b>540.9</b>	<b>561.3</b>	<b>589.6</b>
<b>Investing Activities</b>							
Change in CapEx	-145.0	-92.3	-94.6	-96.9	-99.3	-101.8	-104.4
Change in Other Assets	-33.6	-68.1	-57.1	-31.2	-29.2	-35.5	-37.2
Change in retirement plans	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Net cash flows from investing activities</b>	<b>-178.6</b>	<b>-160.3</b>	<b>-151.7</b>	<b>-128.1</b>	<b>-128.6</b>	<b>-137.3</b>	<b>-141.6</b>
<b>Financing Activities</b>							
Change in notes payable & current portion of long-term debt	4.2	12.9	1.6	1.2	1.2	1.3	1.4
Change in Goodwill	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Change in long term debt minus current portion	201.7	69.1	68.0	38.9	37.2	43.8	45.8
Change in common stock and additional paid in capital	46.3	46.3	46.3	0.0	0.0	0.0	0.0
Dividends Paid	-42.9	-48.2	-53.6	-56.4	-59.1	-62.0	-65.4
Change in less cost of shares of common stock in treasury	-107.0	-107.0	-107.0	-107.0	-107.0	-107.0	-107.0
<b>Net cash flows from financing activities</b>	<b>102.2</b>	<b>-26.9</b>	<b>-44.6</b>	<b>-123.3</b>	<b>-127.7</b>	<b>-123.9</b>	<b>-125.1</b>
Net increase (decrease) in cash & cash equivalents	208.1	205.2	258.0	263.8	284.6	300.1	322.8
Cash & cash equivalents at beginning of year	370.7	578.8	784.0	1042.0	1305.7	1590.4	1890.5
<b>Cash &amp; cash equivalents at end of year</b>	<b>578.8</b>	<b>784.0</b>	<b>1042.0</b>	<b>1305.7</b>	<b>1590.4</b>	<b>1890.5</b>	<b>2213.3</b>

Terex

Common Size Income Statement

<b>Fiscal Years Ending Dec. 31</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024E</b>	<b>2025E</b>	<b>2026E</b>	<b>2027E</b>	<b>2028E</b>	<b>2029E</b>	<b>2030E</b>
Net sales	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of goods sold	79.2%	79.2%	76.1%	79.1%	79.1%	79.1%	79.1%	79.1%	79.1%	79.1%
<b>Gross profit</b>	<b>19.5%</b>	<b>19.7%</b>	<b>22.8%</b>	<b>20.9%</b>						
Depreciaton and Amortization	1.3%	1.1%	1.1%	1.2%	1.2%	1.1%	1.1%	1.1%	1.1%	1.1%
Selling, general & administrative expenses	11.0%	10.2%	10.5%	10.6%	10.6%	10.6%	10.6%	10.6%	10.6%	10.6%
Goodwill & intangible asset impairment	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Income (loss) from operations</b>	<b>8.4%</b>	<b>9.5%</b>	<b>12.4%</b>	<b>9.1%</b>	<b>9.1%</b>	<b>9.1%</b>	<b>9.2%</b>	<b>9.2%</b>	<b>9.2%</b>	<b>9.2%</b>
Interest income	0.1%	0.1%	0.1%	0.3%	0.4%	0.5%	0.5%	0.5%	0.5%	0.5%
Interest expense	1.3%	1.1%	1.2%	0.8%	0.9%	0.9%	1.0%	1.0%	0.9%	0.9%
Gain (loss) on early extinguishment of debt	-0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Amortization of debt issuance costs	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other income (expense) - net	0.3%	-0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Income (loss) from continuing operations before income taxes</b>	<b>6.8%</b>	<b>8.3%</b>	<b>11.3%</b>	<b>8.6%</b>	<b>8.5%</b>	<b>8.7%</b>	<b>8.7%</b>	<b>8.7%</b>	<b>8.7%</b>	<b>8.8%</b>
Provision for (benefit from) income taxes	1.2%	1.5%	1.2%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
<b>Income (loss) from continuing operations</b>	<b>5.6%</b>	<b>6.8%</b>	<b>10.0%</b>	<b>7.0%</b>	<b>7.0%</b>	<b>7.1%</b>	<b>7.1%</b>	<b>7.1%</b>	<b>7.1%</b>	<b>7.1%</b>
Income (loss) from discontinued operations - net of tax	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Gain (loss) on disposition of discontinued operations - net of tax	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Net income (loss)</b>	<b>5.7%</b>	<b>6.8%</b>	<b>10.1%</b>	<b>7.0%</b>	<b>7.0%</b>	<b>7.1%</b>	<b>7.1%</b>	<b>7.1%</b>	<b>7.1%</b>	<b>7.1%</b>

Terex

Common Size Balance Sheet

<b>Fiscal Years Ending Dec. 31</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024E</b>	<b>2025E</b>	<b>2026E</b>	<b>2027E</b>	<b>2028E</b>	<b>2029E</b>	<b>2030E</b>
Cash & cash equivalents	6.9%	6.9%	7.2%	11.1%	13.3%	16.2%	19.3%	22.6%	25.6%	28.5%
Accounts receivable	13.1%	12.4%	10.6%	11.9%	11.9%	11.9%	11.9%	11.9%	11.9%	11.9%
Inventories	20.9%	22.4%	23.0%	21.3%	21.3%	21.3%	21.3%	21.3%	21.3%	21.3%
Prepaid & other current assets	4.6%	2.8%	2.7%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%	4.4%
<b>Total current assets</b>	<b>45.5%</b>	<b>44.4%</b>	<b>43.6%</b>	<b>48.7%</b>	<b>50.9%</b>	<b>53.8%</b>	<b>56.9%</b>	<b>60.2%</b>	<b>63.1%</b>	<b>66.1%</b>
Property, plant & equipment - gross	21.0%	19.2%	19.3%	21.9%	21.0%	20.6%	21.1%	21.6%	22.0%	22.3%
Less: accumulated depreciation	10.0%	8.7%	8.3%	9.4%	9.5%	9.8%	10.5%	11.2%	11.7%	12.2%
Property, plant & equipment - net	11.1%	10.5%	11.1%	12.5%	11.4%	10.7%	10.6%	10.4%	10.2%	10.0%
Goodwill	7.2%	6.4%	5.7%	5.7%	5.0%	4.6%	4.4%	4.2%	4.0%	3.8%
Intangible assets - net	0.3%	0.4%	0.3%	0.3%	0.2%	0.1%	0.1%	0.1%	0.0%	0.0%
Other assets	9.6%	8.8%	9.5%	10.1%	10.1%	10.1%	10.1%	10.1%	10.1%	10.1%
<b>Total assets</b>	<b>73.7%</b>	<b>70.6%</b>	<b>70.2%</b>	<b>77.2%</b>	<b>77.6%</b>	<b>79.3%</b>	<b>82.0%</b>	<b>84.9%</b>	<b>87.5%</b>	<b>90.0%</b>
Notes payable & current portion of long-term debt	0.1%	0.0%	0.1%	0.1%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Trade accounts payable	13.8%	14.1%	13.6%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%	12.7%
Accrued compensation & benefits	2.8%	2.3%	2.6%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Accrued warranties & product liability	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other current liabilities	5.6%	6.1%	5.4%	5.3%	5.3%	5.3%	5.3%	5.3%	5.3%	5.3%
Current liabilities held for sale	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total current liabilities</b>	<b>23.4%</b>	<b>22.6%</b>	<b>21.7%</b>	<b>21.0%</b>	<b>21.2%</b>	<b>21.2%</b>	<b>21.2%</b>	<b>21.2%</b>	<b>21.2%</b>	<b>21.2%</b>
Long-term debt, less current portion	17.2%	17.5%	12.0%	15.8%	15.2%	14.9%	14.8%	14.7%	14.6%	14.5%
Retirement plans	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other non-current liabilities	4.5%	3.7%	4.0%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%
<b>Total liabilities</b>	<b>45.1%</b>	<b>43.8%</b>	<b>37.7%</b>	<b>40.1%</b>	<b>39.6%</b>	<b>39.3%</b>	<b>39.2%</b>	<b>39.2%</b>	<b>39.1%</b>	<b>38.9%</b>
Common stock and Additional Paid in Capital	22.1%	20.0%	17.6%	18.3%	17.0%	16.2%	15.5%	14.9%	14.1%	13.5%
Retained earnings (accumulated deficit)	24.1%	27.2%	32.5%	38.4%	40.1%	42.8%	47.1%	51.4%	55.3%	58.9%
Accumulated other comprehensive income (loss)	-5.9%	-7.7%	-5.6%	-5.5%	-4.9%	-4.5%	-4.3%	-4.1%	-3.9%	-3.7%
Less cost of shares of common stock in treasury	11.8%	12.7%	12.1%	14.0%	14.2%	14.6%	15.6%	16.4%	17.1%	17.7%
Total Terex Corporation stockholders' equity (deficit)	28.5%	26.7%	32.5%	37.2%	38.0%	39.9%	42.8%	45.8%	48.4%	51.0%
Noncontrolling interest	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Total stockholders' equity</b>	<b>28.5%</b>	<b>26.7%</b>	<b>32.5%</b>	<b>37.2%</b>	<b>38.0%</b>	<b>39.9%</b>	<b>42.8%</b>	<b>45.8%</b>	<b>48.4%</b>	<b>51.0%</b>

Terex  
Value Driver Estimation

Fiscal Years Ending Dec. 31	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E
<b>NOPLAT:</b>										
<b>EBIT</b>										
Operating Revenues	3886.8	4417.7	5151.5	5200.0	5876.0	6443.0	6752.3	7042.6	7394.8	7764.5
COGS	3079.2	3499.3	3918.5	4115.3	4650.3	5099.0	5343.8	5573.6	5852.2	6144.8
SG&A	429.4	451.2	540.1	550.2	621.7	681.7	714.4	745.1	782.4	821.5
Depreciation and Amortization of Non-Goodwill Intangibles	50.2	47.2	56.4	63.3	71.9	73.9	76.1	77.4	80.6	82.8
Implied Interest on Operating Leases	6.8	6.5	5.9	8.1	8.3	8.5	8.7	9.0	9.2	9.4
<b>TOTAL</b>	<b>334.8</b>	<b>426.5</b>	<b>642.4</b>	<b>479.4</b>	<b>540.5</b>	<b>597.0</b>	<b>626.8</b>	<b>655.6</b>	<b>688.8</b>	<b>724.8</b>
<b>Adjusted Tax</b>										
Total Income Tax Provision	46.3	66.4	63.0	82.7	92.9	103.2	108.6	113.8	119.4	125.9
Tax Shield on Interest Expense	8.6	8.2	10.6	6.9	9.1	10.0	10.8	11.2	11.7	12.2
Tax on Interest or Investment Income	0.6	0.5	1.3	2.8	4.1	4.9	5.7	6.0	6.0	6.3
Tax on Implied Interest on Operating Leases	1.1	1.1	1.0	1.4	1.4	1.4	1.5	1.5	1.5	1.6
Other Operating Expenses	-2.2	1.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Gain (loss) on early extinguishment of debt	4.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Amortization of debt issuance costs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Goodwill & intangible asset impairment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>TOTAL</b>	<b>58.2</b>	<b>76.4</b>	<b>73.5</b>	<b>88.1</b>	<b>99.3</b>	<b>109.7</b>	<b>115.2</b>	<b>120.6</b>	<b>126.7</b>	<b>133.3</b>
<b>Change in Deferred Taxes</b>	<b>1.2</b>	<b>0.0</b>	<b>-38.1</b>	<b>0.0</b>						
<b>Final NOPLAT</b>	<b>277.8</b>	<b>350.1</b>	<b>530.8</b>	<b>391.3</b>	<b>441.2</b>	<b>487.3</b>	<b>511.6</b>	<b>535.0</b>	<b>562.2</b>	<b>591.5</b>
<b>Invested Capital (IC):</b>										
<b>Operating Current Assets -</b>										
Normal Cash	254.2	288.9	336.9	340.1	384.3	421.4	441.6	460.6	483.6	507.8
Accounts Receivable	507.7	547.5	547.8	620.2	700.8	768.4	805.3	840.0	882.0	926.1
Inventory	813.5	988.4	1186.0	1106.6	1250.5	1371.1	1437.0	1498.7	1573.7	1652.4
Prepaid Expenses and Other current operating assets	179.7	122.0	140.7	227.3	256.8	281.6	295.1	307.8	323.2	339.3
<b>Total Operating Current Assets</b>	<b>1755.1</b>	<b>1946.8</b>	<b>2211.4</b>	<b>2294.1</b>	<b>2592.4</b>	<b>2842.5</b>	<b>2979.0</b>	<b>3107.1</b>	<b>3262.4</b>	<b>3425.6</b>
<b>Non Interest-Bearing Current Liabilities (CL)-</b>										
Accounts Payable	537.7	624.6	702.6	662.3	748.4	820.7	860.1	897.0	941.9	989.0
Accrued Compensation and Benefits	108.5	103.0	135.6	145.4	164.3	180.1	188.8	196.9	206.7	217.1
Warranties & Product Liability	39.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other current liabilities	218.9	269.1	278.2	275.5	311.3	341.3	357.7	373.1	391.8	411.4
<b>Total Non-Interest Bearing Current Liabilities</b>	<b>904.3</b>	<b>996.7</b>	<b>1116.4</b>	<b>1083.2</b>	<b>1224.0</b>	<b>1342.2</b>	<b>1406.6</b>	<b>1467.1</b>	<b>1540.4</b>	<b>1617.4</b>
<b>Operating Working Capital</b>	<b>850.8</b>	<b>950.1</b>	<b>1095.0</b>	<b>1210.9</b>	<b>1368.3</b>	<b>1500.4</b>	<b>1572.4</b>	<b>1640.0</b>	<b>1722.0</b>	<b>1808.1</b>
<b>Plus</b>										
Net PP&E	429.6	465.6	569.8	651.5	671.9	692.6	713.5	735.4	756.7	778.2
Net Intangible Assets (non-goodwill)	13.4	17.4	15.7	13.3	11.0	8.9	6.8	5.6	3.6	1.6
Other assets	474.1	489.1	626.1	537.1	602.9	657.9	687.0	715.0	748.5	783.7
<b>Minus</b>										
Other non-current liabilities	87.4	81.7	83.4	47.7	66.9	82.4	89.3	95.5	103.7	112.4
<b>IC</b>	<b>1680.4</b>	<b>1840.5</b>	<b>2223.3</b>	<b>2365.2</b>	<b>2587.3</b>	<b>2777.5</b>	<b>2890.4</b>	<b>3000.5</b>	<b>3127.1</b>	<b>3259.2</b>
<b>NOPLAT</b>										
NOPLAT	277.8	350.1	530.8	391.3	441.2	487.3	511.6	535.0	562.2	591.5
<b>Change in IC</b>	<b>112.9</b>	<b>160.0</b>	<b>382.8</b>	<b>141.9</b>	<b>222.1</b>	<b>190.2</b>	<b>112.9</b>	<b>110.2</b>	<b>126.5</b>	<b>132.2</b>
<b>FCF</b>	<b>165.0</b>	<b>190.1</b>	<b>148.0</b>	<b>249.4</b>	<b>219.1</b>	<b>297.1</b>	<b>398.7</b>	<b>424.8</b>	<b>435.6</b>	<b>459.3</b>
<b>Return on Invested Capital (ROIC):</b>										
NOPLAT	277.8	350.1	530.8	391.3	441.2	487.3	511.6	535.0	562.2	591.5
Beginning IC	1567.5	1680.4	1840.5	2223.3	2365.2	2587.3	2777.5	2890.4	3000.5	3127.1
<b>ROIC</b>	<b>17.7%</b>	<b>20.8%</b>	<b>28.8%</b>	<b>17.6%</b>	<b>18.7%</b>	<b>18.8%</b>	<b>18.4%</b>	<b>18.5%</b>	<b>18.7%</b>	<b>18.9%</b>
<b>Economic Profit (EP):</b>										
Beginning IC	1567.5	1680.4	1840.5	2223.3	2365.2	2587.3	2777.5	2890.4	3000.5	3127.1
x (ROIC - WACC)	7.6%	10.7%	18.7%	7.4%	8.5%	8.7%	8.2%	8.3%	8.6%	8.7%
<b>EP</b>	<b>118.4</b>	<b>179.2</b>	<b>343.6</b>	<b>165.1</b>	<b>200.6</b>	<b>224.1</b>	<b>229.0</b>	<b>241.0</b>	<b>256.9</b>	<b>273.4</b>

## Terex

### Weighted Average Cost of Capital (WACC) Estimation

#### Cost of Equity:

Risk-Free Rate	4.50%
Beta	1.57
Equity Risk Premium	4.23%
<b>Cost of Equity</b>	<b>11.15%</b>

#### Cost of Debt:

Risk-Free Rate	4.50%
Implied Default Premium	2.09%
Pre-Tax Cost of Debt	6.59%
Marginal Tax Rate	17%
<b>After-Tax Cost of Debt</b>	<b>5.49%</b>

#### Market Value of Common Equity:

Total Shares Outstanding	66.1
Current Stock Price	\$64.52
<b>MV of Equity</b>	<b>4,264.77</b>

#### MV Weights

85.16%

#### Market Value of Debt:

Notes Payable and Current Portion of LT Debt	2.8
Long-Term Debt	620.4
PV of Operating Leases	120.2
<b>MV of Total Debt</b>	<b>743.43</b>

14.84%

#### Market Value of the Firm

5,008.20

100.00%

Estimated WACC

10.17%

## Terex

### Discounted Cash Flow (DCF) and Economic Profit (EP) Valuation Models

#### Key Inputs:

CV Growth of NOPLAT	3.00%
CV Year ROIC	18.92%
WACC	10.17%
Cost of Equity	11.15%

Fiscal Years Ending Dec. 31	2024E	2025E	2026E	2027E	2028E	2029E	2030E
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#### DCF Model:

Free Cash Flow (FCF)	249.4	219.1	297.1	398.7	424.8	435.6	459.3
Continuing Value (CV)							6937.8
PV of FCF	226.4	180.5	222.2	270.6	261.7	243.6	3879.4

Value of Operating Assets:	5284.3
Non-Operating Adjustments	
PV Operating Leases	-120.2
LT Debt, less current portion	-620.4
Notes Payable and LT Debt	-2.8

Value of Equity	4540.8
Shares Outstanding	66.1
Intrinsic Value of Last FYE	\$ 68.70
<b>Implied Price as of Today</b>	<b>\$ 70.55</b>

#### EP Model:

Economic Profit (EP)	165.1	200.6	224.1	229.0	241.0	256.9	273.4
Continuing Value (CV)							3810.7
PV of EP	149.9	165.2	167.5	155.4	148.4	143.6	2130.8

Total PV of EP	3061.0
Invested Capital (last FYE)	2223.3
Value of Operating Assets:	5284.3
Non-Operating Adjustments	
PV Operating Leases	-120.2
LT Debt, less current portion	-620.4
Notes Payable and LT Debt	-2.8

Value of Equity	4540.8
Shares Outstanding	66.1
Intrinsic Value of Last FYE	\$ 68.70
<b>Implied Price as of Today</b>	<b>\$ 70.55</b>

## Terex

Dividend Discount Model (DDM) or Fundamental P/Evaluation Model

Fiscal Years Ending	2024E	2025E	2026E	2027E	2028E	2029E	2030E
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EPS	\$ 5.53	\$ 6.22	\$ 6.91	\$ 7.42	\$ 7.91	\$ 8.44	\$ 9.04
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### Key Assumptions

CV growth of EPS	4.89%
CV Year ROE	15.48%
Cost of Equity	11.15%

### Future Cash Flows

P/E Multiple (CV Year)							10.93
EPS (CV Year)							\$ 9.04
Future Stock Price							\$ 98.77
Dividends Per Share	0.65	0.73	0.81	0.87	0.93	1.00	1.07
Discounted Cash Flows	0.59	0.59	0.59	0.57	0.55	0.53	52.38

Intrinsic Value as of Last FYE	\$ 55.81
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Implied Price as of Today	\$ 57.32
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**Terex**

*Relative Valuation Models*

Ticker	Company	Price	EPS		P/E 24	P/E 25	Est. 5yr		
			2024E	2025E			EPS gr.	PEG 24	PEG 25
CAT	Caterpillar Inc.	\$366.75	\$20.83	\$22.07	17.30	16.30	12.7	1.37	1.29
OSK	Oshkosh	\$124.50	\$10.08	\$11.17	12.00	11.20	11.1	1.08	1.01
WNC	Wabash National Corp.	\$29.94	\$2.22	\$2.62	13.49	11.43	15.0	0.90	0.76
CMI	Cummins	\$294.65	\$18.21	\$20.92	16.18	14.08	7.1	2.28	1.98
MTW	Manitowoc	\$14.14	\$1.28	\$1.56	11.05	9.06	22.5	0.49	0.40
PCAR	PACCAR Inc.	\$123.89	\$8.09	\$8.62	15.31	14.37	6.8	2.27	2.13
		(March 29)	Average		<b>14.22</b>	<b>12.74</b>		<b>1.40</b>	<b>1.26</b>

TEX	Terex	\$63.37	\$5.53	\$6.22	11.5	10.2	4.26	2.7	2.4
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**Implied Relative Value:**

<b>P/E (EPS24)</b>	<b>\$ 78.66</b>
<b>P/E (EPS25)</b>	<b>\$ 79.30</b>
<b>PEG (EPS24)</b>	<b>\$ 32.94</b>
<b>PEG (EPS25)</b>	<b>\$ 33.48</b>



Terex  
Sensitivity Tables

		Beta							
		70.55	1.27	1.37	1.47	1.57	1.67	1.77	1.87
ERP	3.78%	95.20	89.09	83.61	78.67	74.20	70.13	66.41	
	3.93%	92.03	86.04	80.67	75.84	71.46	67.48	63.85	
	4.08%	89.04	83.16	77.90	73.16	68.88	65.00	61.45	
	4.23%	86.21	80.44	75.28	70.64	66.45	62.65	59.18	
	4.38%	83.53	77.86	72.80	68.26	64.16	60.44	57.05	
	4.53%	80.98	75.42	70.46	66.00	61.99	58.35	55.03	
	4.68%	78.56	73.10	68.23	63.87	59.93	56.37	53.12	

		Risk Free Rate							
		70.55	4.35%	4.40%	4.45%	4.50%	4.55%	4.60%	4.65%
CV Growth of NOP1AT	2.85%	71.42	70.90	70.39	69.88	69.37	68.88	68.38	
	2.90%	71.66	71.13	70.61	70.10	69.59	69.09	68.59	
	2.95%	71.90	71.37	70.84	70.33	69.81	69.31	68.81	
	3.00%	72.14	71.61	71.08	70.55	70.04	69.53	69.02	
	3.05%	72.39	71.85	71.31	70.79	70.27	69.75	69.24	
	3.10%	72.64	72.09	71.55	71.02	70.50	69.98	69.47	
	3.15%	72.89	72.34	71.80	71.26	70.73	70.21	69.69	

		CV ROIC							
		70.55	15.92%	16.92%	17.92%	18.92%	19.92%	20.92%	21.92%
WACC	9.42%	78.52	79.45	80.28	81.02	81.68	82.28	82.83	
	9.67%	74.92	75.80	76.58	77.28	77.91	78.48	79.00	
	9.92%	71.57	72.41	73.15	73.82	74.42	74.96	75.45	
	10.17%	68.46	69.26	69.97	70.60	71.17	71.69	72.16	
	10.42%	65.56	66.32	67.00	67.60	68.15	68.64	69.09	
	10.67%	62.85	63.58	64.22	64.80	65.32	65.79	66.22	
	10.92%	60.32	61.01	61.63	62.18	62.68	63.13	63.53	

		Pre Tax Cost of Debt							
		70.55	2.09%	3.59%	5.09%	6.59%	8.19%	9.69%	11.19%
SG&A % of Sales	9.83%	83.96	81.86	79.88	77.99	76.08	74.37	72.74	
	10.08%	81.30	79.27	77.34	75.51	73.66	72.00	70.42	
	10.33%	78.65	76.68	74.81	73.03	71.23	69.63	68.09	
	10.58%	75.99	74.08	72.28	70.56	68.81	67.26	65.77	
	10.83%	73.34	71.49	69.74	68.08	66.39	64.88	63.44	
	11.08%	70.68	68.90	67.21	65.60	63.97	62.51	61.12	
	11.33%	68.03	66.31	64.68	63.13	61.55	60.14	58.79	

		Marginal Tax Rate							
		70.55	17.00%	17.50%	18.00%	18.50%	19.00%	19.50%	20.00%
Normal Cash Estimate	5.04%	72.52	71.99	71.46	70.93	70.40	69.87	69.34	
	5.54%	72.40	71.87	71.34	70.81	70.27	69.75	69.22	
	6.04%	72.27	71.74	71.21	70.68	70.15	69.62	69.09	
	6.54%	72.15	71.62	71.09	70.55	70.02	69.49	68.97	
	7.04%	72.02	71.49	70.96	70.43	69.90	69.37	68.84	
	7.54%	71.65	71.12	70.59	70.05	69.52	68.99	68.47	
	8.04%	71.16	70.63	70.10	69.57	69.04	68.51	67.98	

		COGS % of Sales							
		70.55	78.69%	78.84%	78.99%	79.14%	79.29%	79.44%	79.59%
Depreciation Rate	4.68%	77.50	76.01	74.53	73.04	71.56	70.07	68.58	
	6.68%	76.48	74.99	73.51	72.02	70.54	69.05	67.56	
	8.68%	75.66	74.17	72.69	71.20	69.72	68.23	66.74	
	10.68%	75.01	73.53	72.04	70.55	69.07	67.58	66.10	
	12.68%	74.51	73.03	71.54	70.06	68.57	67.08	65.60	
	14.68%	74.14	72.65	71.17	69.68	68.19	66.71	65.22	
	16.68%	73.87	72.38	70.90	69.41	67.92	66.44	64.95	

**Terex***Valuation of Options Granted under ESOP*

Current Stock Price	\$63.37
Risk Free Rate	4.50%
Current Dividend Yield	1.20%
Annualized St. Dev. of Stock Returns	32.60%

Range of Outstanding Options	Number of Shares	Average Exercise Price	Average Remaining Life (yrs)	B-S Option Price	Value of Options Granted
Range 1: 2023	555,468	48.95	3.00	\$ 22.88	\$ 12,708,300
Range 2: 2022	150,006	31.98	3.00	\$ 34.04	\$ 5,106,951
Range 3: 2021	33,865	41.67	3.00	\$ 27.25	\$ 922,762
Range 4: 2020	3,668	28.53	3.00	\$ 36.71	\$ 134,664
Range 5: 2019	184,279	27.72	3.00	\$ 37.36	\$ 6,883,946
Range 6: 2018	3,386,225	29.61	3.00	\$ 35.87	\$ 121,448,121
<b>Total</b>	<b>4,313,511</b>	<b>\$ 32.20</b>	<b>3.00</b>	<b>\$ 36.01</b>	<b>\$ 147,204,744</b>

**Terex**

*Effects of ESOP Exercise and Share Repurchases on Common Stock Account and Number of Shares Outstanding*

Number of Options Outstanding (shares):	4,313,511
Average Time to Maturity (years):	<u>3.00</u>
Expected Annual Number of Options Exercised:	1,437,837

Current Average Strike Price:	\$ 32.20
Cost of Equity:	11.15%
Current Stock Price:	\$63.37

<b>Fiscal Years Ending Dec. 31</b>	<b>2024E</b>	<b>2025E</b>	<b>2026E</b>	<b>2027E</b>	<b>2028E</b>	<b>2029E</b>	<b>2030E</b>
Increase in Shares Outstanding:	1,437,837	1,437,837	1,437,837	0	0	0	0
Average Strike Price:	\$ 32.20	\$ 32.20	\$ 32.20	\$ 32.20	\$ 32.20	\$ 32.20	\$ 32.20
<b>Increase in Common Stock Account:</b>	<b>\$46.29</b>	<b>\$46.29</b>	<b>\$46.29</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>
Share Repurchases (\$)	106.97	106.97	106.97	106.97	106.97	106.97	106.97
Expected Price of Repurchased Shares:	\$ 63.37	\$ 69.68	\$ 76.61	\$ 84.23	\$ 92.61	\$ 101.82	\$ 111.96
<b>Number of Shares Repurchased:</b>	<b>1,687,970</b>	<b>1,535,222</b>	<b>1,396,297</b>	<b>1,269,943</b>	<b>1,155,023</b>	<b>1,050,503</b>	<b>955,441</b>
Shares Outstanding (beginning of the year)	66,100,000	65,849,867	65,752,482	65,794,022	64,524,079	63,369,055	62,318,552
Plus: Shares Issued Through ESOP	1,437,837	1,437,837	1,437,837	0	0	0	0
Less: Shares Repurchased in Treasury	<u>1,687,970</u>	<u>1,535,222</u>	<u>1,396,297</u>	<u>1,269,943</u>	<u>1,155,023</u>	<u>1,050,503</u>	<u>955,441</u>
<b>Shares Outstanding (end of the year)</b>	<b>65,849,867</b>	<b>65,752,482</b>	<b>65,794,022</b>	<b>64,524,079</b>	<b>63,369,055</b>	<b>62,318,552</b>	<b>61,363,112</b>