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The Deere in Economic Headlights
—
Still Running Strong?

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Abstract

This report provides an analysis of Deere & Co.'s financial and non-financial performance, covering the period from FY 18-23, with projections extending to FY 40. Deere & Co. has consistently demonstrated growth in sales, particularly in its equipment operations, alongside an increase in gross profit margins, despite challenges posed by market fluctuations and the pandemic. The company's strategic pivot in FY 20 towards a smart-industrial model has yielded significant improvements in efficiency and profitability. Analysis of the balance sheet reveals robust asset growth and effective debt management strategies. Deere & Co.'s commitment to environmental, social, and governance (ESG) principles is integral to its market positioning. Future financial projections for the company have been developed with a comprehensive consideration of various market drivers. Using the Adjusted-Present-Value method, the report offers a valuation that accounts for the evolving capital structure of the company. To ensure the robustness of these projections, sensitivity analysis and a Monte Carlo simulation were employed. Deere & Co. faces certain short-term market challenges; however, the company's long-term prospects remain strong, enhanced by its strategic initiatives and a dedication to sustainability. Considering these factors, the current recommendation for Deere & Co.'s stock is a hold, weighing both the short-term uncertainties and the potential for long-term growth.

Keywords (up to four)

- Equity Research
- Deere & Co.
- Agricultural Equipment
- Heavy Machinery

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This report is **Part 2** of the **The Deere in Economic Headlights – Still Running Strong? (“Consolidated”)** report (annexed), developed by Christoph Carlos Pürner (52958) and Luise Henriette Wagner (53489) and should be read as an integral part of it.

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Introduction

This report is a component of the comprehensive "**The Deere in Economic Headlights – Still Running Strong?**" report, authored by Christoph Carlos Pürner (52958) and Luise Henriette Wagner (53489). The comprehensive report, to which this report belongs, is referred to as the "Consolidated Report" and is attached as an annex. The Consolidated Report is divided into two separate sections, with this report serving as **Part 2**.

The structure of the Consolidated Report includes the following sections:

I. Company Overview; II. Industry Analysis; III. Historical Financial and Non-Financial Performance; IV. Forecasted Financial Statements; V. Valuation; and VI. Recommendation.

It offers a comprehensive analysis of **Deere & Co.**, United States, and concludes with an investment recommendation within the framework of an Equity Research Report. The overall recommendation is to **HOLD** Deere & Co. shares, targeting a price of **391.89 USD** by December 31, 2024, which suggests a **9.06% potential** upside from the share price of 364.41 USD as of November 30, 2023.

Part 1 focuses on the *Company Overview* and *Industry Analysis*, particularly examining the competitive landscape. It then delves into the *Relative* and *Dividend-Discount-Model Valuation*, addressing the *Limitations* of these methods. Additionally, Part 1 introduces the *General Forecasting Approach* used in valuing Deere & Co.

In contrast, **Part 2**, this report, offers an in-depth analysis of Deere & Co.'s *Historical Financial and Non-Financial Performance*. It then projects the *Forecasted Financial Statements*, specifically focusing on the construction of free-cash-flows, which are utilized in the *Adjusted-Present-Value Valuation*. Finally, **Part 2** also discusses the *Limitations* of these approaches and provides a final investment *Recommendation*.

For a complete understanding, please refer to both the Consolidated Report and Part 1.

I) Historic Financial and Non-Financial Performance

This section aims to analyze DE's past financial and non-financial performance.

1) Historic Financial Analysis

a) Income Statement

Analyzing DE's financial performance from FY 18-23, we note a consistent upward trend in total sales (CAGR: 8.59%), see **figure 1**. This was driven by robust growth in equipment operations (CAGR: 8.88%), particularly in PPA. This growth was fueled by increased demand for agricultural equipment, especially in North America and Latin America. Both regions expanded their share of the regional revenue distribution.

YoY growth in equipment operations displayed high volatility, ranging from -10.36% to +27.07%. After modest growth in FY 18-19, revenues experienced a significant decline in FY 20, dropping by over 3,600 USDm due to supply chain disruptions and demand shocks caused by the COVID pandemic, visible in figure 20. By FY 21, DE rebounded and exceeded pre-pandemic levels, achieving record-breaking results in FY 22 and FY 23 with total sales and revenues reaching 61,251 USDm (FY 23). The YoY growth per segment is represented in **figure 2**.

DE's cost of goods sold (COGS) exhibited a slower CAGR of 6.69% compared to sales resulting in an increase in the gross profit margin, rising from 29.03% in FY 18 to 38.43% in FY 23. DE's gross profit margin is industry-typical, ranking competitively against CNHI (28.68%) and Kubota (25.55%).

In 2020, DE introduced the "smart-industrial operating model," emphasizing segment targets, economic value, and sustainability. Notably, the implementation of recurring revenues is expected to contribute to DE's cost-effectiveness.

Bottom-line improvements include a doubled net profit margin from 6.34% in FY 18 to 16.60% in FY 23, attributed to streamlined overhead, COVID-driven workforce adjustments, digitalization, and low-cost recurring revenues integration.

b) Balance Sheet and Cash Flows

Over the last six years, DE has demonstrated a positive evolution in its balance sheet, marked by a substantial increase in total assets, growing by 33,979 USDm at a CAGR of 6.81% from FY 18-23. This growth is attributed to ongoing investments in manufacturing plants, equipment, and strategic initiatives.

During the period, DE made 47 acquisitions with a combined deal value of approx. 19,400 USDm, with a significant portion occurring and electrification, and entry into new markets. It is an essential part of DEs growth strategy ensuring DE competitive advantages.

The debt-to-equity (D/E) ratio peaked in FY 19 at 4.0 but has decreased to below pre-COVID levels, currently standing at 2.65 (see **figure 3**). During the pandemic, DE adjusted its capital structure to proactively mitigate risk and ensure solvency. DE historically maintained strong liquidity with high current and quick ratios above 6.00 along with a cash ratio above 0.50, with cash and cash equivalents

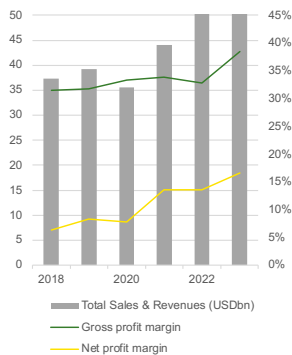


Figure 1: Evolution
Total Sales and
Revenues, Gross- and
Net Profit Margin FY 18-
23.

Source: Deere & Co.,
2023.

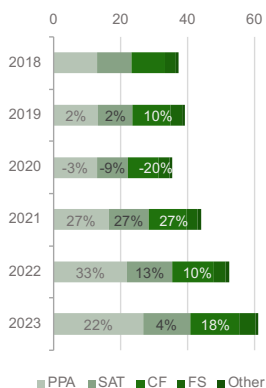


Figure 2: Revenue
and Respective
Growth Rate per
Segment FY 18-23.

Source: Deere & Co.,
2023.

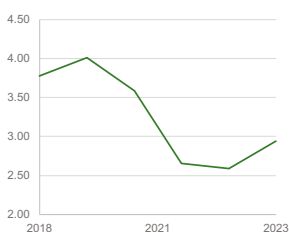


Figure 3: Evolution of
D/E Ratio FY 18-23.

Source: Deere & Co.,
2023.

representing about 10.00% of total sales and revenues. During the pandemic, DE adopted a precautionary approach, decreasing their leverage and increasing cash and cash equivalents to above 19.00% of total sales and revenues. After the pandemic, DE has decreased its cash to pre-pandemic levels and is now relevering its business.

DE	-19
CNHI	397
Kubota	187
M&M	-13
ACGO	131
Cat	181
Komatsu	276
Volvo	114

Figure 4: Comparison of Cash Conversion Cycle.

Source: Company Data, 2023.

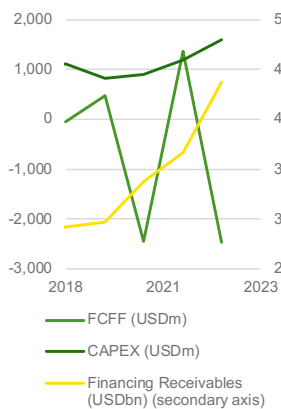


Figure 5: Evolution of FCFF and CAPEX FY 18-23.

Source: Deere & Co., 2023.

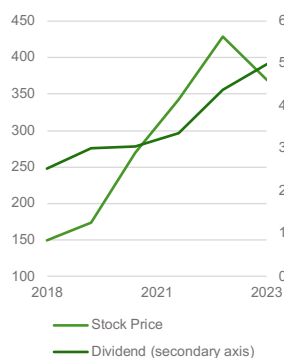


Figure 6: Stock Price and Dividend Growth (Yearly) FY 18-23.

Source: Deere & Co., 2023.

Aligned with the overall analysis, DE's cash conversion cycle (CCC) displayed a positive trend. Despite a peak of around 27 days in FY 19, by FY 22, DE significantly improved its CCC, with a three-year avg. of approx. -16 (FY 21-23). This indicates strong progress in cash management, emphasizing DE's efficient working capital management. DE's ability to collect receivables in approx. 43 days while comfortably waiting around 143 days for the payment of payables results in a negative CCC, signifying efficient working capital management. Also, as DE provides financing solutions to customers, it allows DE to control credit terms and ensure quicker payments which results in a faster cash conversion. The CCC implies that DE can collect cash from customers before having to pay their own suppliers. A benchmarking with key peers is shown in **figure 4**, where DE clearly outperforms its competitors.

Despite the solid growth observed in both the income statement and the balance sheet, DE's unlevered free cash flow to firm (FCFF) averages at -1.16% of total sales and revenues, showcasing high volatility in YoY growth, visible in **figure 5**, primarily attributed to changes in financing receivables. As these are linked to the financing offerings provided to DE's dealers through the John Deere Capital Corporation for products within equipment operations, an increase in FY 20 due to higher financing needs during COVID and a stall in FY 22 due to increased interest expenses appear as a logical explanation.

Capital expenditures (CAPEX) stayed relatively constant at around 1,150 USDm in FY 19 and FY 22 (2.50% of total sales on avg.). Driven by higher uncertainty during COVID, CAPEX was reduced to slightly lower levels during FY 20-21.

c) Stock Performance and Dividends

Over the past six years, DE's stock has demonstrated strong growth of 182.48%. Despite price fluctuations from 110 USD to 170 USD between Oct-2018 and Mar-2020, it rose to 424 USD in Apr-2022. Since then, the stock price has displayed dynamic movements, with a 52-week high and low of 446.33 USD to 345.98 USD. See **figure 6**.

DE's dividend yield stands at 1.41% which is favorable compared to sector, country, and global averages (0.44, 0.25, and 0.37, respectively). However, direct competitors like CNHI and Kubota exhibit higher dividend yields (3.42% and 2.14%, respectively).

Over the past six years, DE's payout ratio averaged at 24.61% of mid-cycle earnings. In FY 23, it decreases to 14.04% to keep the dividend increase moderate despite the substantial increase in EPS (+49.30% compared to FY 22). This conservative payout policy positions DE with financial capacity for strategic investments. In contrast, CNHI and Kubota have payout ratios at 22.92% and 14.60% (2023). DE's annual dividend for FY 23 is 5.00 USD per share, marking more than three consecutive years of increases, showcasing financial stability and the ability to sustain consistent future dividend payments.

2) ESG Analysis

As explained in **Part 1**, ESG-performance is a crucial driver for both industries in the upcoming years, being asked by a diverse set of internal and external stakeholders. **Figure 7** represents a comparison of the overall ESG performance of DE and relevant competitors. DE encompasses a low ESG risk rating of 19.9, outperforming the mean of its competitors standing at 24.18 (Sustainalytics, 2023).

a) Environnement

(i) Production process

From a production standpoint, DE is highly committed to reducing its environmental impact. With ambitious goals for FY 30, the company aims to cut operational CO₂e (CO₂ and equivalent GHGs) emissions by 50.00% and to reduce upstream and downstream CO₂e emissions by 30.00%. However, many competitors state similar goals in reducing GHG making DE's objective less special, yet not less ambitious – e.g. AGCO plans to run their production on 60.00% renewable energy by FY 26.

Still, DE's efforts to lower GHG emissions in their production are not just a matter of environmental stewardship but also have direct financial implications. In October 2022, DE amended its credit agreements linking interest expenses to environmental impact. This implies that failing to meet emissions targets result in a penalty rate, while exceeding these targets leads to favorable adjustments. Alongside these financial incentives, DE aims to reduce waste intensity by 15.00% and decreasing freshwater consumption intensity by 10.00% at water-stressed manufacturing locations.

(ii) Products

On the product front, DE is working to limit the environmental impact of its products. Key to this strategy is the exploration and implementation of alternative propulsion systems, including battery-electric and alternative fuels, to substitute traditional diesel-powered engines. By FY 26, DE plans to introduce over 20 battery-electric or hybrid-electric models in the CF segment. Additionally, a range of electric options is being developed for turf-care and compact-tractor products.

DE is focusing on enhancing agricultural efficiency, with goals to improve nitrogen use efficiency by 20.00%, increase crop protection efficiency by 20.00%, and reduce customer CO₂e emissions by 15.00% by 2030. Also, DE is dedicated to increasing product circularity, aiming for 95.00% recyclable product content, ensuring 65.00% of product content is sustainable material, and aiming for a 50.00% increase in remanufacturing revenue by FY 30.

b) Social

DE demonstrates strong commitment to social responsibility through various initiatives. DE significantly invests in charitable contributions, focusing on global food insecurity, agricultural education, and support for underserved farmers. DE supports initiatives to assist black farmers and programs for native American youth in agriculture and invests in funds aiding minority-owned businesses. Recognized for responsible citizenship, DE contributes to food banks and works on

Agricul Holsitic	DE	19.9
	CNHI	24.6
	Kubota	20.7
	M&M	24.9
	ACGO	17.6
Constr.	Cat	36.3
	Volvo	25.7
	Komatsu	23.7
Categories for ESG Risk Rating		
	Negligible	0-10
	Low	10-20
	Medium	20-30
	High	30-40
	Severe	40+

Figure 7: Comparison of ESG Risk Rating. Source: Sustainalytics., 2023.

hunger relief. Their precision agriculture technology helps meet growing food demands efficiently. Employee involvement in philanthropy is encouraged, amplifying the company's social impact.

c) Governance

DE exhibits strong governance practices integral to its ESG profile collectively highlighting a solid governance structure. Their supplier diversity strategy, initiated in FY 21, prioritizes economic development through collaborations with diverse suppliers. DE's compliance framework, highlighted by continuous training, fosters an ethical corporate culture. DE's human rights commitment is reflected in detailed conduct codes, ensuring fair practices across their value chain. Furthermore, responsible political engagement through the John Deere Political Action Committee (JDPAC) showcases ethical political advocacy, adhering to strict legal standards. However, from a management perspective, holding both CEO and Chairman roles, May's dual position raises concerns of power concentration and reduced oversight. For better governance, separating these roles is generally preferred.

II) Forecasted Financial Statements

Below, the rationale of the forecasted financial statements is outlined.

1) Forecasted Income Statement

Following a record net income of 10,166 USDm, a sharp cyclical decline of 2,839 USDm is anticipated in FY 24. Recovery to FY 23 levels is expected by FY 28, with gradual growth reaching 16,468 USDm in FY 40. Refer to **Part 1** for visual representation.

a) Operating Sales and Revenues (Equipment Operations)

As mentioned, we place most significance on projecting equipment operations revenues as they historically accounted for approx. 90.00% of total sales and revenues. We employ a dual short- and long-term approach for a confident and resilient forecast, with a gradual shift from 65.00% short-term weight in FY 24 to 0.00% from FY 31 onwards (**see Consolidated Appendix**). While the long-term model indicates broader trends and fundamentals shaping the segments future, the short-term model allows us to incorporate sensitivity to immediate fluctuations. The drivers and coefficients of each model are visible in **figure 8** and **9**.

(i) Long-Term Model

The long-term model aims to identify historic growth patterns for each segment's drivers. A linear regression is employed to quantify the strength of the linear relationship between the driver and the segment's growth and assign a coefficient to each driver.

We calculated the sum of squared errors (SSE) between the drivers' growth and the segment's revenue growth and set the coefficients with the objective of minimizing SSE, explicitly avoiding the constraint of summing all coefficients to 1. Making coefficients sum to 1 in a linear regression is impractical as they represent the individual impact of each variable, and their scale is determined by units of measurement, making normalization arbitrary and irrelevant to their interpretation. See **Consolidated Appendix** for regression statistics. Ultimately, we refer to sophisticated, source-based

PPA	Weight
GDP Growth	244.82%
S&P Agriculture Index (1 Year Lag)	30.90%
US Farm Financial Data	34.51%
SAT	
GDP Growth	236.57%
S&P Agriculture Index (1 Year Lag)	9.76%
US Farm Financial Data	32.96%
CF	
GDP Growth	262.49%
S&P 500 Construction, Machinery & Heavy Trucks (1 Year Lag)	35.36%
Global primary forest loss (Mha) (2 Year Lag)	46.21%

Figure 8: Weights Long-Term Model. Source: Analyst Analysis.

PPA	Weight
Cash Expenses on Machinery, Tractors, and Self-Propelled	100.00%
SAT	
Cash Expenses on Machinery, Tractors, and Self-Propelled	65.00%
Turf Equipment Market Growth	35.00%
CF	
Global primary forest loss (Mha)(2 Year Lag)	75.00%
Global Construction Equipment Markt Growth	25.00%

Figure 9: Weights Short-Term Model. Source: Analyst Analysis.

forecasts of each driver which we then multiply with the respective coefficient to arrive at the long-term model indicated growth rate for each segment.

We accept somewhat limited statistical significance in the regressions but remain steadfast towards the robustness of the approach, firmly believing that no driver will exhibit statistical significance when viewed from mathematical and causal perspective.

(ii) Short-Term Model

The short-term model captures drivers particularly reflecting changes in YoY-growth in the short-term which may be offset in the long-term view. As higher accuracy can often only be reached with a shorter time span, implementing explicit, source-based predictions of the near future help us to increase the forecasts' reliability.

(iii) PPA and SAT Revenue

Given that PPA revenue has been reported separately only since FY 18 and was previously consolidated with SAT, both long-term models share the same causal interpretations and similar datasets, only resulting in slightly differing coefficients due to varying data during FY 18-23.

In the long-term model, we observe that revenue-weighted GDP growth (IMF, 2023), the S&P GSCI Agriculture Index (Bloomberg Database, 2023), and US Farm Net Cash Income (USDA, 2023) exhibit growth patterns similar the historic growth of the PPA and SAT visible in **figure 10** and **11**.

The IMF provides sound projections of the overall economic health represented by the GDP. While GDP is projected to exhibit slower growth of 1.59% in FY 24, it is expected to stabilize at levels around and beyond 2.20% from FY 26 on.

The S&P GSCI Agriculture Index showed cyclical fluctuations in historic years, matching with PPA and SAT revenues. Since there is no forecast available, we use the 10-year historic average of the YoY-percentage change of -0.71% during the forecasting period. As this represents the long-term mean of cyclical fluctuations in the back look, the same can be assumed for the outlook, too.

As mentioned earlier, farm income stands out as a critical determinant shaping the agricultural equipment market. It mirrors the purchasing power of the primary customers in the PPA and SAT segment. Historically exhibiting cyclical patterns, inflation-adjusted US net farm cash income is projected to decline by 26.52% in 2023 (ibid.), influencing PPA and SAT revenues with a one-year lag. According to USDA, the significant downturn is influenced by reduced government payments and rising production costs until price normalization and recovery is achieved. The USDA foresees slight recovery in 2027, with modest cyclical up-and-down movements in YoY-growth until 2032. Beyond, we continue the forecast with a 7-year avg. until 2040.

Multiplying each driver's YoY growth by its respective coefficient yields a moderate decline of -4.54% in FY 24, followed by immediately and ongoing recovery exceeding 4.00%. YoY- growth declines towards 3.00% from FY 33 on and stabilizes at 2.58% from FY 37 onwards.

In the short-term models for both PPA and SAT, we incorporate cash expenses on machinery, tractors, and self-propelled machines as a percentage of the previous year's US farm net cash income (USDA, 2023). This allows us to anchor our projections even tighter to the expenditures of US farmers

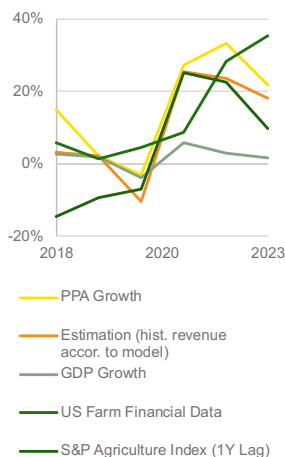


Figure 10: Evolution of PPA Revenue and Key Drivers. Source: See Text.

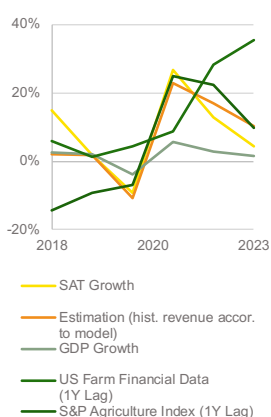


Figure 11: Evolution of SAT Revenue and Key Drivers. Source: See Text.

on agricultural equipment — essentially the inverse of DE's revenues. As these cash expenses are available only in retrospect, we use a 5-year historic avg. of the ratio of expenses to the previous year's US farm net cash income to estimate these values. By including this in the short-term model, we aim to put additional emphasis on the cyclical drop expected in FY 24.

For the SAT short-term model, we apply the PPA short-term model as explained above but with a reduced weight of 65.00%, accounting for SAT's farm-related revenue streams. To consider the non-farm related revenue, especially turf equipment, we include the turf equipment market CAGR of 4.50% with a weight of 35.00% (Persistence Market Research, 2023). This reduces SAT's exposure to the agricultural equipment and its cyclical downturn, resulting in a more moderate decline of 15.66% in YoY growth in FY 24 (vs. -18.82% for PPA), yet followed by a slower recovery until FY 32 compared to PPA. After the short-term models only forecast until 2030, both revenue streams grow at similar rates in the period thereafter, reaching 3.76% in FY 33 and gradually declining towards a constant level of 2.61% from FY 37 onward.

(iv) CF Revenue

For the CF long-term model, GDP growth expectations remain the primary driver. Given that the CF revenue stream comprises roadbuilding, construction, and forestry, we aim to capture the dynamics of all three in our long-term projections.

Regarding roadbuilding and construction, the S&P Construction Machinery & Heavy Trucks Index growth with a one-year lag shows similar growth patterns as the CF segment. The index effectively reflects trends in the construction machinery and heavy trucks industry. Utilizing the 10-year historic avg. of the YoY percentage change of 11.42%, we assume this as the long-term mean of cyclical fluctuations.

Additionally, we consider 2-year lagging global deforestation as a measure for activity in the forestry pillar. Global deforestation is expected to be zero from 2030 on (Global Forest Watch, 2023). We assume that with zero deforestation, DE's forestry-related sales will show a steady decline as there will be less demand for such equipment. Yet, we remain conservative regarding the execution of global sustainability and deforestation initiatives and set 2035 as the zero-year. Anticipating that forestry activity will not decrease to zero within the forecasting period, we apply a logarithmic decline logic with a constant YoY-change of -16.23%.

Overall, the CF long-term model implies a YoY-growth of 3.72% in FY 24, rising and staying beyond 5.00% until FY 29, and gradually declining towards 2.44% in FY 37, where it remains steady.

In the CF short-term model, we include projections of the global construction equipment market growth at a weight of 75.00%. According to Statista (2023), the market is projected to grow from 157,060 USDm in 2022 up to 234,600 USDm in 2030 exhibiting 49.37% growth over the span of 8 years. Yet, we believe that DE will not be able to hold its market share of 8.37% (2023) in the long-term, given that its primary efforts are in the agricultural segment and the global construction equipment market is already very competitive and granular. Therefore, we incorporated slight deductions in market share of 0.85% in total in FY 24 and FY 25. Lastly, we included the earlier explained deforestation-driver at a weight of 25.00%. Notably, this is not a case of thoughtless double

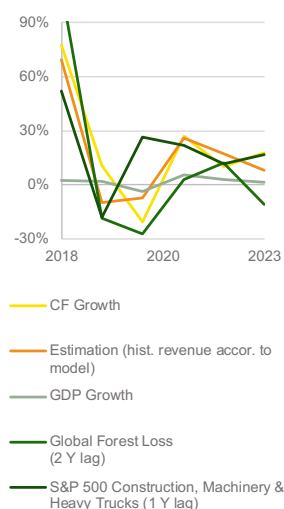


Figure 12: Evolution of CF Revenue and Key Drivers. Source: See Text.

counting. Rather, we want to put more relevance on this driver in the short end than the weighting of the long-term model provides in the early forecasting years as we assume this factor to have significant influence.

Weighting both short- and long-term model yields the most moderate decline in YoY growth of 6.75% in FY 24 for CF compared to all operating segments. However, the CF segment takes longer to recover and only reaches above 3.00% YoY-growth beginning from FY 29 on and peaks in FY 31 at 4.31%. It gradually declines towards 2.44% in FY 37 where it enters a steady state. Refer to **figure 12** for the evolution of the drivers.

Combining all segments, equipment operations revenue is projected to experience a drastic cyclical downturn of 14.81% in FY 24, with no real growth in the following two years. From FY 29 to FY 35, growth trends hover between 3.00% and 4.00%, gradually declining to 2.54% in FY 37, where it remains.

b) Operating Expenses (OPEX)

While we anticipate the operating net profit margin to decrease from 18.62% in FY 23 (38.43% for gross profit margin) to 13.63% in FY 24 (31.80%), we project a faster recovery and increase up to 21.76% in FY 30 (38.25%) followed by moderate growth towards 22.40% (38.97%) in FY 40. The main drivers for this are COGS, R&D, SG&A, and interest expenses with COGS holding the highest weight at approx. 83.85% in the 6-year historical data, characteristic for a manufacturing company.

When estimating **COGS**, we considered the increasing levels of recurring revenue, which DE aims to raise to 10.00% of equipment operations revenue by FY 30 starting in FY 23. Beyond FY 30, we anticipate recurring revenue to grow more conservatively, adding an additional 0.10% to recurring equipment operations revenue each year. Assuming this recurring revenue primarily comes from services and data-driven subscription models, we project COGS relative to non-recurring equipment operations revenue which require relevant amounts of material costs. Recent FY 23 data shows a gross margin increase of 5.76%, compared to a relatively stable avg. of 32.67% from FY 18-22.

Acknowledging the anticipated cyclical downturn, we assume the FY 23 margin is a positive outlier, and FY 24 will exhibit a drastic drop to 31.80%, driven by negative industry dynamics and increased production costs not immediately offset by adjusted prices. We expect the gross margin to recover by FY 30, reaching 38.25%, slightly below pre-peak times, and maintain this level relatively stable until FY 40. Slight improvements from FY 30 on only stem from the increase in recurring revenues as visible in **figure 13** and **34**.

In the analysis of **R&D expenses**, we connected DE's reinvestment levels with equipment operations revenue, providing a standardized metric to evaluate the DE's commitment to innovation in the broader context of its overall performance. Over the 5-year historical avg., the R&D expenses-to-sales ratio stood at 4.70% (excl. FY 23). Despite a substantial absolute increase associated with the peak in equipment operations sales in FY 23, the ratio experienced a slight decline to 3.90%. Conversely, with the anticipated drop in revenues in FY 24, we project a rebound in the ratio to 4.50%, equivalent to the 6-year historic avg. (incl. FY 23). This projection aligns with our expectation that R&D expenses will be maintained at a medium-high level, a strategic necessity for DE to uphold its market positions

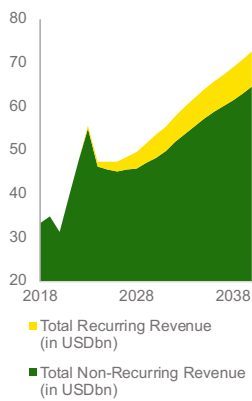


Figure 13: Evolution of Recurring Revenues.

Source: Deere & Co., 2023; Analyst Analysis.

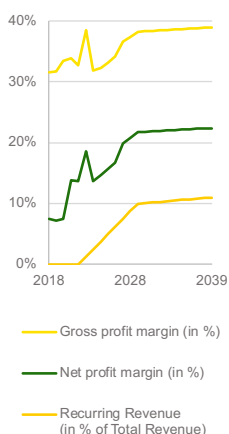


Figure 14: Evolution of Recurring Revenues and Margins.

Source: Deere & Co., 2023; Analyst Analysis.

and innovator role. Moreover, considering the capital-intensive nature of upcoming product advancements and innovations, particularly regarding e-mobility and AI usage, sustaining this level of investment becomes crucial for DE's continued success.

When considering **SG&A expenses**, we linked their growth to our expectations for non-recurring equipment operations revenue per FTE and the past level of SG&A per FTE. As a manufacturing company, DE's ability to generate revenue from product sales is dependent on the required workforce, vice-versa impacting the cost base. Historically, non-recurring equipment operations revenue per FTE averaged at 0.52 USDm and SG&A averaged at 0.048 USDm per FTE which we both assume to remain stable throughout the forecasting period. We anticipate a significant decline of approx. 50.00% in SG&A for FY 24 attributed to reduced revenues and the normalization of revenue per FTE, which peaked at 0.63 USDm in FY 23. We believe that the heightened efficiency was an exceptional occurrence driven by the spike in demand and should be viewed as a positive outlier.

As **interest expenses** are reported at a segment level, this facilitates their allocation to the operating expenses of each segment. They follow an analogous interpretation to interest income, signifying the COGS on the financing plans offered and recognized within interest income per segment. It is important to distinguish these expenses from the overall funding strategy. For interest expenses within the three operational segments, we consistently observe a percentage relative to total debt outstanding, which stands at 0.19% for PPA, 0.30% for SAT, 0.15% for CF, and 1.97% for FS. We utilized this metric to project interest payments.

c) Non-Operating Activities

(i) Non-Operating Sales and Revenues

Non-operating sales and revenues are mostly stemming from the non-operating activities accounted in interest income and other income. While their growth is mainly linked to equipment operations revenue, changes in absolute terms during the detailed planning period are moderate due to their smaller amounts. Projected to reach 5,223 USDm in FY 28 (vs. 3,341 USDm in FY 23), they are expected to grow to 5,492 USDm in FY 40, constituting 6.81% of total sales and revenues by then.

Interest income mainly originates from financing plans extended to dealers via the John Deere Capital Corporation. We anticipate that a portion of equipment products sold is financed through these offerings. Thus, we assume a correlation between growth in equipment operations sales and interest income and employed a historical ratio as a forward-looking indicator. Yet, we made use of the very granular data available and linked each segment's interest income to the respective segment sales.

Within **other income**, insurance premiums and fees earned represent a significant portion, primarily tied to extended warranties sold for the company's products. For this and most other items within other income, we anticipate that there exists correlation between equipment operations sales and additional revenue streams such as trademark licensing and services. We do not anticipate further gains from operating lease dispositions, as this was a one-time event in FY 21-22.

(ii) Non-Operating Expenses

In a 6-year retrospective analysis (FY 18-23), non-operating expenses constituted approx. 2.17% of DE's total expenses, averaging at 765 USDm in absolute terms. In the forecast, we see a gradual increase in the portion of non-operating expenses to 2.34% of total expenses by FY 40. However, this increase is not driven by the non-operating expenses themselves; rather, it stems from the incremental decrease in the total cost base attributed to the rise in recurring revenues.

The non-operating net profit margin averages at 51.63% (FY 18-23). Throughout the forecast, the margin increases to an avg. of 58.56%. This is due to non-operating sales being tied to equipment operations sales, resulting in faster growth compared to the non-operating expense items, which are mostly linked to the balance sheet.

The primary non-operating expense items are operating lease disposition losses and impairments, insurance claims and expenses, and pension benefit expenses.

For **operating lease disposition losses and impairments**, we have associated them with the operating lease assets themselves and projected them as a percentage of the balance sheet item, ensuring a direct link to this particular asset category.

In the case of **insurance claims and expenses**, we've tied them to the amount of outstanding product warranties noted on the balance sheet. This association allows us to anticipate the expenses based on the expected warranty claims.

Pension **benefit expenses** are related to the liabilities stemming from pension obligations recognized on the balance sheet, which are ultimately contingent on the number of FTEs. Please see the SG&A forecasting approach for FTE projections.

Non-operating expenses also encompass accounting components, which either offset each other in the consolidated view or are subject to significant complexity and uncertainty, such as foreign exchange losses, and are therefore set to zero.

d) Financial Activities

DE's financial income after taxes has contributed on avg. to 2.29% of the net income attributable to DE over the six-year retrospective analysis. In the projection, we anticipate a decline to an avg. contribution of 1.13% to net income throughout the forecasting period. This decline is driven by the elimination of one-off income effects, which outweigh the exclusion of intercompany expense items in the consolidated view.

As part of the overall funding strategy, DE periodically transfers certain financing receivables into special purpose vehicles within their asset-backed securities program. Those entities then issue retail notes (*short-term securitization borrowings* in BS) on which DE receives interest payments, recognized as **finance income** (accounting for less than 2.00% of total sales on avg.). Consequently, the growth in short-term securitization borrowings, linked to the growth in net debt and EV, is utilized to project finance income. This leads to a gradual increase in the portion of non-operating sales over time, as the EV grows slightly faster than equipment operations sales.

Other financing income arises from gains on previously held equity investments and investment income. Gains on previously held equity investments occurred only in FY 22-23 and are considered a one-off payment and, therefore, projected as zero for the forecast period. Investment income is assumed to remain constant in the future, as the specific investments held by DE are not disclosed.

On the expenditure side of financing activities, interest paid on the company's debt financing represents a significant component. We applied the same methodology used for the operating segments and observe a consistent percentage relative to total debt outstanding of 1.97% for FS and 0.69% for Corporate and employed this metric to forecast interest payments. Interest expenses for the intercompany segment are anticipated to converge to net zero in the consolidated view.

Provision for income taxes have been forecasted using the statutory tax rate of 21.00%. Given the unpredictable nature of tax adjustments and no loss-making years are projected, these have been set to zero. Thus, the statutory tax rate equals the effective tax rate throughout the forecasting period.

2) Forecasted Balance Sheet

Despite DE's total assets peaking in FY 23 at 104,087 USDm (+15.61% to prior year) our forecasting assumptions anticipate a drop of 9.03% to 94,687 USDm for FY 24.

Growing at slower pace compared to the income statement, FY 23 values are only reached by 2032 ultimately standing at 136,822 USDm in FY 40.

a) Invested Capital

Looking at invested capital includes operating and non-operating assets net of the respective liabilities. This has significant influence on the debt, as explained later.

(i) Operating Assets

In a 6-year retrospective analysis, operating assets constituted 87.90% of DE's total assets, serving as the primary driver of the balance sheet. Given no identified reasons for changes in the balance sheet structure, the portion of operating assets remains consistent throughout the forecasting period.

Financing receivables, the most significant operating assets at over 45.00% of the total, are linked to the financing offerings provided by the John Deere Capital Corporation's for products within the equipment operations. We assumed that the receivables are correlated with equipment operations sales and forecasted them as a historic percentage of the non-recurring equipment operations sales (82.00%).

Trade accounts receivables have been forecasted using a similar approach, but with the distinction of using revenues specific to the business lines to forecast PPA, SAT, and CF levels on a standalone basis.

We evaluated DE's **working cash** needs by examining the proportion of working cash to non-recurring equipment operations revenue. DE traditionally maintains around 10.00% of this revenue for operational liquidity, despite higher cash reserves during FY 20 and FY 21 at 22.60% and 20.18%, respectively due to precautional measures following the outbreak of COVID. We employed 10.00% as our forecasting metric as represented in **figure 15**.

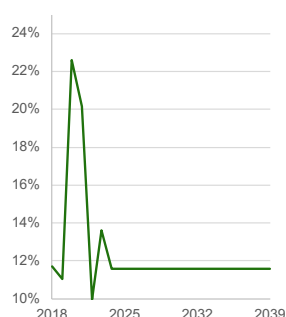


Figure 15: Evolution of Working Cash in % of Total Non-Recurring Equipment Operations Revenue. Source: Analyst Analysis.

Equipment on operating leases includes leased machinery for equipment machinery production, adaptable to demand. We applied the FY 22-23 avg. ratio of non-recurring equipment operations revenue (13.21%) throughout the forecasting period.

DE's **inventories** include finished goods and parts, raw materials and supplies, work-in-process, and a Last-In, First-Out (LIFO) adjustment. The unadjusted inventory level is derived using the avg. days of inventory outstanding of 84 days (FY 18-22) to forecast total FIFO inventory. We applied the historical distribution to the four inventory components to obtain pre-adjustment inventory levels. Maintaining a historically stable ratio of 8.22% of total assets, DE's inventory management is deemed effective, with finished goods and parts comprising the largest portion, averaging around 64.00%.

Property, **Plant & Equipment (PP&E)** is the primary non-current operating asset. We project them to grow as a percentage of non-recurring equipment operations revenue, using the 5-year avg. as the future metric. With a ratio of 15.67%, DE aligns with the industry benchmark of 10.00% to 20.00% common for manufacturing companies. It's noteworthy that DE deducts depreciation, forecasted as a constant 55.20% of unadjusted PP&E throughout the forecasting period.

For **deferred income tax assets**, we netted them against the corresponding deferred income tax liabilities. We utilized the net deferred taxes from the prior year and applied the avg. ratio of deferred tax assets to liabilities to project both positions.

(ii) Operating Liabilities

Operating liabilities equaled 17.00% of DE's core assets in the 6-year retrospective view on avg. Yet, we project them to grow to an avg. of 22.23% of core invested capital, with a notable 6.96% increase from FY 23-24, primarily due to a backlog in trade payables. Despite DE's core assets being sensitive to revenue fluctuations and its decline in FY 24, core liabilities are anticipated to grow by 23.10% in FY 24.

DE's avg. payable period hovered steady at 149 days (FY 20-23), compared to lower levels at around 130 days in earlier years resulting in a gradual backlog in supplier payments. This cash management strategy is expected to continue for three more years tied to the projected downturns in net income. From FY 27 on, we apply a payback period of 144 days, thereby reducing the core liabilities to core invested capital ratio. This logic applies to both **accounts payable** and **accrued expenses**. Given their subcomponents, we maintained a consistent distribution.

(iii) Non-operating Assets

In a 6-year retrospective analysis, non-operating assets constituted 12.10% of DE's total assets, serving as a subordinate driver of the balance sheet.

Current non-operating assets entail **marketable securities** and **securitized financing receivables**. DE describes marketable securities as securities held for sale which we assume to remain constant in present value terms. This means that after DE discounts these assets at the "applicable benchmark yield curve plus market credit spread," we projected a growth rate of 3.60% based on the 10-year US yield, along with an additional 0.75% to account for the current market credit spread for DE. Regarding the financing receivables used in the ABS-program, we've noted that DE utilizes approx. 15.41% of

its financing receivables for this program which we assumed to remain constant throughout the forecasting period.

Accounting for around 5.00% of totals assets and subordinate impact on the valuation result, the non-current portion of non-operating assets was mostly forecasted to grow in proportion to revenue, except for retirement benefits, linked to the number of FTEs.

(iv) Non-operating Liabilities

Non-operating liabilities equaled 64.83% of DE's non-operating assets in the 6-year retrospective view on avg. with a gradual decrease from 87.43% in FY 19 to 39.06% in FY 23. The forecasting foresees a stable level at around 45.00%. Like the operating section, non-operating liabilities don't decline with revenues yet show small positive changes in YoY-growth, linked to the projection of the avg. payable period. The non-operating portion is less affected by the backlog in payables due to the smaller share of account payable to total non-operating liabilities.

Retirement **benefits** were projected based on the number of FTEs, as explained earlier. Redeemable noncontrolling interest arises from a call option to purchase the remaining ownership in Kreisel by FY 27. It is forecasted to remain at its FY 23 value of 97 USDm until FY 27 and cease to exist thereafter.

b) Financial Liabilities

Financial liabilities are categorized into four segments: short- and long-term borrowings, dividends payable, and accrued interests. Borrowings constitute the most significant portion, with long-term borrowings holding the highest share.

Historic data reveals that long-term borrowings consistently accounted for just under 2/3 of the total debt, except in FY 20-21 when management increased cash reserves to reduce risk. Based on this pattern, we assume that long-term debt will persistently represent 2/3 of the total debt. Vice-versa, short-term borrowings averaged just under 1/3 of total debt and are expected to hold this proportion in the future. Approx. 1.00% of outstanding debt is allocated to accounts payable and accrued expenses.

The management's strategy of deleveraging in FY 20-21 is evident in the development of the D/E ratio. As the uncertainties of the pandemic are left behind, DE's management intends to re-leverage the company to pre-COVID levels. We, therefore, assume the capital structure to change until it reaches the aimed pre-COVID level where it remains constant from then on. More detailed, we anticipate a slight decline in the D/E ratio in FY 24 due to the cyclical downturn, followed by an increase between 11.00% and 13.00% in the next three years. The ratio reaches the target of 3.89 in FY 27, remaining constant thereafter, aligning with the avg. D/E ratio of FY 18-19 (3.89; calculated in book values); see **figure 16**. With the debt structure clarified we employed the following equation together with the target D/E ratio to arrive at the absolute values of total debt:

$$\text{Total Funds Invested} + \text{Excess Cash} = \text{Debt} + \text{Equity}.$$

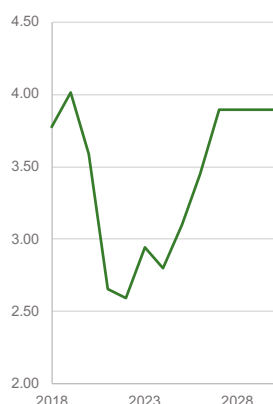


Figure 16: Evolution of D/E Ratio. Source: Deere & Co., 2023; Analyst Analysis.

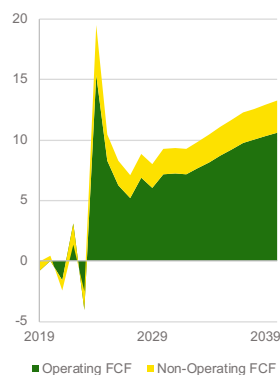


Figure 17: Evolution of Operating and Non-Operating FCF.

Source: Deere & Co., 2023; Analyst Analysis.

3) Cash Flow Statement

Based on the above projections, DE's unlevered FCFF averages approx. 17.00% of total sales and revenues throughout the forecasting period. Notably, FY 24 shows a significant increase compared to FY 23, arriving at a FCFF of 19,460 USDm as represented in **figure 17**. This is attributed to deductions in revenue-related assets showcasing the change from record-high in FY 23 to the drastic cyclical downturn in FY 24.

The YoY-growth in core FCFF stabilizes from FY 33 onwards, gradually decreasing from 6.73% to 2.90% in FY 40 thereafter. Utilizing core FCFF and the NOPLAT to compute the reinvestment rate which implies a stable growth rate of 2.20% from FY 28 on, which was subsequently applied as the terminal value (TV) growth rate.

CAPEX has not been projected separately. While they remain important for maintaining physical assets, as explained e.g. in the PP&E projections, we consider R&D expenses more critical in driving innovation and DE's performance.

III) Valuation

This chapter presents the results of the valuation of DE as of December 31st, 2024. We applied the valuation methodologies according to Koller & McKinsey & Company Inc. (2020) and Berk & DeMarzo (2023.)

1) Cash Flow Based Valuation (APV)

To determine DE's value based on the projection of future cash-flows, we use the Adjusted-Present-Value (APV) method. As DE's capital structure is projected to remain changing until FY 27, we decided to use the APV over the DCF method.

Starting the APV valuation, we discount the FCFF with the R_u to calculate the unlevered EV as of the valuation date. Due to the changing capital structure between FY 24-27 we used slightly different approaches to determined R_u (**figure 18**) leading to 7.69% as long as the D/E ratio is variable and 7.68% from FY 28 onwards when the D/E ratio remains constant. Besides the yearly discounts, we assume a steady state from FY 38 onwards as we observe steady growth rate of 2.22% implied by the reinvestment rate. This is almost equal to the expected long term GDP growth of 2.21% meaning the company will grow at the same speed as the economy – a reasonable assumption to apply the perpetuity formula. Again, we used the constant R_u of 7.68% in the perpetuity formula.

To get to the levered EV, we determine the value of the tax shield by discounting the interest tax shield of each year. Due to the changing capital structure and, thus, changing risk profile of the tax shield, we used the R_d of 5.60% to discount the tax shield from FY 24 to FY27. This decision stems from the anticipation of an increasing D/E-ratio over these years, in line with the DE's strategic leverage plan. In scenarios where leverage is variable or increasing, the risk and value of interest tax shields are more closely related to the company's debt. Particularly during periods of increasing debt, the risk associated with the tax shields mirrors the default risk of the company's debt. Therefore, applying R_d for discounting aligns with the increasing risk profile during these years of increased leverage to accurately reflect DE's financial dynamics.

$$R_{u, constant} = \frac{D}{D+E} * R_D + \frac{E}{D+E} * R_E$$

$$R_{u, changing} = \frac{D-TS}{D-TS+E} * R_D + \frac{E}{D-TS+E} * R_E$$

Figure 18: Calculation approaches for R_u .

Source: Koller & McKinsey & Company Inc. (2020)

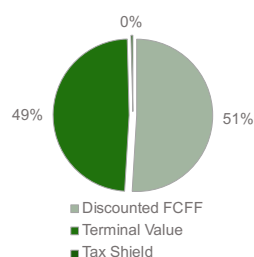


Figure 19: EV composition in APV valuation. Source: Deere & Co., 2023; Analyst Analysis.

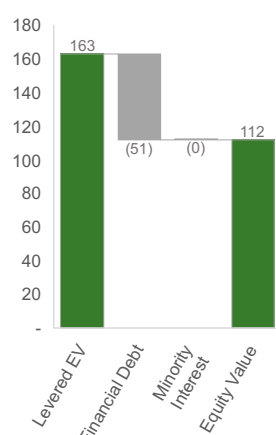


Figure 20: EV-Equity Bridge (APV).

Source: Analyst Analysis.

From FY 28 onwards, as the D/EV level is projected to remain constant and DE has been able to handle the increased leverage sophisticatedly, the risk of default reduces and makes the tax shield more exposed to the risk of the company's assets. Thus, we used the R_u (constant) to discount the tax shield from FY 28 onwards until perpetuity.

Additionally, we value the cash flows from financial debt by discounting them at R_d and the value of residing minority interests and the R_e . In both perpetuity formulas we assumed the same TV growth rate as for the latter cash flows as well as the respective discount rates used for the years before.

Summing up the value of the unlevered EV, tax shield, minority interests, and subtracting net financial debt, yields the equity value at the end of each period. See **figure 20** for the EV-Equity bridge. To determine the equity value as of the valuation date, we included an adjustment factor considering DE's value in FY 25 that is attributable to the period up to the valuation date. This results in a share price of 391.89 USD. As the APV approach entails the most precise projections, it is determined as the overall target price.

2) Limitations

a) Sensitivity Analysis

As the valuation methods applied are highly dependent on the underlying assumptions, we run a sensitivity analysis to analyze the impact of key assumptions.

(i) APV Valuation

We first analyzed the effect of R_d and the D/EV ratio on R_u . We choose R_d between 4.51% as lower bound, which corresponds to the risk-free-rate proxy and extrapolated the same interval to 6.69% as upper bound. For the D/EV ratio range, we choose 25.00% as the lower bound and 50.00% as upper bound, as the current D/EV ratio is around 38.12%. The analysis resulted in a range for R_u between 7.24% and 8.30% reflecting acceptable sensitivity with a standard deviation of 2.74 percentage points in absolute terms or 3.57% relative to the mean, which remains close to the value using our assumptions (7.65% vs 7.68%).

Following a similar approach, we analyzed the effect of the equity beta and the E/EV ratio on R_u . For the equity beta range, we used the lower and upper bounds at a 99.00% confidence interval of all relevered equity betas included in the computation of DE's equity beta yielding a range from 0.797 to 1.209 with 1.024 being the actual equity beta. The E/EV range follows the same approach as for the D/EV range. By that, we arrive at a range for R_u between 6.94% and 8.36%. With the avg. resulting R_u of 7.66%, slightly deviating from the 7.68% used, R_u shows acceptable sensitivity with a standard deviation of 4.22%. In both cases we can observe a lower sensitivity towards the capital structure than towards R_d or the equity beta, when looking at the standard deviation.

Using the bounds from the previous sensitivity for R_u , we analyzed the effect of R_u and the TV growth rate on the target share price. From the steady state implied TV growth rate of 2.22%, we add and subtract a total of 1.25% in steps of 0.25%, as we do not assume the company to grow much faster or slower than 1.25% compared to the overall economy. We see that as the discount factor decreases and the TV growth rate increases the stock price increases significantly and vice versa. This ultimately

R_u / TV USD	0.97%	1.72%	2.22%	2.72%	3.47%
6.94%	424.44	448.95	468.45	490.89	529.74
7.24%	400.75	420.23	435.12	451.41	476.16
7.53%	379.19	394.43	405.50	416.76	430.32
7.68%	369.14	382.50	391.89	400.98	409.81
7.81%	360.18	371.92	379.88	387.12	391.98
8.09%	343.31	352.14	357.55	361.54	359.49
8.36%	327.70	334.00	337.22	338.44	330.63

Figure 21: Sensitivity Analysis – APV – Effect of R_u and TV growth rate on Share price. Source: Analyst Analysis.

β_e / g USD	6.93%	7.13%	7.43%	7.73%	7.93%
0.80	546.14	675.63	1048.54	2340.19	13090.73
0.89	396.67	460.82	608.40	895.05	1304.92
1.02	281.23	312.02	373.34	464.65	555.17
1.10	242.76	265.37	308.46	368.26	422.91
1.21	201.44	216.76	244.68	280.86	311.57

Figure 22: Sensitivity Analysis – DDM. Effect of equity beta and dividend growth rate on share price. Source: Analyst Analysis.

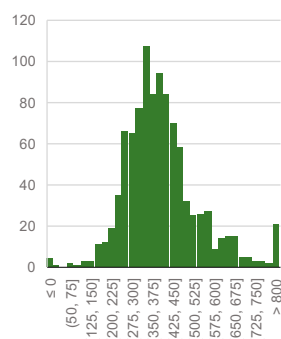


Figure 23: Monte Carlo Simulation – Distribution of Target Price in USD (APV).

Source: Analyst Analysis.

Parameters Tested	Mean	Stdv.
ru constant	7.73%	1.17%
ru changing	7.56%	1.17%
rd	5.58%	0.71%
re	8.75%	1.00%
TV growth rate	2.22%	0.83%
FCFF YoY Growth in TV	2.62%	0.83%
FCFF YoY Growth FY24	-888.39%	3.50%

Output Statistics	
Min	-1140.90
Max	2016.31
Mean	396.34
Stdv	174.54
Stdv (in %)	44.04%

Figure 24: Monte Carlo Simulation – Parameters (APV).

Source: Analyst Analysis.

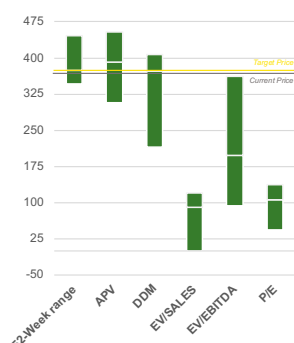


Figure 25: Football Field Chart w/Target Price in USD per Valuation Method (Upper Bound/Mean/Lower Bound).

Source: Analyst Analysis.

results in a share price range between 327.70 USD and 529.74 USD, a standard deviation of 10.65 USD or 11.94%. The share price is more sensitive to the discount rate than to the TV growth rate; see **figure 21**.

Lastly, we tested the share price fluctuation around changes in YoY growth of equipment operations revenue (+/- 3.75%) and gross margin (+/- 0.50%) in FY 24 to check the valuations sensitivity towards the assumptions regarding the cyclical downturn. With a price in the range of 369.11-415.28 USD and a standard deviation of only 2.72% the target price shows very low sensitivity to these input factors. Further tables of the analysis and detailed information on Statistics are displayed in the **Consolidated Appendix**.

b) Monte Carlo Simulation

The APV approach includes a broad set of assumptions as tested individually in the sensitivity analysis. To analyze the impact of all input variables, we have conducted a Monte Carlo simulation. We altered Ru (both variations), Rd, Re, the TV growth rate and the TV growth of unlevered FCFF with the same standard deviation as in the sensitivity analysis as visible in **figure 24**. Additionally, we included the growth of unlevered FCFF for FY 24 to test the sensitivity towards the cyclical downturn. We receive an avg. share price of 396.34 USD with a standard deviation of 174.54 USD or 44.04%. The distribution of all 1000 simulated scenarios can be found in **figure 23**.

We observe a normal distribution around the mean which is very close to the share price found in the APV. As we see no single events that could alter DE's business significantly, we believe that this simulation includes most possible events. Lacking specific yet somewhat realistic scenarios, we did not proceed with a scenario analysis.

c) Additional Limitations

Beside the assumptions tested in the **Part 1**, we like to be transparent and recognize certain assumptions and limitations we identified.

The APV valuation combines operating- and non-operating cash flow to arrive at a consolidated expected FCF, discounting and associating both portions of DE's business with the same risk profile. With more detail regarding each portions risk profile and their distinctions available, one could increase accuracy by using an individual discount factor for each portion. However, even though this would increase the accuracy technically, the impact on the valuation result is likely limited.

As seen in **Part 1**, the APV valuation's sensitivity to the computed Ru is evident. It's crucial to note that the D/EV ratio used for Ru calculation was calculated using the book value of debt and the market value of equity due to the unavailability of the market value of DE's debt. This might introduce some limitations.

ESG considerations were incorporated solely through the projection of DE's cash flows as part of their business operations. Yet, the computed cost of capital components only account for risk perception compensation for ESG factors in an indirect way through their different calculation approaches, despite the perceived materiality of ESG for DE. One could consider analyzing the necessity of an

additional integration of ESG into cost of capital to provide an even more reflection of the associated risks.

IV) Recommendation

Deducting the target price of 391.89 USD on December 30, 2024, and an expected dividend payment in FY 24 of 5.53 USD (assuming a stable dividend yield) from the current share price of 364.41 USD (as of 30/11/2023) results in an upside potential of 33.01 USD in absolute and 9.06% in relative terms.

See **figure 25** and **26** for an overview of all valuation methodologies.

Despite DE publishing record results for FY 23, challenges lie ahead, particularly in FY 24, anticipating the next cyclical downturn in the agricultural economy with a projected -13.55% decrease in total sales and revenues for DE.

While near-term conditions are challenging, tied to basic human needs with rising projected demand, DE remains a solid long-term investment. Considering the valuation date, our recommendation for the stock is **HOLD**.

USD	APV	DDM	Comps.
Target Price	391.89	373.34	361.55
Price (30/11/23)	364.41	364.41	364.41
Future Dividends	5.53	5.53	5.53
Return (absolute)	33.01	14.46	2.68
Return (relative)	9.06%	3.97%	0.73%
Recommendation	HOLD	HOLD	HOLD

Figure 26: Valuation
Summary and Return
Analysis.

Source: Analyst Analysis.

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XCMG Construction Machinery Co., Ltd. (2022). Annual Report 2022. Xuzhou, Jiangsu, China: XCMG Construction Machinery Co., Ltd

Deere & Company (DE:US)

Industrial (Agriculture & Heavy Machinery)

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Company Report

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The Deere in Economic Headlights – Still Running Strong?

Beyond the Storms: A Hold Strategy for Evergreen Returns in Agribusiness.

- Our recommendation is to **HOLD** Deere & Co. (DE) considering a target price of 391.89 USD as of Dec-31-24, reflecting an **upside potential of 9.06%** compared to the share price of 364.41 USD (Nov-30-23).
- While DE and the whole **agricultural equipment industry peaked in 2023**, investor sentiment is **conservative** and anticipates the next **cyclical downturn** to hit in **2024** at a **downturn of 10-15%** (-13.55% in total sales for DE).
- **Dual-industry presence** helps DE to navigate through challenging times, with revenue from construction and forestry being less affected, still projecting a downfall between 5.-10.00%.
- Despite short-term challenges, DE's **exposure to basic human needs** in combination with a **rising population** suggests **sustainable demand and lasting returns** for DE as industry leader in a longer-term perspective.
- With avg. gross and net profit margins until FY 40 of approx. 37.06% and 18.69% respectively and avg. ROIC, DE demonstrates **strong operational excellence** and **profitability**, indicating a **robust financial position**.
- Market trends such as **technology integration** and **sustainable practices** add **complexity** yet offer growth opportunities for DE through the implementation of a SaaS-business model.

Company Description:

Deere & Company (United States) is a globally operating corporation specialized in the manufacturing and distribution of various products for agriculture, construction, forestry, and turf care industries.

Recommendation:	HOLD
Price Target (Dec-31-24):	391.89 USD
Price (Nov-30-23)	364.41 USD

Source: Refinitiv Database, 2023.

52-week range (USD)	345.98 - 446.33
Market Cap (USDm)	104,039
Outstanding Shares (m)	285.50

Source: Refinitiv, 2023.



Figure 1: Cumulative Returns Deere & Co. LTM Daily in USD vs. S&P 500. Source: Refinitiv Database, 2023.

Key Financial Metrics (Values in USDm)			
	FY 23	FY 24F	FY 25F
Total Sales and Revenues	61,251	52,952	52,627
YoY-Growth	16.50%	-13.55%	-0.61%
FCFF	-2,460	19,460	10,451
Net Income attrib. to DE	10,166	7,327	7,499
Net Profit Margin	16.60%	13.84%	14.25%
EPS	35.61	25.66	26.27
YoY-Growth	49.30%	-27.93%	2.35%

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List of Abbreviations

ABS: Asset-Backed Securities	JDPAC: John Deere Political Action Committee
AGCO: Agricultural Company	LIFO: Last-In, First-Out
AI: Artificial Intelligence	M&A: Mergers & Acquisitions
Approx.: Approximately	M&M: Mahindra & Mahindra
APV: Adjusted Present Value	MRP: Market Risk Premium
Avg.: Average	MS: Market Share
BS: Balance Sheet	MSCI: Morgan Stanley Capital International
CAGR: Compound Annual Growth Rate	NIST: National Institute of Standards and Technology
CAPEX: Capital Expenditures	NOPLAT: Net operating profit less adjusted tax
CAPM: Capital Asset Pricing Model	NYSE: New York Stock Exchange
CAT: Caterpillar Inc.	OCI: Other Comprehensive Income
CF: Construction & Forestry	OPEX: Operating Expenses
CCC: Cash Conversion Cycle	PPA: Production & Precision Agriculture
CEO: Chief Executive Officer	PP&E: Property, Plant & Equipment
CNHI: CNH Industrial N.V.	Rd: Cost of Debt
COGS: Cost of Goods Sold	Re: Cost of Equity
CDS: Corporate Default Swap	ROE: Return on Equity
DCF: Discounted Cash Flow	ROI: Return on Investment
DDM: Dividend Discount Model	ROIC: Return on Invested Capital
DE: Deere & Company	Ru: Unlevered Cost of Equity
D/E: Debt-to-Equity ratio	R&D: Research and Development
EBITDA: Earnings Before Interest, Taxes, Depreciation, and Amortization	SaaS: Software as a Service
EPS: Earnings per Share	SAT: Small Agriculture & Turf
ESG: Environmental, Social, and Governance	SSE: Sum of Squared Errors
EV: Enterprise Value	SSE: Sum of Squared Errors
FAO: Food and Agriculture Organization of the United Nations	SG&A: Sales, General and Administrative
FCF: Free Cash Flow	SWOT: Strengths, Weaknesses, Opportunities and Threats
FCFF: Free Cash Flows to Firm	S&P: Standard and Poor's
FTEs: Full-Time Equivalents	TV: Terminal Value
FS: Financial Services	UK: United Kingdom
FY: Fiscal Year	US: United States of America
GDP: Gross Domestic Product	USD: United States Dollar
GHG: Greenhouse Gas	USDm: United States Dollars in millions
GSCI: Goldman Sachs Commodity Index	USDA: United States Department of Agriculture
HHI: Herfindahl-Hirschman Index	YoY: Year-over-Year
ibid.: Reference to afore mentioned source	YTM: Yield-to-Maturity
IMF: International Monetary Fund	



I) Company Overview

The following section introduces the analyzed company.

1) Company Description

Deere & Company, United States (DE or "the Company") is an international corporation, industry-leading in the manufacture and distribution of a broad range of products for the agriculture, construction, forestry, and turf care markets.

With sales of 61,251 USDm and a net income attributable to DE of 10,166 USDm in FY 23 (FY ending 31/10), DE was recently able to achieve record breaking results in the history of the company. In FY 22, the company employed 82,200 FTEs, thereof 38.93% in the United States and Canada.

Headquartered in Moline, Illinois, DE has expanded its operations across the globe, serving the needs of farmers, landowners, construction professionals, and more in over 100 countries. **Figure 2** shows the regional revenue split.

With a rich history dating back to its founding in 1837 by John Deere himself, the company has established itself as a symbol for innovation, quality, and reliability in the world of agricultural and heavy machinery.

2) Business Segments

On a macro level, DE presently distinguishes between *Equipment Operations*, which refers to production and sale of agricultural machinery, and *Financial Services (FS)*, which refers to financing offerings and company-wide financing activities.

Equipment operations is organized in three segments: Production & Precision Agriculture (PPA), Small Agriculture & Turf (SAT) and Construction & Forestry (CF), with revenues split as shown in **figure 3**.

a) Production & Precision Agriculture (PPA)

PPA is the largest operating segment accounting for almost half of the company-wide total sales and revenues in FY 23 (43.74%). The segment develops and delivers global equipment and technology solutions to unlock customer value for production-scale growers of large grains, small grains, cotton, and sugarcane.

The primary products include large and certain mid-size tractors, combines, cotton pickers, sugarcane harvesters and loaders, as well as soil preparation, seeding, application and crop care equipment. The PPA segment has only been reported separately since 2018 and was previously reported together with the SAT segment.

b) Small Agriculture & Turf (SAT)

SAT is the second-largest operating segment accounting for more than one fifth of the company-wide total sales and revenues in FY 23 (22.85%). The segment produces and sells global equipment and technology solutions to unlock customer value for dairy and livestock producers, high-value crop producers, and turf and utility customers.

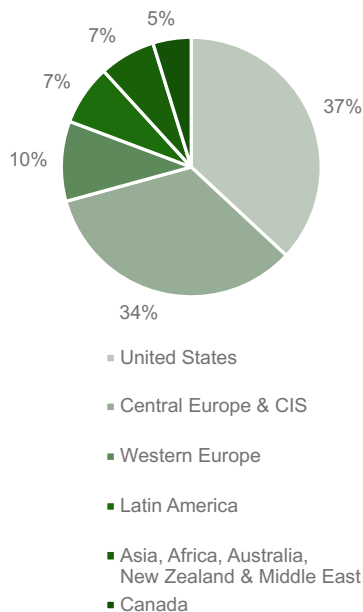


Figure 2: Regional Revenues Split 2023. Source: Deere & Co., 2023.

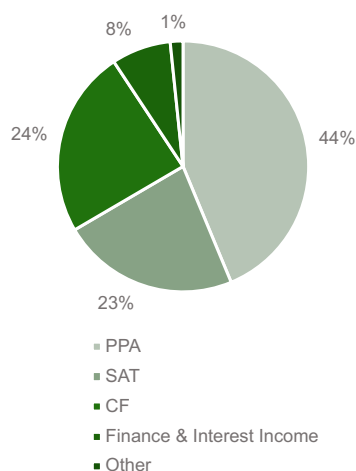


Figure 3: Total Sales and Revenues per Segment 2023. Source: Deere & Co. 2023.

Main products include certain mid-size and small tractors, as well as hay and forage equipment, riding and commercial lawn equipment, golf course equipment, and utility vehicles.

c) Construction & Forestry (CF)

CF has historically always been the smallest operating segment, yet it surpasses SAT in FY 23 for the first time (24.15% of total sales). The segment offers a broad range of machines and technology solutions organized along earthmoving, forestry, and roadbuilding. CF's primary products include crawler dozers and loaders, four-wheel-drive loaders, skid-steer loaders, excavators, milling machines, and log harvesters.

d) Financial Services (FS)

Accounting for 7.65% of the company-wide total sales and revenues in FY 23, the FS segment finances sales and leases by DE dealers of new and used equipment throughout all divisions. In addition, the FS segment provides wholesale financing to dealers of the foregoing equipment, finances retail revolving charge accounts, and offers extended equipment warranties.

3) Ownership and Management Structure

a) Ownership Structure

DE is a publicly traded company with 285.5m common shares in circulation (as of Nov-31-23), listed on major stock exchanges like the New York Stock Exchange (NYSE) under the ticker symbol "DE:US" (Refinitiv Database, 2023).

Of these shares, 99.79% are free-float-traded, with a substantial 78.63% held by institutional investors. The major shareholders are shown in **figure 4** (ibid.).

The significant institutional ownership of DE and portion of stocks in free-float signal confidence in the company's long-term stability, and results in lower stock price volatility due to institutional investors' long-term strategies as well as increased stock liquidity, facilitating easier trading. However, it also carries potential risks, as large-scale divestments by institutional investors can lead to substantial declines in the company's stock price.

b) Management Structure

John C. May is Chief Executive Officer (CEO) of DE and Chairman of the Board. He joined DE in 1997, accepted the role of CEO in November 2019 and became Chairman in May 2020. Under his leadership, the market capitalization has more than doubled and exceeded 100 USDbn for the first time. The senior leadership team composes of 10 people, thereof two are woman. The avg. complete years of service is 21.7 years. As of January 2023, DE's board of directors composes of 11 people including May as the Chairman of the Board. Thereof, four are woman. The avg. complete years of board service is 7.45 years – again, confirming long-term commitment to the company.

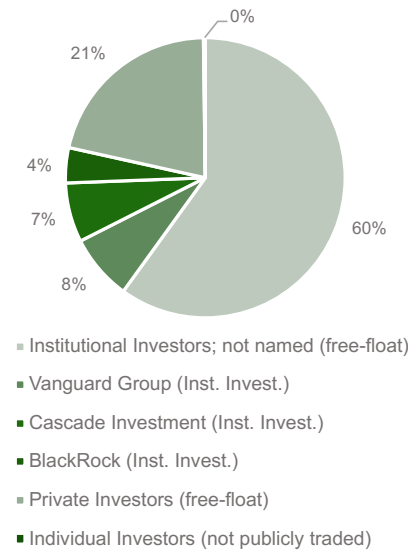


Figure 4: DE's Ownership Structure as of Nov-30-23.
Source: Refinitiv Database, 2023.

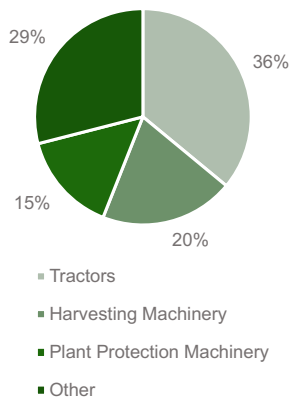


Figure 5: Product Mix Global Agricultural Market.

Source: Statista, 2023.

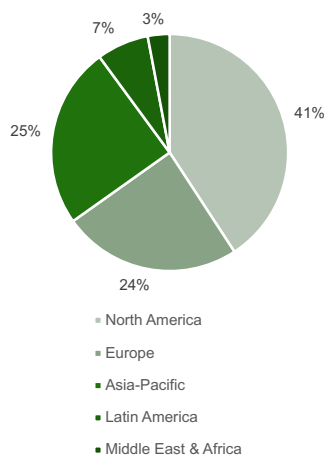


Figure 6: Global Agricultural Market – Geographical Split 2021.

Source: Statista, 2023.

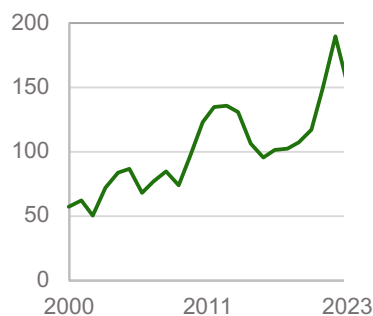


Figure 7: Inflation-Adjusted Net Farm Income 2000-2023 (USD bn). Source: Statista, 2023.

II) Industry Analysis

The following chapter provides an overview of the industries in which DE operates.

1) Market Size, Growth, and Drivers

DE is a key player in the global **agriculture equipment market**. It refers to the sale of various machinery and equipment used in the farming and agricultural industry.

In 2022, the global agriculture equipment market generated a revenue of 156 USDbn (Market Business Insights, 2023). By 2030, the revenue is expected to reach 236 USDbn (5.87% CAGR). With sales of agricultural equipment of 35,383 USDm in FY 22 (PPA and SAT combined), DE holds the largest market share of 22.68%. See **figures 5** and **6** for market sub-segmentation and the geographical market split respectively.

With rising prosperity, Asia-Pacific is expected to exhibit the highest growth of 63.64% until 2028. North America and Europe are projected to grow at slower rates of 48.65% and 33.33% until 2028 (Statista, 2023).

Despite longer-term projections indicating a CAGR above 5.00%, investor sentiment regarding the agricultural equipment sector is currently pessimistic for the near future as shown in **figure 9**. Aside from macroeconomic conditions (*see chapter II)2*), farm income stands out as a critical driver shaping the state and dynamics of the agricultural equipment market. It serves as a direct reflection of the purchasing power and financial capabilities of the primary customers: farmers.

Historically, nominal US net farm income has exhibited cyclical patterns, as visible in **figure 7**. Downturns observed between 2005-07 and 2015-19 followed periods of prosperity in 2011-14 and 2021-22. Despite peaking in 2022 with profits totaling 183,00 USDbn, net farm income is projected to experience a decline of 22.80% in 2023 (USDA, 2023). Assuming a one-year lag in its impact on the agricultural equipment market and mirroring cyclical trends from previous years, the market is anticipated to undergo a significant downturn before recovering and entering a new cyclical upward trend. This is influenced by the reduction of government payments, coupled with rising production costs, until price normalization is achieved (*ibid.*).

Canada and North America appear to be the most affected by the cyclical downturn (-15.00% in 2024), followed by Europe and South America (-10.00%), with Asia-Pacific experiencing only moderate downturns (Market Business Insights, 2023).

While DE is primarily associated with agriculture equipment, DE is also present in the **heavy machinery market**. The market entails forestry, construction, and roadbuilding and refers to equipment that performs specific construction or demolition functions. It is used for earthmoving, lifting materials, and forestry but also used in infrastructure, residential, commercial, and industrial building.

In 2022, the global heavy equipment industry was estimated to be worth over 149.70 USDbn and is expected to reach 194.70 USDbn by 2030 (3.80% CAGR) (Marketsandmarkets, 2023). With sales in the CF segment of 12,534 USDm in FY 22, DE accounts for a market share of 8.37%.

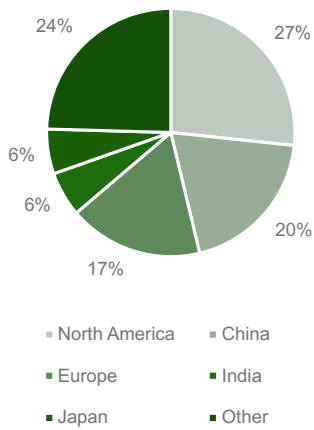


Figure 8: Global Heavy Machinery Market – Geographical Split 2022.
 Source: Statista, 2023.

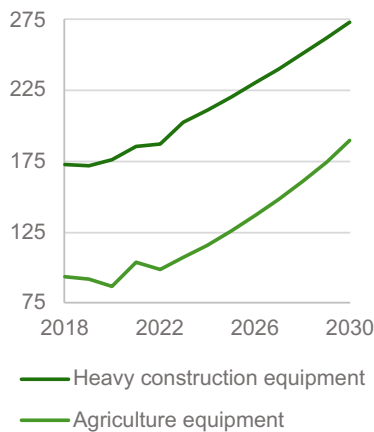


Figure 9: Evolution of Market Size in USDbn per Industry.
 Source: Market Business Insight, 2023; MarketsandMarkets, 2023.

Year	GDP
2020	-3.79%
2021	5.78%
2022	2.91%
2023 F	1.57%
2024 F	1.59%
2025 F	2.14%
2026 F	2.26%
2027 F	2.23%
from 2028 on F	2.23%

Figure 10: Revenue-weighted GDP expectations (Nominal).
 Source: IMF, 2023.

The geographical market split is shown in **figure 8**. China is projected to nearly catch up with North America until 2027 mainly attributed to the rising infrastructure development. The markets in North America and Europe are expected to decline by 10.94% and 4.65% until 2027 (Statista, 2023.).

For heavy machinery, short-term projections exhibit a more robust outlook compared to the agricultural sector with a projected downturn of 5.00% to 10.00% as visible in figure 9. Regarding the forestry pillar, global deforestation is projected to be zero by 2030 (Global Forest Watch, 2023). Although this entails a long-term decline in forestry activities towards extinction, it is presently associated with downturns in the short term of approx. -25.00% in 2024. However, the construction pillar adds heightened uncertainty. While general infrastructure expenditures exhibit resilience, capital-intensive mega projects and housing starts remain significantly impacted by the risen interest rates. This results in an anticipated decline of approx. -10% to -15% in FY 24. In contrast, roadbuilding activities are considered consisted over time, particularly in the US market, with no significant changes expected.

2) Macroeconomic Conditions

a) Economic Conditions

Global uncertainties, characterized by multifaceted factors such as the COVID pandemic, geopolitical conflicts like the Russian-Ukraine war, rising production and commodity costs, and associated consumer restraint have significantly impacted the macroeconomic landscape of DE's business operations in recent years. Overall, the industrial sector exhibits pronounced sensitivity to economic downturns.

We examined nominal GDP in regions with the highest revenue share as well as non-fuel primary commodity prices on a US-scale, see **figure 10**.

Revenue-weighted GDP experienced a sharp decline in 2020 due to the pandemic but is now in the process of recovery. Yet, YoY-growth in GDP is projected to remain slightly below pre-COVID levels, with an avg. YoY-growth rate of 2.00% (2023-2028) compared to 2.15% (2013-2019) (IMF, 2023). Inflation or production costs have not been assessed further as they are reflected within the nominal revenue-weighted GDP expectations.

Non-fuel primary commodity prices (inflation adjusted) demonstrated moderate fluctuations from 2000-06, with a significant dip and subsequent peak in 2011 (180). Following a modest decline until 2016, recent years have seen compressed fluctuations at a level around 150, reflecting overall increasing yet dynamic variations in commodity prices. This, again, has implications for farmers' income levels, thereby influencing their purchasing power concerning DE's agricultural equipment (ibid.).

The international scope of DE's operations adds a further layer of complexity. Currency volatility affects the costs of imported machinery, consequently impacting DE's competitiveness in foreign markets. Also, products within both industries are inherently capital-intensive and frequently require external financing on the customer side. Thus, the rise in interest rates affects customers access to DE's products, thereby dampening overall demand.

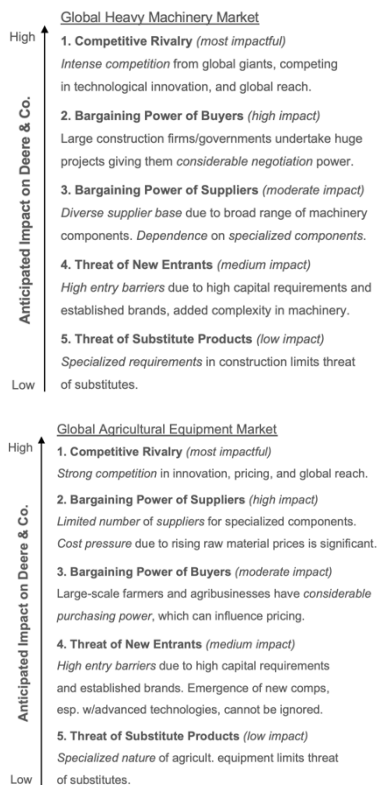


Figure 11: Porters Five Forces per Industry and its Impact on Deere & Co. Source: Analyst Analysis.

b) Additional Macroeconomic Conditions

Operating within a multifaceted **political** landscape, compliance with governmental regulations, primarily on safety standards, emissions control, import/export restrictions is mandatory for DE. Government subsidies and incentives for farmers can also influence demand for agricultural equipment.

The agricultural sector is part of the supply chain that serves one of the most fundamental human needs: nutrition. Growing global population, changes in dietary preferences, and evolving demographics are key **sociocultural factors** influencing the demand for agricultural products. Food production must increase by 60.00% until 2050 to feed a population of 9.3 bn people worldwide (FAO, 2023). As normal farming practices would place too much pressure on natural resources to accomplish that, increasing agricultural output in a sustainable manner is a key challenge.

Technological innovation like precision agriculture and autonomous vehicles played a pivotal role in significantly enhancing sustainability within agricultural production while reducing repetitive tasks. When coupled with digitalization, these innovations can optimize farming and construction operations, resulting in improved efficiency and increased productivity. The use of sustainable mechanization can boost land productivity by enhancing crop quality and decreasing operating times.

With technological innovations being vital success factors, intellectual property protection and a strong **legal** foundation gain significant relevance. Essential legal aspects also include product liability and compliance with safety standards, particularly as agricultural and heavy machinery must prioritize worker safety.

As for any production-heavy company, DE faces **environmental** challenges, especially when looking at greenhouse gas (GHG) emissions. While changes in weather patterns and extreme events are expected to create demand for specialized products and revenue growth, the industrial industry is also a major contributor to climate change. Energy-intensive manufacturing, combustion engines, and usage of pesticides are associated with the sector. Ongoing efforts on reducing direct and indirect GHG emissions will continue to be a driving force for market development in the coming years. See *section III)2)* for an analysis of DEs ESG strategy.

3) Competitive Landscape

Please see **figure 11** for a Porters Five Forces analysis on each industry and how key sources of competitive pressure impact DE.

a) Selected Peer Group

To understand DE's place within the competitive landscape, we analyzed its competitors from two angles to provide a multidimensional approach: *area of comparability* and *degree of comparability*, see **figure 12**. Throughout this report, only competitors with high or medium anticipated comparability are further analyzed.

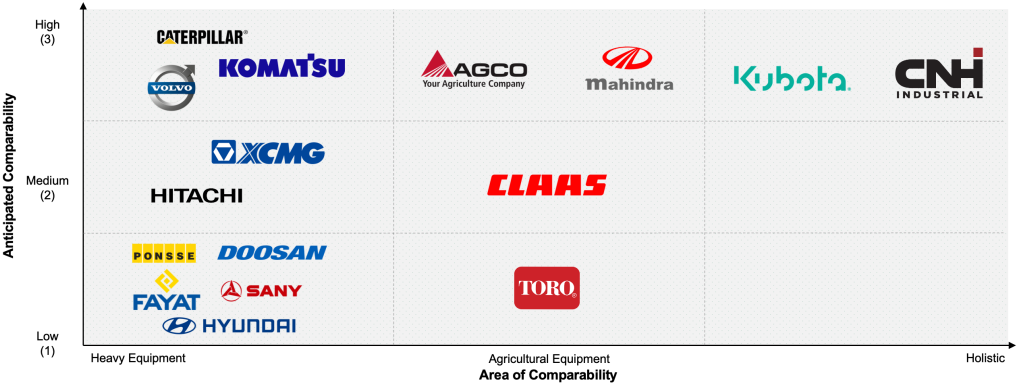


Figure 12: Competitive Landscape of Deere & Co. Source: Analyst Analysis.

(i) Holistic Competitors

Holistic competitors, like **CNH Industrial N.V. (CNHI)** and **Kabushiki Kaisha Kubota** (Kubota) are present in both the agricultural and heavy equipment industry, see **figure 13**.

CNHI (United Kingdom) is a multinational corporation maintaining global presence in major markets worldwide. It operates with two core segments: agricultural equipment and construction equipment, alongside a smaller financial services division. While CNHI shares structural similarities and a complementary product portfolio with DE, it is notably smaller in size, with an enterprise value (EV) at about 17.11% of DE's value. In contrast to DE, CNHI follows a multi-brand strategy, distributing its products under various brands such as Case IH, New Holland, and Steyr in the agricultural-, and Case Construction Equipment and New Holland Construction in the construction segment. In 2022, CNHI's revenue amounted to approx. half that of DE's, growing at a slower rate (18.04%) compared to DE's (26.89%). DE also excels in cost efficiency, achieving an EBITDA margin of 27.32% (2022), compared to CNHI's 21.00%. Despite its smaller size, CNHI is a noteworthy competitor to DE, holding a substantial market share of 11.52% in the agricultural and 3.73% in the heavy equipment market.

Kubota (Japan) operates in both markets as well. While DE provides a wider product range, Kubota specializes in compact and sub-compact tractors, focusing on a similar customer base. Kubota's EV is notably smaller, standing at around 1/3 of DE's. The total sales of 20,501 USDm account for 38.99% of DEs, and both companies show similar YoY growth rates in sales, hovering around 25.00%. One difference lies again in DE's robust EBITDA-margin and cost-efficiency, with Kubota's EBITDA margin being approx. half the size at 13.12%. Still, Kubota remains a significant competitor, holding a market share of 4.98% in the agricultural and 5.19% in the heavy equipment market.

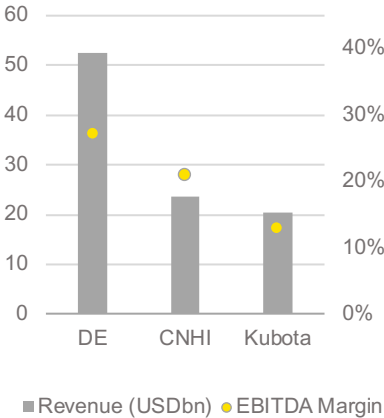


Figure 13: Holistic Competitors
Total Sales, EBITDA-Margin.
Source: Company Data, 2023.



MS: 22.68% 8.11% 3.42% 9.68%

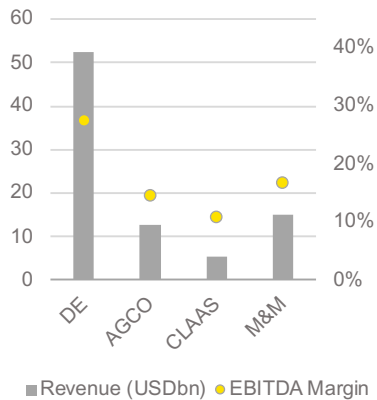


Figure 14: Agricultural Competitors KPI Comparison and Market Share (MS). Source: Company Data, 2023.



MS: 8.37% 16.90% 14.70% 6.59%

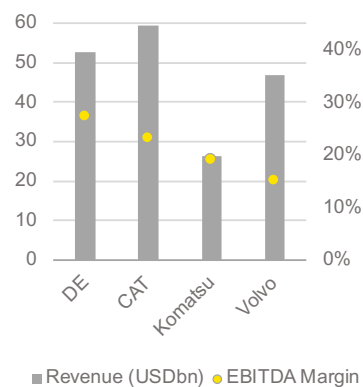


Figure 15: Heavy Equipment Competitors KPIs and Market Share (MS). Source: Company Data, 2023.

(ii) Agricultural Equipment Competitors

Agricultural competitors vie with DE's segments SAT and PPA. Three competitors are considered relevant here: **AGCO Corporation** (AGCO), **CLAAS KGaA** (CLAAS), and **Mahindra & Mahindra** (M&M). See **figure 14** for a comparison of KPIs. While DE commands the largest market share in 2022 (22.68%; PPA and SAT sales: 35,383 USDm), the market is not very concentrated. The Herfindahl-Hirschman Index (HHI) of 986.29 indicates a highly competitive landscape with a diverse set of participants.

M&M (India) is a manufacturing company operating in the business segments automotive, farm equipment, and technology services. Their farm equipment segment includes tractors, farm machinery, and utility vehicles, which directly competes with DE's offerings. In 2022, M&M achieved revenues of 15,102 USDm and an EV of 32,667 USDm, making it 30.90% the size of DE. M&M achieved exceptional YoY sales growth of over 56.00% in 2022, outperforming DE. However, M&M's EBITDA-margin was lower at 16.73% (DE: 27.32%). Overall, M&M holds the third-largest market share in the global agricultural equipment market (9.68%).

AGCO (United States) is a global agricultural equipment manufacturer, directly competing with DE in the same markets. AGCO employs a multi-brand strategy, marketing products under well-recognized brands like Massey Ferguson, Fendt, and Challenger. While both companies have a similar global reach, AGCO has a stronger focus on the European market (50.00% of total revenues in 2022), DE emphasizes North America (53.71% of equipment operations revenues in FY 22). AGCO's revenues in 2022 were 1/4 of DE's, but it dominates the European market, holding similar market shares there. AGCO's YoY sales growth is comparable at 23.16% (2022), with a lower EBITDA margin of 14.46%, improving more rapidly than DE's. AGCO outperforms DE with an ROI of 22.62% (DE: 14.17%), reflecting a more efficient and profitable use of capital. AGCO commands an 8.11% share in the agricultural equipment market, ranking fourth. In September 2023, AGCO announced a joint venture with Trimble, enhancing its technology offering and increasing competition with DE in the PPA segment.

CLAAS (Germany) is a global manufacturing company, primarily focusing on harvesting equipment, such as combine harvesters and forage harvesters. While it competes with DE in this specific product niche, it does not offer the same breadth of solutions. Operating globally, CLAAS has a stronger emphasis on the European market, while DE is a global leader with a broader reach. As a private company less data is available for CLAAS. CLAAS generated approx. 10.00% of DE's total revenues, with slower growth at 2.66% YoY vs. DE's 26.89%. DE outperforms CLAAS across all performance indicators analyzed. CLAAS holds the smallest market share among considered agricultural competitors, at 3.42% in 2022.

(iii) Heavy Equipment Competitors

Heavy Equipment competitors oppose DE's CF segment. Here, the two largest competitors are considered most relevant: **Caterpillar Inc.** (CAT) and **Komatsu Ltd.** (Komatsu).

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A comparison of KPIs is shown in **figure 15**. DE owns 8.37% of the global heavy equipment market in 2022 (CF sales: 12,534 USDm). Here, the HHI amounts to 949.35 indicating even lower concentration compared to agricultural equipment market.

CAT (United States) is the world's largest manufacturer of construction equipment operating in the segments: construction industries, resource industries, and energy & transportation. While CAT and DE compete and have product overlap in the construction equipment, particularly heavy trucks, wheel loaders, and excavators, they have different focuses and strengths. DE primarily targets the agricultural sector, whereas CAT specializes in heavy construction. CAT's EV exceeds DEs by 34.89% with an EV of 142,584 USDm in 2022. Their total sales are comparable standing at 59,427 USDm (DE: 52,577 USDm). Yet, DE achieved a 10.62% higher EBITDA-margin in FY 22. In the competitive construction segment, CAT outperformed DE, generating twice of DEs revenue thereby claiming a leading market share of 16.90%. Despite somewhat similar financials and competition in one business line, the comparability is only considered medium due to their distinct primary markets and focus areas.

Komatsu (Japan) operates in three segments: Construction, Mining and Utility Equipment; Retail Finance; and Industrial Machinery. While Komatsu has a broader focus that includes mining and military, its primary competition with DE lies in the construction segment. Geographically, their focuses differ – Komatsu generates only 26.00% of its revenues in the US compared to DE's 53.71%. In terms of total revenues and EV, Komatsu lags DE, accounting for 49.85% and 31.91% of DE's value respectively. Both companies achieved substantial YoY sales growth of over 26.00% in 2022. Yet, Komatsu holds a greater, second-largest market share at 14.70%, with approx. 9,460 USDm more in revenue in the construction segment.

With CAT and Komatsu standing as the two dominant players in the industry, jointly commanding a substantial 31.60% of the global market share, the remainder of the market is notably fragmented as visible in **figure 16**.

b) Performance Determinants

Hereafter, we evaluate factors crucial to DE's performance. This includes the unique competitive advantages, which are often tied to the risk of dependence on their preservation, thereby resulting in key risks. Refer to **figure 17** for a SWOT analysis on DE. The key risks affecting DE's business are summarized in **figure 18** ranking each risk according to the associated risk potential and materiality for DE.

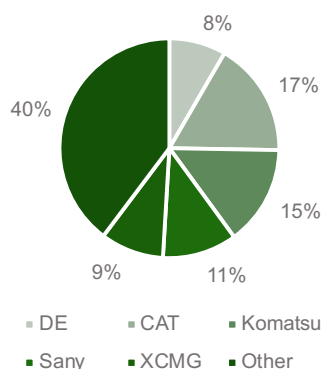


Figure 16: Heavy Equipment Competitors Distribution of Market Shares. Source: Company Data, 2023.

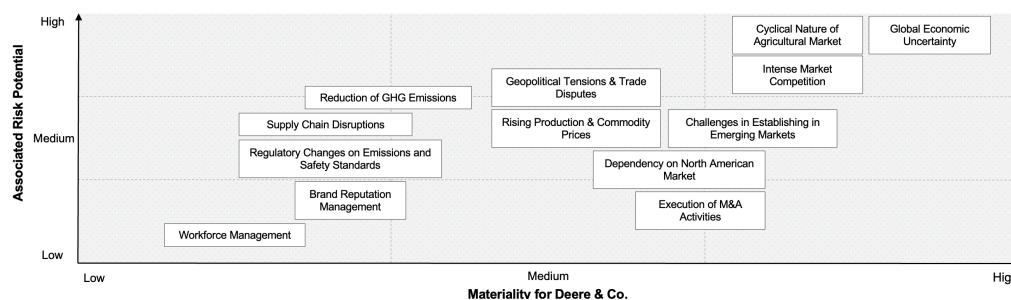


Figure 18: Key Risk According to their Associated Risk Potential and Materiality. Source: Analyst Analysis.



Figure 17: SWOT-Analysis on Deere & Co. Source: Analyst Analysis.

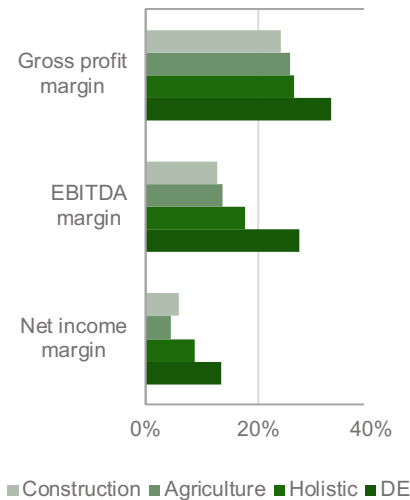


Figure 19: Profitability and Investment Comparison. Source: Company Data, 2023.

(i) Brand Heritage

DE’s brand “John Deere” is one of the strongest in the industry. It has been in business for over 180 years with its name being synonymous with quality and reliability. Customers trust the brand, which helped the company build a loyal customer base. DE has consistently been ranked as one of the most admired companies in the world by Fortune magazine, which is a testament to its strong brand reputation. However, this also entails a great responsibility to preserve the brand and avoid negative associations affecting DE’s future success. This applies to activities such as mergers and acquisitions (M&A), which entail potential to impact the reputation, as well as sensitive issues with a high public profile such as employee rights and climate change.

(ii) Operational Excellence

On the revenue front, DE benefits greatly from its robust dealer network. DE boasts a network of over 1,600 independent dealerships in North America (more than 3,800 globally). These dealerships not only grant customers access to DE’s products and services but also provide support and equipment maintenance. The dealer network plays a pivotal role in DE’s business model, enabling the establishment of a strong local market presence and fostering long-lasting customer relationships. DE’s global presence is a notable competitive advantage, too. Operating in over 160 countries, DE maintains manufacturing facilities and distribution centers across various regions, mitigating risks associated with market dependence or supplier reliance.

From a cost standpoint, DE benefits from its vertically integrated business model. With strong manufacturing capabilities and a well-organized global supply chain, DE exercises effective cost control and upholds high-quality standards. Utilizing its extensive dealer network, DE efficiently distributes products, enabling competitive pricing and sustained profitability in challenging conditions. Additionally, DE’s size, industry-leading position, and substantial sales volume enhance its negotiating power with suppliers, contributing to higher margins.

With a gross profit margin of 32.79% (FY 22), DE outperforms its competitors (*medium and high comparability only*) across all three segments by an avg. of 8.26%. The same applies to the net profit margin where DE achieves 13.33% and outperforms respective competitors on avg. by 7.21%. This showcases DE’s superior operational effectiveness when compared to its peers as represented in **figure 19**.

(iii) Innovator

DE has always been at the forefront of technology within the industry. With a 6-year historic avg. of 4.07% of total sales (2,177 USDm in FY 23), the company invests heavily in research and development (R&D), well-knowing that their technology center counts as one of their core competitive advantages. CNHI and Kubota spend similar, yet slightly larger shares of revenues between 4.00% and 6.00% on R&D. However, given their smaller size, their investments are smaller in absolute terms and amount to approx. 940 USDm and 1,400 USDm.

The four main trends in technology affecting DE are the (1) implementation of alternative energy sources; (2) integration of AI to increase machine precision, (3) autonomous machinery to increase productivity; and (4) provision of analysis tools for improved monitoring and evaluation. For all of them, the integration of cutting-edge technology into hardware is crucial. By that, DE and its competitors are developing equipment that harvests a new kind of super-crop: data.

However, the technological landscape is rapidly evolving. DE must keep pace with changes or innovations to remain competitive and stay ahead. Continuing to invest in R&D is crucial to preserve the innovator-role, yet also a major threat if not achieved.

(iv) Additional Revenue Streams

DE has a history of retaining customers well beyond equipment sale. As most competitors, they offer standard after-sales services such as maintenance and parts sales through local dealers. What differentiates DE from most competitors is its ability to offer financing options to customers through its FS division. This simplifies equipment purchases for customers, enabling them access to DE products. Offering competitive financing solutions not only drives sales for DE but also fosters long-term customer loyalty. In FY 23, this supplementary revenue stream amounted to over 3,300 USDm, constituting 5.46% of the company's total sales and revenues.

Most importantly, in 2022, DE announced the target to shift 10.00% of its equipment sales revenues to recurring revenues by 2030. This will fundamentally change the business model, as it brings in the sense of a software-as-a-service (SaaS) business model. As mentioned earlier, all key market trends rely on technology integration. Combining well-known DE hardware with software and subscription models will open new doors to drive revenue growth. Selling or leasing e.g. the “driverless tractor feature” as an add-on in subscription models can result in higher margins – lucrative for DE and an attractive offering for farmers given the increase in efficiency it offers.

Ultimately, DE's ability to make use of “data” and to launch and distribute SaaS-subscription models grounds their success in the upcoming years. It will be decisive in determining whether DE can strengthen and maintain its role as market leader.

(v) Emerging Markets

From a geographic standpoint, emerging markets like India, China, and Brazil arise as promising areas for revenue expansion in the future. These markets, marked by high population and wealth growth, drive substantial demand for agricultural and construction equipment. Currently, DE derives 13.96% of its total revenues from Latin America and 8.49% from Asia, Africa, Australia, New Zealand, and the Middle East (2022), indicating presence in these markets. However, it's notable that DE lacks a dedicated knowledge center or hub in India, China, or Brazil. Establishing a robust dealer network there will require time and networking efforts.

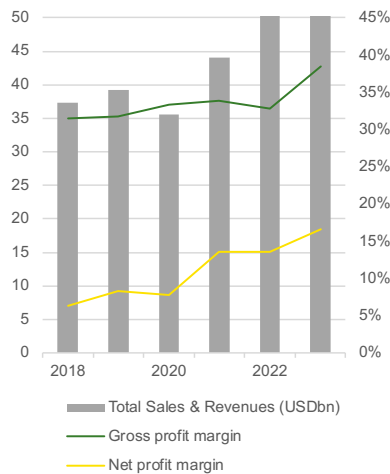


Figure 20: Evolution Total Sales and Revenues, Gross- and Net Profit Margin FY 18-23.

Source: Deere & Co., 2023.

As these emerging markets gain prominence, competition is set to intensify. Asian-based competitors like Kubota and Komatsu, along with the Indian M&M, are well-positioned to leverage their local networks and expertise. This dynamic could challenge DE's position as an industry leader. Seizing growth opportunities in emerging markets requires early market entry and strategic use of DE's global presence. A proactive approach is vital to harness the potential these markets offer and to maintain and expand market share in the face of rising competition.

III) Historic Financial and Non-Financial Performance

This section aims to analyze DE's past financial and non-financial performance.

1) Historic Financial Analysis

a) Income Statement

Analyzing DE's financial performance from FY 18-23, we note a consistent upward trend in total sales (CAGR: 8.59%), see **figure 20**. This was driven by robust growth in equipment operations (CAGR: 8.88%), particularly in PPA. This growth was fueled by increased demand for agricultural equipment, especially in North America and Latin America. Both regions expanded their share of the regional revenue distribution.

YoY growth in equipment operations displayed high volatility, ranging from -10.36% to +27.07%. After modest growth in FY 18-19, revenues experienced a significant decline in FY 20, dropping by over 3,600 USDm due to supply chain disruptions and demand shocks caused by the COVID pandemic, visible in **figure 20**. By FY 21, DE rebounded and exceeded pre-pandemic levels, achieving record-breaking results in FY 22 and FY 23 with total sales and revenues reaching 61,251 USDm (FY 23). The YoY growth per segment is represented in **figure 21**.

DE's cost of goods sold (COGS) exhibited a slower CAGR of 6.69% compared to sales resulting in an increase in the gross profit margin, rising from 29.03% in FY 18 to 38.43% in FY 23. DE's gross profit margin is industry-typical, ranking competitively against CNHI (28.68%) and Kubota (25.55%).

In 2020, DE introduced the "smart-industrial operating model," emphasizing segment targets, economic value, and sustainability. Notably, the implementation of recurring revenues is expected to contribute to DE's cost-effectiveness.

Bottom-line improvements include a doubled net profit margin from 6.34% in FY 18 to 16.60% in FY 23, attributed to streamlined overhead, COVID-driven workforce adjustments, digitalization, and low-cost recurring revenues integration.

b) Balance Sheet and Cash Flows

Over the last six years, DE has demonstrated a positive evolution in its balance sheet, marked by a substantial increase in total assets, growing by 33,979 USDm at a CAGR of

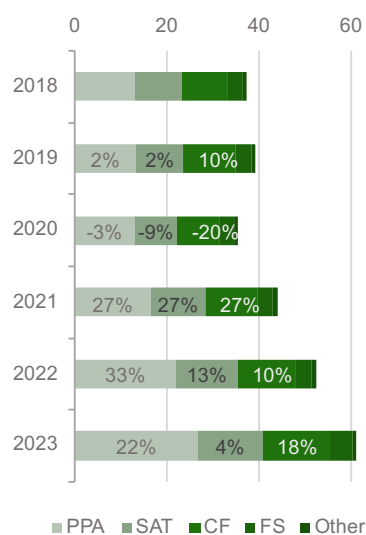


Figure 21: Revenue and Respective Growth Rate per Segment FY 18-23.

Source: Deere & Co., 2023.

6.81% from FY 18-23. This growth is attributed to ongoing investments in manufacturing plants, equipment, and strategic initiatives.

During the period, DE made 47 acquisitions with a combined deal value of approx. 19,400 USDm, with a significant portion occurring and electrification, and entry into new markets. It is an essential part of DEs growth strategy ensuring DE competitive advantages.

The debt-to-equity (D/E) ratio peaked in FY 19 at 4.0 but has decreased to below pre-COVID levels, currently standing at 2.65 (see **figure 22**). During the pandemic, DE adjusted its capital structure to proactively mitigate risk and ensure solvency. DE historically maintained strong liquidity with high current and quick ratios above 6.00 along with a cash ratio above 0.50, with cash and cash equivalents representing about 10.00% of total sales and revenues. During the pandemic, DE adopted a precautionary approach, decreasing their leverage and increasing cash and cash equivalents to above 19.00% of total sales and revenues. After the pandemic, DE has decreased its cash to pre-pandemic levels and is now relevering its business.

Aligned with the overall analysis, DE's cash conversion cycle (CCC) displayed a positive trend. Despite a peak of around 27 days in FY 19, by FY 22, DE significantly improved its CCC, with a three-year avg. of approx. -16 (FY 21-23). This indicates strong progress in cash management, emphasizing DE's efficient working capital management. DE's ability to collect receivables in approx. 43 days while comfortably waiting around 143 days for the payment of payables results in a negative CCC, signifying efficient working capital management. Also, as DE provides financing solutions to customers, it allows DE to control credit terms and ensure quicker payments which results in a faster cash conversion. The CCC implies that DE can collect cash from customers before having to pay their own suppliers. A benchmarking with key peers is shown in **figure 23**, where DE clearly outperforms its competitors.

Despite the solid growth observed in both the income statement and the balance sheet, DE's unlevered free cash flow to firm (FCFF) averages at -1.16% of total sales and revenues, showcasing high volatility in YoY growth, visible in **figure 24**, primarily attributed to changes in financing receivables. As these are linked to the financing offerings provided to DE's dealers through the John Deere Capital Corporation for products within equipment operations, an increase in FY 20 due to higher financing needs during COVID and a stall in FY 22 due to increased interest expenses appear as a logical explanation.

Capital expenditures (CAPEX) stayed relatively constant at around 1,150 USDm in FY 19 and FY 22 (2.50% of total sales on avg.). Driven by higher uncertainty during COVID, CAPEX was reduced to slightly lower levels during FY 20-21.

c) Stock Performance and Dividends

Over the past six years, DE's stock has demonstrated strong growth of 182.48%. Despite price fluctuations from 110 USD to 170 USD between Oct-2018 and Mar-2020, it rose to

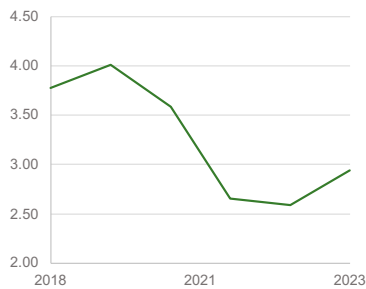


Figure 22: Evolution of D/E Ratio FY 18-23.

Source: Deere & Co., 2023.

	DE	-19
Holistic	CNHI	397
	Kubota	187
	M&M	-13
Agricu.	ACGO	131
	Cat	181
Constr.	Komatsu	276
	Volvo	114

Figure 23: Comparison of Cash Conversion Cycle. Source: Company Data, 2023.

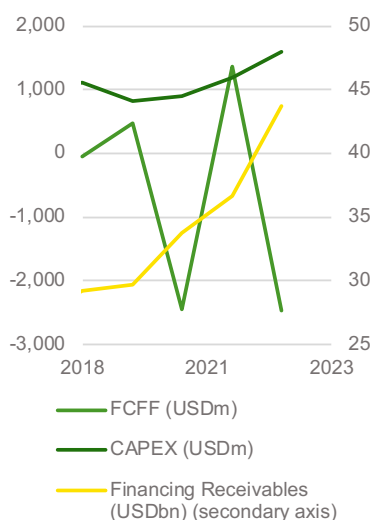


Figure 24: Evolution of FCFF and CAPEX FY 18-23.

Source: Deere & Co., 2023.

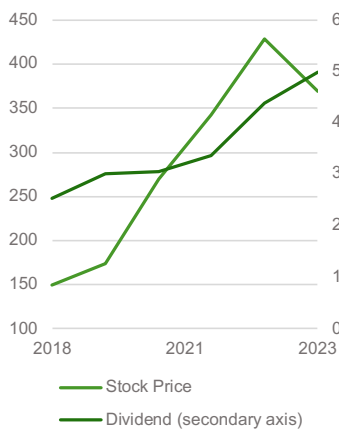


Figure 25: Stock Price and Dividend Growth (Yearly)

FY 18-23.

Source: Deere & Co., 2023.

424 USD in Apr-2022. Since then, the stock price has displayed dynamic movements, with a 52-week high and low of 446.33 USD to 345.98 USD. See **figure 25**.

DE's dividend yield stands at 1.41% which is favorable compared to sector, country, and global averages (0.44, 0.25, and 0.37, respectively). However, direct competitors like CNHI and Kubota exhibit higher dividend yields (3.42% and 2.14%, respectively).

Over the past six years, DE's payout ratio averaged at 24.61% of mid-cycle earnings. In FY 23, it decreases to 14.04% to keep the dividend increase moderate despite the substantial increase in EPS (+49.30% compared to FY 22). This conservative payout policy positions DE with financial capacity for strategic investments. In contrast, CNHI and Kubota have payout ratios at 22.92% and 14.60% (2023). DE's annual dividend for FY 23 is 5.00 USD per share, marking more than three consecutive years of increases, showcasing financial stability and the ability to sustain consistent future dividend payments.

2) ESG Analysis

As explained in **section II)2)b)**, ESG-performance is a crucial driver for both industries in the upcoming years, being asked by a diverse set of internal and external stakeholders. **Figure 26** represents a comparison of the overall ESG performance of DE and relevant competitors. DE encompasses a low ESG risk rating of 19.9, outperforming the mean of its competitors standing at 24.18 (Sustainalytics, 2023).

a) Environnement

(i) Production process

From a production standpoint, DE is highly committed to reducing its environmental impact. With ambitious goals for FY 30, the company aims to cut operational CO₂e (CO₂ and equivalent GHGs) emissions by 50.00% and to reduce upstream and downstream CO₂e emissions by 30.00%. However, many competitors state similar goals in reducing GHG making DE's objective less special, yet not less ambitious – e.g. AGCO plans to run their production on 60.00% renewable energy by FY 26.

Still, DE's efforts to lower GHG emissions in their production are not just a matter of environmental stewardship but also have direct financial implications. In October 2022, DE amended its credit agreements linking interest expenses to environmental impact. This implies that failing to meet emissions targets result in a penalty rate, while exceeding these targets leads to favorable adjustments. Alongside these financial incentives, DE is aims to reduce waste intensity by 15.00% and decreasing freshwater consumption intensity by 10.00% at water-stressed manufacturing locations.

(ii) Products

On the product front, DE is working to limit the environmental impact of its products. Key to this strategy is the exploration and implementation of alternative propulsion systems, including battery-electric and alternative fuels, to substitute traditional diesel-powered engines. By FY 26, DE plans to introduce over 20 battery-electric or hybrid-electric models

Agricultural Holistic Construction	DE	19.9
	CNHI	24.6
	Kubota	20.7
	M&M	24.9
	ACGO	17.6
	Cat	36.3
	Volvo	25.7
	Komatsu	23.7
Categories for ESG Risk Rating		
	Negligible	0-10
	Low	10-20
	Medium	20-30
	High	30-40
	Severe	40+

Figure 26: Comparison of ESG Risk Rating. Source: Sustainalytics., 2023.

in the CF segment. Additionally, a range of electric options is being developed for turf-care and compact-tractor products.

DE is focusing on enhancing agricultural efficiency, with goals to improve nitrogen use efficiency by 20.00%, increase crop protection efficiency by 20.00%, and reduce customer CO2e emissions by 15.00% by 2030. Also, DE is dedicated to increasing product circularity, aiming for 95.00% recyclable product content, ensuring 65.00% of product content is sustainable material, and aiming for a 50.00% increase in remanufacturing revenue by FY 30.

b) Social

DE demonstrates strong commitment to social responsibility through various initiatives. DE significantly invests in charitable contributions, focusing on global food insecurity, agricultural education, and support for underserved farmers. DE supports initiatives to assist black farmers and programs for native American youth in agriculture and invests in funds aiding minority-owned businesses. Recognized for responsible citizenship, DE contributes to food banks and works on hunger relief. Their precision agriculture technology helps meet growing food demands efficiently. Employee involvement in philanthropy is encouraged, amplifying the company's social impact.

c) Governance

DE exhibits strong governance practices integral to its ESG profile collectively highlighting a solid governance structure. Their supplier diversity strategy, initiated in FY 21, prioritizes economic development through collaborations with diverse suppliers. DE's compliance framework, highlighted by continuous training, fosters an ethical corporate culture. DE's human rights commitment is reflected in detailed conduct codes, ensuring fair practices across their value chain. Furthermore, responsible political engagement through the John Deere Political Action Committee (JDPAC) showcases ethical political advocacy, adhering to strict legal standards. However, from a management perspective, holding both CEO and Chairman roles, May's dual position raises concerns of power concentration and reduced oversight. For better governance, separating these roles is generally preferred.

IV) Forecasted Financial Statements

Below, the rationale of the forecasted financial statements is outlined.

1) General Forecasting Approach

The forecasting methodology entails projecting DE's income statement and balance sheet up to FY 40. Each line item in the forecasted statements is underpinned by specific assumptions. We've applied varying levels of prioritization, directing our efforts based on the item's relevance for valuation purposes. Beyond revenues, we categorized all items towards their impact on the valuation:

- a) **Revenue Model (Equipment Operations):** Our main priority has been on meticulously forecasting DE's revenue derived from equipment operations, recognizing it as the primary driver of DE's financial statements.
- b) **Items with significant impact on valuation:** Each items' forecast is subject to specific assumptions which will be explained below.
- c) **Items with insignificant impact on the valuation:** When appropriate, we projected these items by utilizing an historic ratio to sales or other logically connected items. Alternatively, we used an avg. historic growth rate. Refer to the valuation model for further explanation.

Subsequently, we use the results from the income statement and the balance sheet, along with assumptions regarding the use of cash, to construct the cash flow statement. This methodology ensures the coherence of our financial statements, providing an accurate reflection of DE's financials throughout the forecasting period.

We applied a forecasting period of 17 years with FY 24 as the first and FY 40 as the last forecasted years, given that the growth rate of unlevered FCFF begins to stabilize after 15 forecasting years. The forecasting period is divided into the "detailed planning period" (up to and incl. FY 30), where we utilize detailed market forecasts and apply distinct assumptions, and the "approximation phase" (up to and incl. FY 40), which adopts a more conservative approach and aligns expectations with the long-term growth, acknowledging rising uncertainty over temporal distance.

2) Forecasted Income Statement

Following a record net income of 10,166 USDm, a sharp cyclical decline of 2,839 USDm is anticipated in FY 24. Recovery to FY 23 levels is expected by FY 28, with gradual growth reaching 16,468 USDm in FY 40. Refer to **appendix VIII)3)c)** for visual representation.

a) Operating Sales and Revenues (Equipment Operations)

As mentioned, we place most significance on projecting equipment operations revenues as they historically accounted for approx. 90.00% of total sales and revenues. We employ a dual short- and long-term approach for a confident and resilient forecast, with a gradual shift from 65.00% short-term weight in FY 24 to 0.00% from FY 31 onwards (**see appendix VIII)3)a)**). While the long-term model indicates broader trends and fundamentals shaping the segments future, the short-term model allows us to incorporate sensitivity to immediate fluctuations. The drivers and coefficients of each model are visible in **figure 27** and **28**.

(i) Long-Term Model

The long-term model aims to identify historic growth patterns for each segment's drivers. A linear regression is employed to quantify the strength of the linear relationship between the driver and the segment's growth and assign a coefficient to each driver.

We calculated the sum of squared errors (SSE) between the drivers' growth and the segment's revenue growth and set the coefficients with the objective of minimizing SSE, explicitly avoiding the constraint of summing all coefficients to 1. Making coefficients sum

PPA	Weight
GDP Growth	244.82%
S&P Agriculture Index (1 Year Lag)	30.90%
US Farm Financial Data	34.51%
SAT	
GDP Growth	236.57%
S&P Agriculture Index (1 Year Lag)	9.76%
US Farm Financial Data	32.96%
CF	
GDP Growth	262.49%
S&P 500 Construction, Machinery & Heavy Trucks (1 Year Lag)	35.36%
Global primary forest loss (Mha) (2 Year Lag)	46.21%

Figure 27: Weights Long-Term Model. Source: Analyst Analysis.

PPA	Weight
Cash Expenses on Machinery, Tractors, and Self-Propelled	100.00%
SAT	
Cash Expenses on Machinery, Tractors, and Self-Propelled	65.00%
Turf Equipment Market Growth	35.00%
CF	
Global primary forest loss (Mha)(2 Year Lag)	75.00%
Global Construction Equipment Market Growth	25.00%

Figure 28: Weights Short-Term Model. Source: Analyst Analysis.

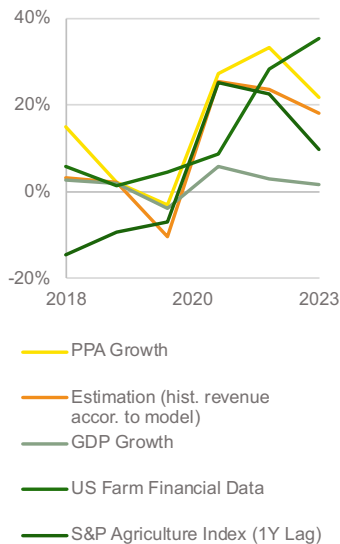


Figure 29: Evolution of PPA Revenue and Key Drivers. Source: See Text.

to 1 in a linear regression is impractical as they represent the individual impact of each variable, and their scale is determined by units of measurement, making normalization arbitrary and irrelevant to their interpretation. See **appendix VIII)3)b)** for regression statistics. Ultimately, we refer to sophisticated, source-based forecasts of each driver which we then multiply with the respective coefficient to arrive at the long-term model indicated growth rate for each segment.

We accept somewhat limited statistical significance in the regressions but remain steadfast towards the robustness of the approach, firmly believing that no driver will exhibit statistical significance when viewed from mathematical and causal perspective.

(ii) Short-Term Model

The short-term model captures drivers particularly reflecting changes in YoY-growth in the short-term which may be offset in the long-term view. As higher accuracy can often only be reached with a shorter time span, implementing explicit, source-based predictions of the near future help us to increase the forecasts' reliability.

(iii) PPA and SAT Revenue

Given that PPA revenue has been reported separately only since FY 18 and was previously consolidated with SAT, both long-term models share the same causal interpretations and similar datasets, only resulting in slightly differing coefficients due to varying data during FY 18-23.

In the long-term model, we observe that revenue-weighted GDP growth (IMF, 2023), the S&P GSCI Agriculture Index (Bloomberg Database, 2023), and US Farm Net Cash Income (USDA, 2023) exhibit growth patterns similar the historic growth of the PPA and SAT visible in **figure 29** and **30**.

The IMF provides sound projections of the overall economic health represented by the GDP. While GDP is projected to exhibit slower growth of 1.59% in FY 24, it is expected to stabilize at levels around and beyond 2.20% from FY 26 on.

The S&P GSCI Agriculture Index showed cyclical fluctuations in historic years, matching with PPA and SAT revenues. Since there is no forecast available, we use the 10-year historic average of the YoY-percentage change of -0.71% during the forecasting period. As this represents the long-term mean of cyclical fluctuations in the back look, the same can be assumed for the outlook, too.

As mentioned earlier, farm income stands out as a critical determinant shaping the agricultural equipment market. It mirrors the purchasing power of the primary customers in the PPA and SAT segment. Historically exhibiting cyclical patterns, inflation-adjusted US net farm cash income is projected to decline by 26.52% in 2023 (ibid.), influencing PPA and SAT revenues with a one-year lag. According to USDA, the significant downturn is influenced by reduced government payments and rising production costs until price normalization and recovery is achieved. The USDA foresees slight recovery in 2027, with modest cyclical up-and-down movements in YoY-growth until 2032. Beyond, we continue the forecast with a 7-year avg. until 2040.

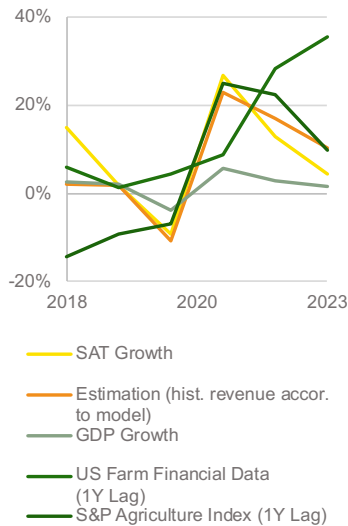


Figure 30: Evolution of SAT Revenue and Key Drivers.

Source: See Text.

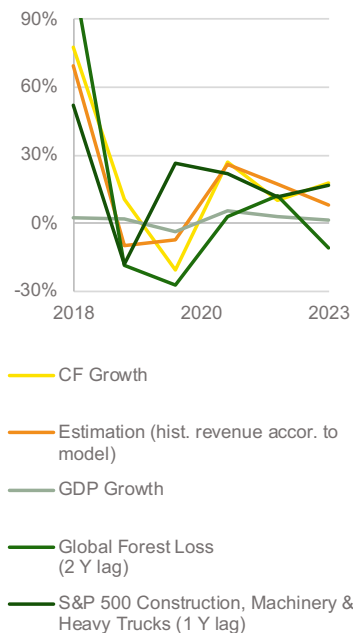


Figure 31: Evolution of CF Revenue and Key Drivers.

Source: See Text.

Multiplying each driver's YoY growth by its respective coefficient yields a moderate decline of -4.54% in FY 24, followed by immediately and ongoing recovery exceeding 4.00%. YoY-growth declines towards 3.00% from FY 33 on and stabilizes at 2.58% from FY 37 onwards.

In the short-term models for both PPA and SAT, we incorporate cash expenses on machinery, tractors, and self-propelled machines as a percentage of the previous year's US farm net cash income (USDA, 2023). This allows us to anchor our projections even tighter to the expenditures of US farmers on agricultural equipment — essentially the inverse of DE's revenues. As these cash expenses are available only in retrospect, we use a 5-year historic avg. of the ratio of expenses to the previous year's US farm net cash income to estimate these values. By including this in the short-term model, we aim to put additional emphasis on the cyclical drop expected in FY 24.

For the SAT short-term model, we apply the PPA short-term model as explained above but with a reduced weight of 65.00%, accounting for SAT's farm-related revenue streams. To consider the non-farm related revenue, especially turf equipment, we include the turf equipment market CAGR of 4.50% with a weight of 35.00% (Persistence Market Research, 2023). This reduces SAT's exposure to the agricultural equipment and its cyclical downturn, resulting in a more moderate decline of 15.66% in YoY growth in FY 24 (vs. -18.82% for PPA), yet followed by a slower recovery until FY 32 compared to PPA. After the short-term models only forecast until 2030, both revenue streams grow at similar rates in the period thereafter, reaching 3.76% in FY 33 and gradually declining towards a constant level of 2.61% from FY 37 onward.

(iv) CF Revenue

For the CF long-term model, GDP growth expectations remain the primary driver. Given that the CF revenue stream comprises roadbuilding, construction, and forestry, we aim to capture the dynamics of all three in our long-term projections.

Regarding roadbuilding and construction, the S&P Construction Machinery & Heavy Trucks Index growth with a one-year lag shows similar growth patterns as the CF segment. The index effectively reflects trends in the construction machinery and heavy trucks industry. Utilizing the 10-year historic avg. of the YoY percentage change of 11.42%, we assume this as the long-term mean of cyclical fluctuations.

Additionally, we consider 2-year lagging global deforestation as a measure for activity in the forestry pillar. Global deforestation is expected to be zero from 2030 on (Global Forest Watch, 2023). We assume that with zero deforestation, DE's forestry-related sales will show a steady decline as there will be less demand for such equipment. Yet, we remain conservative regarding the execution of global sustainability and deforestation initiatives and set 2035 as the zero-year. Anticipating that forestry activity will not decrease to zero within the forecasting period, we apply a logarithmic decline logic with a constant YoY-change of -16.23%.

Overall, the CF long-term model implies a YoY-growth of 3.72% in FY 24, rising and staying beyond 5.00% until FY 29, and gradually declining towards 2.44% in FY 37, where it remains steady.

In the CF short-term model, we include projections of the global construction equipment market growth at a weight of 75.00%. According to Statista (2023), the market is projected to grow from 157,060 USDm in 2022 up to 234,600 USDm in 2030 exhibiting 49.37% growth over the span of 8 years. Yet, we believe that DE will not be able to hold its market share of 8.37% (2023) in the long-term, given that its primary efforts are in the agricultural segment and the global construction equipment market is already very competitive and granular. Therefore, we incorporated slight deductions in market share of 0.85% in total in FY 24 and FY 25. Lastly, we included the earlier explained deforestation-driver at a weight of 25.00%. Notably, this is not a case of thoughtless double counting. Rather, we want to put more relevance on this driver in the short end than the weighting of the long-term model provides in the early forecasting years as we assume this factor to have significant influence.

Weighting both short- and long-term model yields the most moderate decline in YoY growth of 6.75% in FY 24 for CF compared to all operating segments. However, the CF segment takes longer to recover and only reaches above 3.00% YoY-growth beginning from FY 29 on and peaks in FY 31 at 4.31%. It gradually declines towards 2.44% in FY 37 where it enters a steady state. Refer to **figure 31** for the evolution of the drivers.

Combining all segments, equipment operations revenue is projected to experience a drastic cyclical downturn of 14.81% in FY 24, with no real growth in the following two years. From FY 29 to FY 35, growth trends hover between 3.00% and 4.00%, gradually declining to 2.54% in FY 37, where it remains.

b) Operating Expenses (OPEX)

While we anticipate the operating net profit margin to decrease from 18.62% in FY 23 (38.43% for gross profit margin) to 13.63% in FY 24 (31.80%), we project a faster recovery and increase up to 21.76% in FY 30 (38.25%) followed by moderate growth towards 22.40% (38.97%) in FY 40. The main drivers for this are COGS, R&D, SG&A, and interest expenses with COGS holding the highest weight at approx. 83.85% in the 6-year historical data, characteristic for a manufacturing company.

When estimating **COGS**, we considered the increasing levels of recurring revenue, which DE aims to raise to 10.00% of equipment operations revenue by FY 30 starting in FY 23. Beyond FY 30, we anticipate recurring revenue to grow more conservatively, adding an additional 0.10% to recurring equipment operations revenue each year. Assuming this recurring revenue primarily comes from services and data-driven subscription models, we project COGS relative to non-recurring equipment operations revenue which require relevant amounts of material costs. Recent FY 23 data shows a gross margin increase of 5.76%, compared to a relatively stable avg. of 32.67% from FY 18-22.

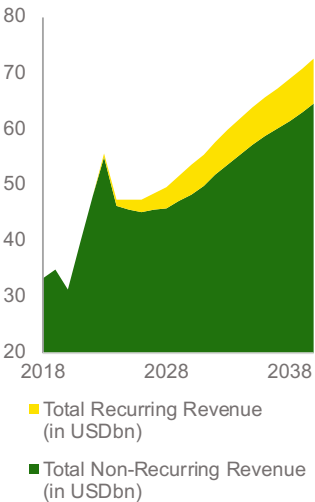


Figure 32: Evolution of Recurring Revenues.

Source: Deere & Co., 2023; Analyst Analysis.

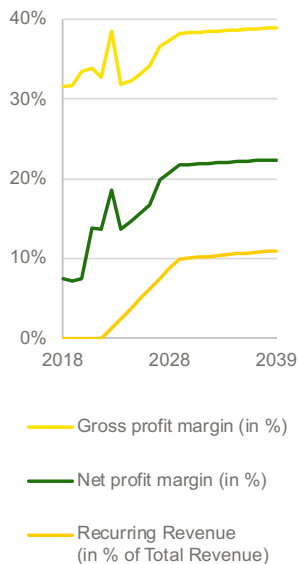


Figure 33: Evolution of Recurring Revenues and Margins.

Source: Deere & Co., 2023; Analyst Analysis.

Acknowledging the anticipated cyclical downturn, we assume the FY 23 margin is a positive outlier, and FY 24 will exhibit a drastic drop to 31.80%, driven by negative industry dynamics and increased production costs not immediately offset by adjusted prices. We expect the gross margin to recover by FY 30, reaching 38.25%, slightly below pre-peak times, and maintain this level relatively stable until FY 40. Slight improvements from FY 30 on only stem from the increase in recurring revenues as visible in **figure 32** and **33**.

In the analysis of **R&D expenses**, we connected DE's reinvestment levels with equipment operations revenue, providing a standardized metric to evaluate the DE's commitment to innovation in the broader context of its overall performance. Over the 5-year historical avg., the R&D expenses-to-sales ratio stood at 4.70% (excl. FY 23). Despite a substantial absolute increase associated with the peak in equipment operations sales in FY 23, the ratio experienced a slight decline to 3.90%. Conversely, with the anticipated drop in revenues in FY 24, we project a rebound in the ratio to 4.50%, equivalent to the 6-year historic avg. (incl. FY 23). This projection aligns with our expectation that R&D expenses will be maintained at a medium-high level, a strategic necessity for DE to uphold its market positions and innovator role. Moreover, considering the capital-intensive nature of upcoming product advancements and innovations, particularly regarding e-mobility and AI usage, sustaining this level of investment becomes crucial for DE's continued success.

When considering **SG&A expenses**, we linked their growth to our expectations for non-recurring equipment operations revenue per FTE and the past level of SG&A per FTE. As a manufacturing company, DE's ability to generate revenue from product sales is dependent on the required workforce, vice-versa impacting the cost base. Historically, non-recurring equipment operations revenue per FTE averaged at 0.52 USDm and SG&A averaged at 0.048 USDm per FTE which we both assume to remain stable throughout the forecasting period. We anticipate a significant decline of approx. 50.00% in SG&A for FY 24 attributed to reduced revenues and the normalization of revenue per FTE, which peaked at 0.63 USDm in FY 23. We believe that the heightened efficiency was an exceptional occurrence driven by the spike in demand and should be viewed as a positive outlier.

As **interest expenses** are reported at a segment level, this facilitates their allocation to the operating expenses of each segment. They follow an analogous interpretation to interest income, signifying the COGS on the financing plans offered and recognized within interest income per segment. It is important to distinguish these expenses from the overall funding strategy. For interest expenses within the three operational segments, we consistently observe a percentage relative to total debt outstanding, which stands at 0.19% for PPA, 0.30% for SAT, 0.15% for CF, and 1.97% for FS. We utilized this metric to project interest payments.

c) Non-Operating Activities

(i) Non-Operating Sales and Revenues

Non-operating sales and revenues are mostly stemming from the non-operating activities accounted in interest income and other income. While their growth is mainly linked to equipment operations revenue, changes in absolute terms during the detailed planning period are moderate due to their smaller amounts. Projected to reach 5,223 USDm in FY 28 (vs. 3,341 USDm in FY 23), they are expected to grow to 5,492 USDm in FY 40, constituting 6.81% of total sales and revenues by then.

Interest income mainly originates from financing plans extended to dealers via the John Deere Capital Corporation. We anticipate that a portion of equipment products sold is financed through these offerings. Thus, we assume a correlation between growth in equipment operations sales and interest income and employed a historical ratio as a forward-looking indicator. Yet, we made use of the very granular data available and linked each segment's interest income to the respective segment sales.

Within **other income**, insurance premiums and fees earned represent a significant portion, primarily tied to extended warranties sold for the company's products. For this and most other items within other income, we anticipate that there exists correlation between equipment operations sales and additional revenue streams such as trademark licensing and services. We do not anticipate further gains from operating lease dispositions, as this was a one-time event in FY 21-22.

(ii) Non-Operating Expenses

In a 6-year retrospective analysis (FY 18-23), non-operating expenses constituted approx. 2.17% of DE's total expenses, averaging at 765 USDm in absolute terms. In the forecast, we see a gradual increase in the portion of non-operating expenses to 2.34% of total expenses by FY 40. However, this increase is not driven by the non-operating expenses themselves; rather, it stems from the incremental decrease in the total cost base attributed to the rise in recurring revenues.

The non-operating net profit margin averages at 51.63% (FY 18-23). Throughout the forecast, the margin increases to an avg. of 58.56%. This is due to non-operating sales being tied to equipment operations sales, resulting in faster growth compared to the non-operating expense items, which are mostly linked to the balance sheet.

The primary non-operating expense items are operating lease disposition losses and impairments, insurance claims and expenses, and pension benefit expenses.

For **operating lease disposition losses and impairments**, we have associated them with the operating lease assets themselves and projected them as a percentage of the balance sheet item, ensuring a direct link to this particular asset category.

In the case of **insurance claims and expenses**, we've tied them to the amount of outstanding product warranties noted on the balance sheet. This association allows us to anticipate the expenses based on the expected warranty claims.

Pension **benefit expenses** are related to the liabilities stemming from pension obligations recognized on the balance sheet, which are ultimately contingent on the number of FTEs. Please see the SG&A forecasting approach for FTE projections.

Non-operating expenses also encompass accounting components, which either offset each other in the consolidated view or are subject to significant complexity and uncertainty, such as foreign exchange losses, and are therefore set to zero.

d) Financial Activities

DE's financial income after taxes has contributed on avg. to 2.29% of the net income attributable to DE over the six-year retrospective analysis. In the projection, we anticipate a decline to an avg. contribution of 1.13% to net income throughout the forecasting period. This decline is driven by the elimination of one-off income effects, which outweigh the exclusion of intercompany expense items in the consolidated view.

As part of the overall funding strategy, DE periodically transfers certain financing receivables into special purpose vehicles within their asset-backed securities program. Those entities then issue retail notes (*short-term securitization borrowings* in BS) on which DE receives interest payments, recognized as **finance income** (accounting for less than 2.00% of total sales on avg.). Consequently, the growth in short-term securitization borrowings, linked to the growth in net debt and EV, is utilized to project finance income. This leads to a gradual increase in the portion of non-operating sales over time, as the EV grows slightly faster than equipment operations sales.

Other financing income arises from gains on previously held equity investments and investment income. Gains on previously held equity investments occurred only in FY 22-23 and are considered a one-off payment and, therefore, projected as zero for the forecast period. Investment income is assumed to remain constant in the future, as the specific investments held by DE are not disclosed.

On the expenditure side of financing activities, interest paid on the company's debt financing represents a significant component. We applied the same methodology used for the operating segments and observe a consistent percentage relative to total debt outstanding of 1.97% for FS and 0.69% for Corporate and employed this metric to forecast interest payments. Interest expenses for the intercompany segment are anticipated to converge to net zero in the consolidated view.

Provision for income taxes have been forecasted using the statutory tax rate of 21.00%. Given the unpredictable nature of tax adjustments and no loss-making years are projected, these have been set to zero. Thus, the statutory tax rate equals the effective tax rate throughout the forecasting period.

3) Forecasted Balance Sheet

Despite DE's total assets peaking in FY 23 at 104,087 USDm (+15.61% to prior year) our forecasting assumptions anticipate a drop of 9.03% to 94,687 USDm for FY 24.

Growing at slower pace compared to the income statement, FY 23 values are only reached by 2032 ultimately standing at 136,822 USDm in FY 40.

a) Invested Capital

Looking at invested capital includes operating and non-operating assets net of the respective liabilities. This has significant influence on the debt, as explained later.

(i) Operating Assets

In a 6-year retrospective analysis, operating assets constituted 87.90% of DE's total assets, serving as the primary driver of the balance sheet. Given no identified reasons for changes in the balance sheet structure, the portion of operating assets remains consistent throughout the forecasting period.

Financing receivables, the most significant operating assets at over 45.00% of the total, are linked to the financing offerings provided by the John Deere Capital Corporation's for products within the equipment operations. We assumed that the receivables are correlated with equipment operations sales and forecasted them as a historic percentage of the non-recurring equipment operations sales (82.00%).

Trade accounts receivables have been forecasted using a similar approach, but with the distinction of using revenues specific to the business lines to forecast PPA, SAT, and CF levels on a standalone basis.

We evaluated DE's **working cash** needs by examining the proportion of working cash to non-recurring equipment operations revenue. DE traditionally maintains around 10.00% of this revenue for operational liquidity, despite higher cash reserves during FY 20 and FY 21 at 22.60% and 20.18%, respectively due to precautional measures following the outbreak of COVID. We employed 10.00% as our forecasting metric as represented in **figure 34**.

Equipment on operating leases includes leased machinery for equipment machinery production, adaptable to demand. We applied the FY 22-23 avg. ratio of non-recurring equipment operations revenue (13.21%) throughout the forecasting period.

DE's **inventories** include finished goods and parts, raw materials and supplies, work-in-process, and a Last-In, First-Out (LIFO) adjustment. The unadjusted inventory level is derived using the avg. days of inventory outstanding of 84 days (FY 18-22) to forecast total FIFO inventory. We applied the historical distribution to the four inventory components to obtain pre-adjustment inventory levels. Maintaining a historically stable ratio of 8.22% of total assets, DE's inventory management is deemed effective, with finished goods and parts comprising the largest portion, averaging around 64.00%.

Property, **Plant & Equipment (PP&E)** is the primary non-current operating asset. We project them to grow as a percentage of non-recurring equipment operations revenue, using the 5-year avg. as the future metric. With a ratio of 15.67%, DE aligns with the industry benchmark of 10.00% to 20.00% common for manufacturing companies. It's noteworthy that DE deducts depreciation, forecasted as a constant 55.20% of unadjusted PP&E throughout the forecasting period.

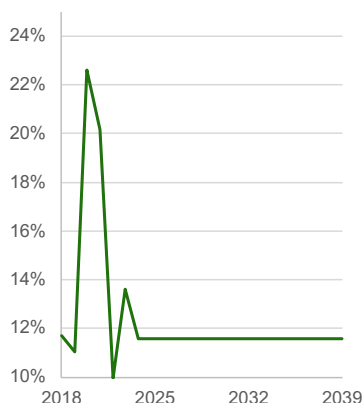


Figure 34: Evolution of Working Cash in % of Total Non-Recurring Equipment Operations Revenue.
Source: Analyst Analysis.

For **deferred income tax assets**, we netted them against the corresponding deferred income tax liabilities. We utilized the net deferred taxes from the prior year and applied the avg. ratio of deferred tax assets to liabilities to project both positions.

(ii) Operating Liabilities

Operating liabilities equaled 17.00% of DE's core assets in the 6-year retrospective view on avg. Yet, we project them to grow to an avg. of 22.23% of core invested capital, with a notable 6.96% increase from FY 23-24, primarily due to a backlog in trade payables. Despite DE's core assets being sensitive to revenue fluctuations and its decline in FY 24, core liabilities are anticipated to grow by 23.10% in FY 24.

DE's avg. payable period hovered steady at 149 days (FY 20-23), compared to lower levels at around 130 days in earlier years resulting in a gradual backlog in supplier payments. This cash management strategy is expected to continue for three more years tied to the projected downturns in net income. From FY 27 on, we apply a payback period of 144 days, thereby reducing the core liabilities to core invested capital ratio. This logic applies to both **accounts payable** and **accrued expenses**. Given their subcomponents, we maintained a consistent distribution.

(iii) Non-operating Assets

In a 6-year retrospective analysis, non-operating assets constituted 12.10% of DE's total assets, serving as a subordinate driver of the balance sheet.

Current non-operating assets entail **marketable securities** and **securitized financing receivables**. DE describes marketable securities as securities held for sale which we assume to remain constant in present value terms. This means that after DE discounts these assets at the "applicable benchmark yield curve plus market credit spread," we projected a growth rate of 3.60% based on the 10-year US yield, along with an additional 0.75% to account for the current market credit spread for DE. Regarding the financing receivables used in the ABS-program, we've noted that DE utilizes approx. 15.41% of its financing receivables for this program which we assumed to remain constant throughout the forecasting period.

Accounting for around 5.00% of totals assets and subordinate impact on the valuation result, the non-current portion of non-operating assets was mostly forecasted to grow in proportion to revenue, except for retirement benefits, linked to the number of FTEs.

(iv) Non-operating Liabilities

Non-operating liabilities equaled 64.83% of DE's non-operating assets in the 6-year retrospective view on avg. with a gradual decrease from 87.43% in FY 19 to 39.06% in FY 23. The forecasting foresees a stable level at around 45.00%. Like the operating section, non-operating liabilities don't decline with revenues yet show small positive changes in YoY-growth, linked to the projection of the avg. payable period. The non-operating portion is less affected by the backlog in payables due to the smaller share of account payable to total non-operating liabilities.

Retirement **benefits** were projected based on the number of FTEs, as explained earlier. Redeemable noncontrolling interest arises from a call option to purchase the remaining ownership in Kreisel by FY 27. It is forecasted to remain at its FY 23 value of 97 USDm until FY 27 and cease to exist thereafter.

b) Financial Liabilities

Financial liabilities are categorized into four segments: short- and long-term borrowings, dividends payable, and accrued interests. Borrowings constitute the most significant portion, with long-term borrowings holding the highest share.

Historic data reveals that long-term borrowings consistently accounted for just under 2/3 of the total debt, except in FY 20-21 when management increased cash reserves to reduce risk. Based on this pattern, we assume that long-term debt will persistently represent 2/3 of the total debt. Vice-versa, short-term borrowings averaged just under 1/3 of total debt and are expected to hold this proportion in the future. Approx. 1.00% of outstanding debt is allocated to accounts payable and accrued expenses.

The management's strategy of deleveraging in FY 20-21 is evident in the development of the D/E ratio. As the uncertainties of the pandemic are left behind, DE's management intends to re-leverage the company to pre-COVID levels. We, therefore, assume the capital structure to change until it reaches the aimed pre-COVID level where it remains constant from then on. More detailed, we anticipate a slight decline in the D/E ratio in FY 24 due to the cyclical downturn, followed by an increase between 11.00% and 13.00% in the next three years. The ratio reaches the target of 3.89 in FY 27, remaining constant thereafter, aligning with the avg. D/E ratio of FY 18-19 (3.89; calculated in book values); see **figure 35**. With the debt structure clarified we employed the following equation together with the target D/E ratio to arrive at the absolute values of total debt:

$$\text{Total Funds Invested} + \text{Excess Cash} = \text{Debt} + \text{Equity}.$$

4) Cash Flow Statement

Based on the above projections, DE's unlevered FCFF averages approx. 17.00% of total sales and revenues throughout the forecasting period. Notably, FY 24 shows a significant increase compared to FY 23, arriving at a FCFF of 19,460 USDm as represented in **figure 36**. This is attributed to deductions in revenue-related assets showcasing the change from record-high in FY 23 to the drastic cyclical downturn in FY 24.

The YoY-growth in core FCFF stabilizes from FY 33 onwards, gradually decreasing from 6.73% to 2.90% in FY 40 thereafter. Utilizing core FCFF and the NOPLAT to compute the reinvestment rate which implies a stable growth rate of 2.20% from FY 28 on, which was subsequently applied as the terminal value (TV) growth rate.

CAPEX has not been projected separately. While they remain important for maintaining physical assets, as explained e.g. in the PP&E projections, we consider R&D expenses more critical in driving innovation and DE's performance.

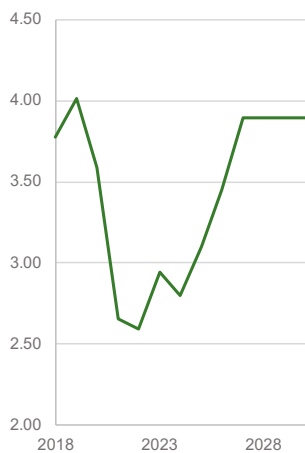


Figure 35: Evolution of D/E Ratio.

Source: Deere & Co., 2023;

Analyst Analysis.

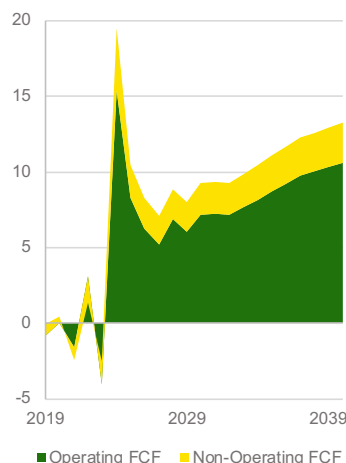


Figure 36: Evolution of Operating and Non-Operating FCF.

Source: Deere & Co., 2023; Analyst

Analysis.

V)Valuation

This chapter presents the results of the valuation of DE as of December 31st, 2024. We applied the valuation methodologies according to Koller & McKinsey & Company Inc. (2020) and Berk & DeMarzo (2023.)

1) Cost of Capital

rf	4.51%
MRP	4.35%
Tax Rate	21.00%
Equity Beta	1.024
Re	8.96%
Rd	5.60%
ru (changing; until FY27)	7.69%
ru (constant; from FY27 on)	7.68%
D/E ratio from FY27 on	79.57%
D/EV ratio from FY27 on	389.36%
TV Growth Rate	2.22%

Figure 37: Cost of Capital Overview.
Source: Deere & Co., 2023; Analyst Analysis.

The computation of DE's cost of capital comprises two essential components: Cost of debt (Rd) and cost of equity (Re). To ensure the robustness of our calculations, we employed diverse approaches to derive results. Refer to **section V)5)a)** for a comprehensive sensitivity analysis. Given that both parameters partially rely on the CAPM, we utilized a risk-free rate proxy. This proxy was derived from DE's long-term inflation exposure, weighted by geographical revenue origin, and the US long-term inflation expectation, resulting in a risk-free rate proxy of 4.51%. To emulate a market portfolio in accordance with CAPM assumptions, we employed the MSCI World Index as a comparable benchmark. To estimate and avg. investors forward looking returns, we utilized the avg. annual return of 8.85% the index yielded in the past 40 years, leading to a market risk premium (MRP) of 4.35%. See **figure 37** for an overview of the cost of capital components.

a) Cost of Debt

As mentioned, we employed different methods to compute DE's Rd; see **figure 38**. Averaging all four approaches leaves us with Rd at 5.60%:

(i) Cost of Borrowings: We utilized the weighted YTM of DE's debt outstanding, publicly traded long-term issued bonds and the outstanding long-term loans, which account for a combined 60.03% of the total debt in FY 23 and assumed to be 63.47% of total debt in the forecasted period. Ultimately, we adjusted for default by adding 0.07% which is the product of default probability of 60.00% (Bloomberg Database, 2023) and the loss given default of 0.11% (ibid.). This yields an Rd of 5.55%.

(ii) Credit Spread Comparable Companies: Finally, we took the 10-year credit yield curve for A+ rated US industrial companies which indicates an Rd of 5.17%.

(iii) Corporate Default Swap (CDS) Implied Spread: Furthermore, we looked at DE's CDS spread of 0.75%, which indicates the risk the market perceives for the company. Adding rf as a baseline indicates an Rd of 5.25%.

(iv) Competitor Debt Beta (CAPM): We applied the CAPM approach, using the avg. debt betas of comparable companies (*only high and medium anticipated comparability*) along with the MRP and rf. We derive a Rd at 6.34%, the highest of all methods. When using the median debt beta, we get a Rd of 5.73% which is closer to the other methods.

Cost of Borrowings	5.55%
Credit Spread Comparable Companies	5.17%
CDS spread implied	5.25%
Competitor Debt Beta	6.43%
Cost of Debt	5.60%

Figure 38: Computed Cost of Debt per Approach.
Source: Deere & Co., 2023; Analyst Analysis.

3Y monthly Beta - MSCI World	1.177
5Y monthly Beta - MSCI World	1.116
10Y monthly Beta - MSCI World	1.071
Average Comparable Beta (relevered)	0.733
DE Equity Beta	1.024
Risk-free Rate	4.51%
Market Risk Premium	4.35%
Cost of Equity	8.96%

Figure 39: Computed Cost of Equity per Approach.

Source: Deere & Co., 2023; Analyst Analysis.

b) Cost of Equity

To calculate the equity beta, we again followed different approaches (see **figure 39**).

- (i) **CAPM and Linear Regression:** Re is determined using the CAPM. We utilized a linear regression of DE stock returns over the returns of the MSCI World Index over different time periods to arrive at DE's expected return based on the perceived systematic risk. This yielded an avg. equity beta of 1.12.
- (ii) **Comparable Betas:** Furthermore, we looked at the equity betas of comparable companies which is 1.24 in avg. After delevering these and relevering according to DE's capital structure we receive a relevered equity beta of 0.73.

Averaging both approaches delivers an equity beta of 1.02. Combining this with a market excess return of 4.35%, we arrived at a Re of 8.96%. Delevering the Re provided an Ru of 7.68% (constant capital structure).

2) Cash Flow Based Valuation (APV)

To determine DE's value based on the projection of future cash-flows, we use the Adjusted-Present-Value (APV) method. As DE's capital structure is projected to remain changing until FY 27, we decided to use the APV over the DCF method.

Starting the APV valuation, we discount the FCFF with the Ru to calculate the unlevered EV as of the valuation date. Due to the changing capital structure between FY 24-27 we used slightly different approaches to determined Ru (**figure 40**) leading to 7.69% as long as the D/E ratio is variable and 7.68% from FY 28 onwards when the D/E ratio remains constant. Besides the yearly discounts, we assume a steady state from FY 38 onwards as we observe steady growth rate of 2.22% implied by the reinvestment rate. This is almost equal to the expected long term GDP growth of 2.21% meaning the company will grow at the same speed as the economy – a reasonable assumption to apply the perpetuity formula. Again, we used the constant Ru of 7.68% in the perpetuity formula.

To get to the levered EV, we determine the value of the tax shield by discounting the interest tax shield of each year. Due to the changing capital structure and, thus, changing risk profile of the tax shield, we used the Rd of 5.60% to discount the tax shield from FY 24 to FY27. This decision stems from the anticipation of an increasing D/E-ratio over these years, in line with the DE's strategic leverage plan. In scenarios where leverage is variable or increasing, the risk and value of interest tax shields are more closely related to the company's debt. Particularly during periods of increasing debt, the risk associated with the tax shields mirrors the default risk of the company's debt. Therefore, applying Rd for discounting aligns with the increasing risk profile during these years of increased leverage to accurately reflect DE's financial dynamics.

From FY 28 onwards, as the D/EV level is projected to remain constant and DE has been able to handle the increased leverage sophisticatedly, the risk of default reduces and makes the tax shield more exposed to the risk of the company's assets. Thus, we used the Ru (constant) to discount the tax shield from FY 28 onwards until perpetuity.

$$R_{u, constant} = \frac{D}{D+E} * R_D + \frac{E}{D+E} * R_E$$

$$R_{u, changing} = \frac{D-TS}{D-TS+E} * R_D + \frac{E}{D-TS+E} * R_E$$

Figure 40: Calculation approaches for Ru.

Source: Koller & McKinsey & Company Inc. (2020)

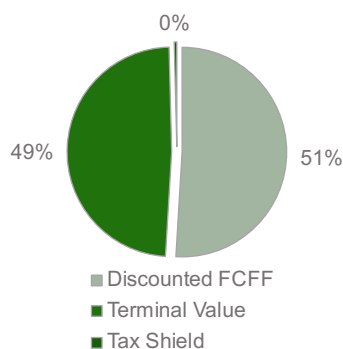


Figure 41: EV composition in APV valuation. Source: Deere & Co., 2023; Analyst Analysis.

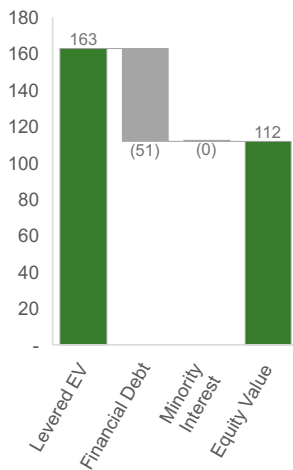


Figure 42: EV-Equity Bridge (APV).

Source: Analyst Analysis.

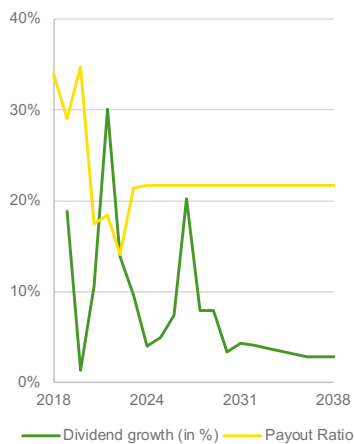


Figure 43: Dividend Forecast, Growth Rate, and Payout Ratio.

Source: Deere & Co., 2023; Analyst Analysis.

Additionally, we value the cash flows from financial debt by discounting them at R_d and the value of residing minority interests and the R_e . In both perpetuity formulas we assumed the same TV growth rate as for the latter cash flows as well as the respective discount rates used for the years before.

Summing up the value of the unlevered EV, tax shield, minority interests, and subtracting net financial debt, yields the equity value at the end of each period. See **figure 42** for the EV-Equity bridge. To determine the equity value as of the valuation date, we included an adjustment factor considering DE's value in FY 25 that is attributable to the period up to the valuation date. This results in a share price of 391.89 USD. As the APV approach entails the most precise projections, it is determined as the overall target price.

3) Dividend Discount Model (DDM)

DE is known for a steady and growing dividend policy with the last set back in the 1980s and 1990s due to the farm crisis. DE plans to use its dividends conservatively to avoid dividend cuts and ease cyclical volatility. We forecasted DE's dividends per share and shares outstanding to arrive at the DDM implied target price (see **figure 43**).

On December 6, 2023, DE announced a quarterly dividend of 1.37 USD payable in February 2024, which we adopt for FY 24. By this, the dividend per share increases in absolute terms sending a positive signal to shareholders despite the projected decline in earnings. In FY 25, we assume a slight dividend increase as EPS see a turnaround.

Following DE's solid dividend policy in uncertain times like the global financial crisis and the COVID pandemic, we assume the YoY dividend growth to move at the same rate as EPS from FY 26 on. This results in an avg. dividend growth rate of 7.43% when looking at the forecasted dividend growth.

As FY 25 is the year following the valuation date, we use an expected dividend of 5.70 USD together with the R_e in the perpetuity formula, see **figure 44**. This yields a target price of 373.43 USD with a 3.97% upside which confirms our findings from the APV approach.

4) Relative Valuation

In our valuation of DE, we employed trading multiples alongside cash-flow-based methods, considering parameters like revenue streams, enterprise value, and geographic presence to select peer companies. A group of 16 competitors was ranked based on two primary criteria, see **figure 12**:

- (i) **Anticipated Comparability:** We categorized the peers as having low, medium, or high comparability. This assessment considered aspects like company size and the similarity of their product portfolios.
- (ii) **Area of Comparability:** We determined whether competitors primarily operate in agricultural equipment, heavy construction, or both industries (holistic).

Av. dividend growth rate	7.43%
Dividend $t+1$	5.70
Cost of Equity	8.96%

Figure 44: DDM – Valuation

Assumptions.

Source: Analyst Analysis.

USD	EV/ EBITDA	EV/ Revenues	P/E
25%-Quart.	93.01	-26.99	43.86
Mean	198.31	64.15	105.60
Median	118.54	41.53	96.32
27%-Quart.	361.55	93.83	137.43

Figure 45: Summary Multiples
Valuation.

Source: Company Data; Analyst
Analysis.

In the subsequent multiples valuation, we excluded companies with "low" anticipated comparability, as they were considered industry peers but not directly comparable to DE. Despite arising limitations, we included peers from all industries to account for DE's dual industry exposure, yet we did not undertake an explicit industry weighting.

The multiples valuation, encompassing EV-to-EBITDA, EV-to-Revenues, and Price-to-Earnings, yielded diverse share prices. Notably, the EV-to-EBITDA ratio suggested the highest mean at 198.31 USD, followed by Price-to-Earnings and EV-to-Revenues with mean values of 100.69 USD and 64.15 USD, respectively; see **figure 45** for an overview. The considerable differences in these multiples can be attributed to the diverse industries within the selected peer group, making direct comparability challenging.

Still, the computed target price for DE, when looking at the mean of each multiple, lies far below the APV valuation. This is primarily driven by the multiples of AGCO and CNHI both trading at very low multiples due to low EVs in anticipation of the projected cyclical downturn in the agribusiness. Utilizing their multiples to value DE yield an EV even below DE's value of net financial debt, thus, resulting in a negative equity value. Still, we decide to not fully exclude both peers, as the expressed loss in value should be accounted when valuing DE given the primary exposure towards the agribusiness why we choose the 75%-Quartile to be more accurate compared to a simple mean.

With a focus on EV-to-EBITDA due to its neutrality to capital structure, the 75%-Quartile implies a share price of 361.55 USD and a upside potential of 0.73%. Notably, the multiples valuations, is – as explained – somewhat limited in its explanatory power and the fact that there never exists a perfectly comparable company. Finally, the multiples valuation lacks precision in terms of the valuation date, as it doesn't fully consider that, as of the valuation date, DE's stock has already suffered significant losses and left the greatest downturn behind.

5) Limitations

a) Sensitivity Analysis

As the valuation methods applied are highly dependent on the underlying assumptions, we run a sensitivity analysis to analyze the impact of key assumptions.

(i) APV Valuation

We first analyzed the effect of R_d and the D/EV ratio on R_u . We choose R_d between 4.51% as lower bound, which corresponds to the risk-free-rate proxy and extrapolated the same interval to 6.69% as upper bound. For the D/EV ratio range, we choose 25.00% as the lower bound and 50.00% as upper bound, as the current D/EV ratio is around 38.12%. The analysis resulted in a range for R_u between 7.24% and 8.30% reflecting acceptable sensitivity with a standard deviation of 2.74 percentage points in absolute terms or 3.57% relative to the mean, which remains close to the value using our assumptions (7.65% vs 7.68%).

Following a similar approach, we analyzed the effect of the equity beta and the E/EV ratio on Ru. For the equity beta range, we used the lower and upper bounds at a 99.00% confidence interval of all levered equity betas included in the computation of DE's equity beta yielding a range from 0.797 to 1.209 with 1.024 being the actual equity beta. The E/EV range follows the same approach as for the D/EV range. By that, we arrive at a range for Ru between 6.94% and 8.36%. With the avg. resulting Ru of 7.66%, slightly deviating from the 7.68% used, Ru shows acceptable sensitivity with a standard deviation of 4.22%. In both cases we can observe a lower sensitivity towards the capital structure than towards Rd or the equity beta, when looking at the standard deviation.

Using the bounds from the previous sensitivity for Ru, we analyzed the effect of Ru and the TV growth rate on the target share price. From the steady state implied TV growth rate of 2.22%, we add and subtract a total of 1.25% in steps of 0.25%, as we do not assume the company to grow much faster or slower than 1.25% compared to the overall economy. We see that as the discount factor decreases and the TV growth rate increases the stock price increases significantly and vice versa. This ultimately results in a share price range between 327.70 USD and 529.74 USD, a standard deviation of 10.65 USD or 11.94%. The share price is more sensitive to the discount rate than to the TV growth rate; see **figure 46**. Lastly, we tested the share price fluctuation around changes in YoY growth of equipment operations revenue (+/- 3.75%) and gross margin (+/- 0.50%) in FY 24 to check the valuations sensitivity towards the assumptions regarding the cyclical downturn. With a price in the range of 369.11-415.28 USD and a standard deviation of only 2.72% the target price shows very low sensitivity to these input factors. Further tables of the analysis and detailed information on Statistics are displayed in the **appendix VIII)5**.

Figure 46: Sensitivity Analysis – APV – Effect of Ru and TV growth rate on Share price. Source: Analyst Analysis.

Ru / TV USD	0.97%	1.72%	2.22%	2.72%	3.47%
6.94%	424.44	448.95	468.45	490.89	529.74
7.24%	400.75	420.23	435.12	451.41	476.16
7.53%	379.19	394.43	405.50	416.76	430.32
7.68%	369.14	382.50	391.89	400.98	409.81
7.81%	360.18	371.92	379.88	387.12	391.98
8.09%	343.31	352.14	357.55	361.54	359.49
8.36%	327.70	334.00	337.22	338.44	330.63

be / g USD	6.93%	7.13%	7.43%	7.73%	7.93%
0.80	546.14	675.63	1048.54	2340.19	13090.73
0.89	396.67	460.82	608.40	895.05	1304.92
1.02	281.23	312.02	373.34	464.65	555.17
1.10	242.76	265.37	308.46	368.26	422.91
1.21	201.44	216.76	244.68	280.86	311.57

Figure 47: Sensitivity Analysis – DDM. Effect of equity beta and dividend growth rate on share price. Source: Analyst Analysis.

(ii) DDM Valuation

We conducted a sensitivity analysis on the DDM by testing the effect of the equity beta and the avg. dividend growth rate on the target share price. For the examined range of equity beta, we applied the same approach as explained above. We tested the avg. dividend growth rate by adding and subtracting a total of +/-0.50% in steps of 0.10%. Due to the growth rate being very close to Ru, we observe extreme sensitivity to both parameters in a range from 201.44 USD to 13,090.73 USD, which are significantly skewed with an avg. of 455.51 USD, while the equity beta results in even higher standard deviation (see **figure 47**). Looking at the sensitivity of next periods dividend, we observe low sensitivity towards the target price retrieved from the DDM. Overall, the DDM shows a much broader range than the APV given the higher sensitivity to its input parameters.

See for **appendix VIII)5** all sensitivity tables.

b) Monte Carlo Simulation

The APV approach includes a broad set of assumptions as tested individually in the sensitivity analysis. To analyze the impact of all input variables, we have conducted a Monte Carlo simulation. We altered Ru (both variations), Rd, Re, the TV growth rate and the TV growth of unlevered FCFF with the same standard deviation as in the sensitivity

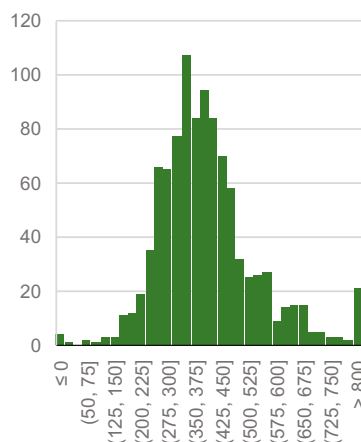


Figure 48: Monte Carlo Simulation – Distribution of Target Price in USD (APV). Source: Analyst Analysis.

Parameters Tested	Mean	Stdv.
ru constant	7.73%	1.17%
ru changing	7.56%	1.17%
rd	5.58%	0.71%
re	8.75%	1.00%
TV growth rate	2.22%	0.83%
FCFF YoY Growth in TV	2.62%	0.83%
FCFF YoY Growth FY24	-888.39%	3.50%

Output Statistics	
Min	-1140.90
Max	2016.31
Mean	396.34
Stdv	174.54
Stdv (in %)	44.04%

Figure 49: Monte Carlo Simulation
– Parameters (APV).

Source: Analyst Analysis.

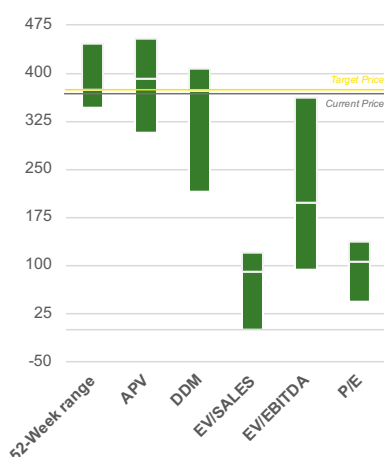


Figure 50: Football Field Chart
w/Target Price in USD per
Valuation Method (Upper
Bound/Mean/Lower Bound).
Source: Analyst Analysis.

USD	APV	DDM	Comps.
Target Price	391.89	373.34	361.55
Price (30/11/23)	364.41	364.41	364.41
Future Dividends	5.53	5.53	5.53
Return (absolute)	33.01	14.46	2.68
Return (relative)	9.06%	3.97%	0.73%
Recommendation	HOLD	HOLD	HOLD

Figure 51: Valuation Summary
and Return Analysis.
Source: Analyst Analysis.

analysis as visible in **figure 49**. Additionally, we included the growth of unlevered FCFF for FY 24 to test the sensitivity towards the cyclical downturn. We receive an avg. share price of 396.34 USD with a standard deviation of 174.54 USD or 44.04%. The distribution of all 1000 simulated scenarios can be found in **figure 48**.

We observe a normal distribution around the mean which is very close to the share price found in the APV. As we see no single events that could alter DE's business significantly, we believe that this simulation includes most possible events. Lacking specific yet somewhat realistic scenarios, we did not proceed with a scenario analysis.

c) Additional Limitations

Beside the assumptions tested in the **section V)5a)**, we like to be transparent and recognize certain assumptions and limitations we identified.

The APV valuation combines operating- and non-operating cash flow to arrive at a consolidated expected FCF, discounting and associating both portions of DE's business with the same risk profile. With more detail regarding each portions risk profile and their distinctions available, one could increase accuracy by using an individual discount factor for each portion. However, even though this would increase the accuracy technically, the impact on the valuation result is likely limited.

As seen in **section V)5a)(i)**, the APV valuation's sensitivity to the computed Ru is evident. It's crucial to note that the D/EV ratio used for Ru calculation was calculated using the book value of debt and the market value of equity due to the unavailability of the market value of DE's debt. This might introduce some limitations.

ESG considerations were incorporated solely through the projection of DE's cash flows as part of their business operations. Yet, the computed cost of capital components only account for risk perception compensation for ESG factors in an indirect way through their different calculation approaches, despite the perceived materiality of ESG for DE. One could consider analyzing the necessity of an additional integration of ESG into cost of capital to provide an even more reflection of the associated risks.

VI) Recommendation

Deducting the target price of 391.89 USD on December 30, 2024, and an expected dividend payment in FY 24 of 5.53 USD (assuming a stable dividend yield) from the current share price of 364.41 USD (as of 30/11/2023) results in an upside potential of 33.01 USD in absolute and 9.06% in relative terms. See **figure 50** and **51** for an overview of all valuation methodologies.

Despite DE publishing record results for FY 23, challenges lie ahead, particularly in FY 24, anticipating the next cyclical downturn in the agricultural economy with a projected -13.55% decrease in total sales and revenues for DE.

While near-term conditions are challenging, tied to basic human needs with rising projected demand, DE remains a solid long-term investment. Considering the valuation date, our recommendation for the stock is **HOLD**.

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VIII) Appendix

1) Financial Statements

a) Income Statement

In million USD	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Total Sales and Revenues (Core)	33,698	35,234	31,586	40,059	48,200	55,784	47,617	47,670	47,812	48,882	49,871	51,954	54,045	55,745	58,020	60,196	62,278	64,242	66,072	67,752	69,475
Revenue	33,351	34,886	31,272	39,737	47,917	55,565	47,334	47,348	47,468	48,513	49,495	51,562	53,637	55,324	57,582	59,742	61,808	63,757	65,573	67,241	68,951
Other Income	347	348	314	322	283	219	283	322	344	369	376	392	408	420	438	454	470	485	498	511	524
Total Operating Expenses	-31,195	-32,690	-29,234	-34,505	-41,626	-45,394	-41,125	-40,648	-40,314	-40,724	-39,961	-41,140	-42,286	-43,579	-45,316	-46,974	-48,557	-50,046	-51,430	-52,697	-53,995
Costs and Expenses Cost of sales	-25,571	-26,792	-23,677	-29,116	-35,338	-37,715	-36,113	-35,629	-35,264	-35,548	-34,934	-35,902	-36,835	-37,951	-39,457	-40,891	-42,258	-43,542	-44,732	-45,818	-46,931
Research and development expenses	-1,658	-1,783	-1,644	-1,587	-1,912	-2,177	-2,149	-2,150	-2,155	-2,203	-2,247	-2,341	-2,435	-2,512	-2,614	-2,712	-2,806	-2,895	-2,977	-3,053	-3,131
Selling, administrative and general expenses	-3,455	-3,551	-3,477	-3,383	-3,863	-4,595	-2,292	-2,293	-2,299	-2,349	-2,397	-2,497	-2,597	-2,679	-2,788	-2,893	-2,993	-3,087	-3,175	-3,256	-3,339
Interest expense	-300	-336	-248	-217	-299	-691	-344	-339	-346	-362	-107	-111	-115	-119	-123	-128	-133	-137	-142	-146	-150
Other Operating Expenses	-211	-228	-188	-202	-214	-217	-227	-239	-250	-263	-276	-289	-303	-318	-334	-350	-367	-385	-404	-424	-445
Operating Income before taxes	2,503	2,544	2,352	5,554	6,574	10,390	6,492	7,022	7,499	8,158	9,910	10,814	11,760	12,166	12,704	13,222	13,721	14,196	14,642	15,055	15,481
Notional Taxes (Core)	-526	-534	-494	-1,166	-1,381	-2,182	-1,363	-1,475	-1,575	-1,713	-2,081	-2,271	-2,470	-2,555	-2,668	-2,777	-2,881	-2,981	-3,075	-3,162	-3,251
Tax Adjustments (Core)	-536	4	-161	-45	-65	-109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operating Income after taxes (NOPLAT)	1,441	2,014	1,697	4,343	5,128	8,099	5,129	5,547	5,924	6,445	7,829	8,543	9,290	9,611	10,036	10,445	10,839	11,214	11,567	11,894	12,230
Total Sales and Revenues (Non-Core)	2,333	2,580	2,440	2,482	2,699	3,341	3,562	3,564	3,573	3,678	3,749	3,906	4,063	4,191	4,362	4,525	4,682	4,830	4,967	5,093	5,223
Interest Income	1,794	2,074	1,962	1,854	2,027	2,821	2,943	2,944	2,951	3,016	3,077	3,206	3,335	3,440	3,580	3,714	3,843	3,964	4,077	4,180	4,287
Other Income	539	506	478	628	672	520	619	620	621	661	672	700	728	751	782	811	839	866	890	913	936
Total Expenses (Non-Core)	-858	-990	-1,152	-862	-635	-91	-1,112	-1,068	-1,028	-1,012	-997	-1,018	-1,037	-1,061	-1,095	-1,127	-1,157	-1,184	-1,208	-1,229	-1,250
Interest expense	330	360	272	279	426	984	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other operating expenses	-1,188	-1,350	-1,424	-1,141	-1,061	-1,075	-1,112	-1,068	-1,028	-1,012	-997	-1,018	-1,037	-1,061	-1,095	-1,127	-1,157	-1,184	-1,208	-1,229	-1,250
Income before taxes (Non-Core)	1,475	1,590	1,288	1,620	2,064	3,250	2,451	2,496	2,545	2,666	2,752	2,888	3,026	3,130	3,267	3,398	3,525	3,646	3,759	3,865	3,973
Notional Taxes (Non-Core)	-310	-334	-270	-340	-433	-683	-515	-524	-534	-560	-578	-607	-636	-657	-686	-714	-740	-766	-789	-812	-834
Tax Adjustments (Non-Core)	-316	3	-88	-13	-20	-34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Income after taxes (Non-Core, before OCI)	849	1,259	929	1,267	1,610	2,533	1,936	1,972	2,010	2,106	2,174	2,282	2,391	2,473	2,581	2,685	2,785	2,880	2,970	3,053	3,139
Other comprehensive income	866	-1,201	54	3,018	-408	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Income after taxes (Non-Core, after OCI)	2,581	-1,143	1,037	7,303	794	2,533	1,936	1,972	2,010	2,106	2,174	2,282	2,391	2,473	2,581	2,685	2,785	2,880	2,970	3,053	3,139
Income from Financing activities	1,327	1,444	1,514	1,483	1,678	2,125	1,772	1,394	1,374	1,401	1,466	1,490	1,546	1,595	1,649	1,716	1,782	1,846	1,907	1,965	2,019
Finance income	1,313	1,419	1,488	1,442	1,338	1,862	1,750	1,372	1,352	1,380	1,444	1,468	1,524	1,573	1,628	1,695	1,760	1,824	1,885	1,943	1,997
Other income	14	25	26	41	340	263	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
Interest expense	-1,234	-1,490	-1,271	-1,055	-1,189	-2,746	-1,441	-1,419	-1,449	-1,517	-1,252	-1,300	-1,341	-1,388	-1,445	-1,501	-1,555	-1,607	-1,657	-1,703	-1,751
Interest expense - Financial Services	-936	-1,234	-942	-687	-799	-1,846	-1,066	-1,050	-1,072	-1,122	-851	-883	-912	-943	-982	-1,020	-1,057	-1,093	-1,126	-1,157	-1,190
Interest expense - Corporate	-298	-256	-329	-368	-390	-901	-375	-369	-377	-395	-401	-416	-430	-445	-463	-481	-498	-515	-531	-545	-561
Financial Result before taxes	93	-46	243	428	489	-621	332	-26	-75	-115	214	190	205	207	205	215	227	239	250	262	268
Notional Taxes (Financial)	-20	10	-51	-90	-103	130	-70	5	16	24	-45	-40	-43	-43	-43	-45	-48	-50	-53	-55	-56
Tax Adjustments (Financial)	-20	-0	-17	-3	-5	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Financial Income after taxes (before OCI)	54	-36	175	335	381	-484	262	-20	-59	-91	169	150	162	163	162	170	179	188	198	207	212
Other comprehensive income	-13	29	14	-18	-109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Financial Income after taxes (after OCI)	41	-7	189	317	272	-484	262	-20	-59	-91	169	150	162	163	162	170	179	188	198	207	212
Net Profit less adjusted Taxes (NPLAT)	4,167	4,388	4,053	6,790	8,049	12,223	8,736	8,887	9,292	9,944	11,246	12,090	12,993	13,437	14,017	14,587	15,137	15,661	16,155	16,614	17,081
OCI	2,344	3,236	2,801	5,944	7,120	10,148	7,327	7,499	7,875	8,460	10,173	10,975	11,843	12,247	12,778	13,300	13,804	14,283	14,734	15,154	15,580
Equity in income (Loss) of unconsolidated affiliates	27	21	-48	21	10	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Income	2,371	3,257	2,753	5,965	7,130	10,155	7,327	7,499	7,875	8,460	10,173	10,975	11,843	12,247	12,778	13,300	13,804	14,283	14,734	15,154	15,580
interests	-3	-4	-2	-2	1	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Income Attributable to Deere & Company	2,368	3,253	2,751	5,963	7,131	10,166	7,327	7,499	7,875	8,460	10,173	10,975	11,843	12,247	12,778	13,300	13,804	14,283	14,734	15,154	15,580
Other comprehensive income	853	-1,172	68	3,000	-517	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Comprehensive Income of Consolidated Group	3,224	2,085	2,821	8,965	6,613	10,155	7,327	7,499	7,875	8,460	10,173	10,975	11,843	12,247	12,778	13,300	13,804	14,283	14,734	15,154	15,580
Comprehensive income (loss) attributable to noncontrolling interests	-2	-4	-2	-2	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Company	3,222	2,081	2,819	8,963	6,6,																

b) Balance Sheet

in million USD	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Core assets	62,598	65,344	66,638	73,526	77,194	90,313	83,080	79,786	79,290	80,238	80,970	84,050	86,640	89,523	93,047	96,483	99,770	102,864	105,740	108,373	111,050
Core assets - Current	50,604	53,055	54,215	61,229	64,386	75,473	67,414	65,045	64,599	65,300	65,752	68,024	70,013	72,269	75,119	77,879	80,515	82,996	85,299	87,406	89,553
Working cash	3,862	3,857	7,066	8,017	4,774	7,458	5,344	5,277	5,222	5,266	5,301	5,448	5,590	5,759	5,988	6,205	6,413	6,607	6,788	6,953	7,122
Trade accounts and notes receivable - net	5,004	5,230	4,171	4,208	6,410	7,739	6,047	6,044	6,059	6,183	6,302	6,553	6,807	7,013	7,291	7,564	7,825	8,071	8,301	8,511	8,727
Financing receivables - net	27,054	29,195	29,750	33,799	36,634	43,673	38,539	37,173	36,783	37,099	37,345	38,379	39,376	40,570	42,179	43,712	45,173	46,546	47,818	48,979	50,169
Other receivables	1,370	1,231	931	1,436	1,450	1,526	2,738	1,857	1,901	1,996	2,144	2,578	2,782	3,002	3,104	3,239	3,371	3,499	3,620	3,735	3,841
Equipment on operating leases - net	7,165	7,567	7,298	6,988	6,623	6,917	6,771	6,686	6,616	6,673	6,717	6,903	7,082	7,297	7,586	7,862	8,125	8,372	8,601	8,809	9,023
Inventories	6,149	5,975	4,999	6,781	8,495	8,160	7,976	8,008	8,018	8,083	7,943	8,163	8,375	8,629	8,972	9,298	9,608	9,900	10,171	10,418	10,671
Core assets - Non current	11,994	12,289	12,423	12,297	12,808	14,839	15,666	14,741	14,692	14,938	15,218	16,026	16,627	17,254	17,928	18,604	19,254	19,868	20,441	20,968	21,497
Property and equipment - net	5,868	5,973	5,817	5,820	6,056	6,879	7,234	7,143	7,068	7,129	7,176	7,375	7,566	7,796	8,105	8,399	8,680	8,944	9,188	9,412	9,640
Goodwill	3,101	2,917	3,081	3,291	3,687	3,900	3,994	3,969	3,979	4,070	4,155	4,326	4,499	4,641	4,830	5,011	5,185	5,349	5,502	5,643	5,786
Other intangible assets - net	1,562	1,380	1,327	1,275	1,218	1,133	1,202	1,187	1,175	1,185	1,193	1,226	1,258	1,296	1,347	1,396	1,443	1,487	1,527	1,564	1,602
Deferred income tax assets	808	1,466	1,499	1,037	824	1,814	2,418	1,640	1,678	1,763	1,894	2,277	2,457	2,651	2,741	2,860	2,977	3,090	3,197	3,298	3,392
Other assets	655	553	699	874	1,023	1,113	819	802	791	792	801	823	847	871	905	937	969	999	1,026	1,051	1,076
Core Liabilities	-9,646	-9,578	-9,193	-10,160	-11,797	-12,819	-15,808	-15,256	-15,125	-14,804	-14,622	-15,177	-15,627	-16,155	-16,789	-17,408	-18,000	-18,557	-19,075	-19,549	-20,030
Core liabilities - Current	-7,540	-7,448	-7,027	-9,163	-10,903	-11,865	-14,147	-13,958	-13,815	-13,468	-13,236	-13,602	-13,956	-14,379	-14,949	-15,492	-16,010	-16,497	-16,948	-17,359	-17,781
Accounts payable and accrued expenses	-7,540	-7,448	-7,027	-9,163	-10,903	-11,865	-14,147	-13,958	-13,815	-13,468	-13,236	-13,602	-13,956	-14,379	-14,949	-15,492	-16,010	-16,497	-16,948	-17,359	-17,781
Core Liabilities - Non-current	-2,106	-2,130	-2,166	-997	-894	-954	-1,661	-1,299	-1,311	-1,335	-1,386	-1,575	-1,671	-1,776	-1,840	-1,916	-1,990	-2,060	-2,127	-2,189	-2,249
Accounts payable and accrued expenses	-1,550	-1,635	-1,647	-421	-399	-434	-558	-550	-545	-531	-522	-536	-550	-567	-590	-611	-631	-651	-668	-685	-701
Deferred income tax liabilities	-556	-495	-519	-576	-495	-520	-1,103	-748	-766	-804	-864	-1,039	-1,121	-1,209	-1,251	-1,305	-1,358	-1,410	-1,459	-1,505	-1,548
Core Invested Capital	52,952	55,766	57,445	63,366	65,397	77,493	67,272	64,530	64,165	65,435	66,349	68,873	71,013	73,368	76,257	79,075	81,770	84,307	86,665	88,825	91,020
Non-Core assets	7,468	7,667	8,453	10,588	12,836	13,774	11,607	11,418	11,470	11,735	12,008	12,497	13,007	13,552	14,232	14,921	15,620	16,325	17,037	17,756	18,525
Non-Core assets - Current	4,512	4,964	5,344	5,387	6,670	8,281	6,988	6,891	6,957	7,145	7,337	7,667	8,011	8,405	8,886	9,381	9,892	10,421	10,968	11,537	12,152
Marketable securities	490	581	641	728	734	946	1,048	1,162	1,288	1,427	1,581	1,753	1,942	2,153	2,386	2,644	2,930	3,247	3,598	3,988	4,420
Financial Assets	4,022	4,383	4,703	4,659	5,936	7,335	5,940	5,729	5,669	5,718	5,755	5,915	6,069	6,253	6,501	6,737	6,962	7,174	7,370	7,549	7,732
Non-Core assets - Non-current	2,956	2,703	3,109	5,201	6,166	5,493	4,619	4,527	4,513	4,590	4,671	4,829	4,996	5,147	5,346	5,541	5,728	5,904	6,068	6,220	6,374
Receivables from Financial Services	22	46	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other receivables	366	256	289	329	1,042	1,097	370	366	362	365	368	378	388	399	415	430	445	458	471	482	494
Investments in unconsolidated affiliates	207	215	193	175	117	0	151	151	151	151	151	151	151	151	151	151	151	151	151	151	151
Retirement benefits	1,298	840	863	3,601	3,730	3,007	2,562	2,563	2,569	2,626	2,679	2,791	2,903	2,995	3,117	3,234	3,346	3,451	3,549	3,640	3,732
Other assets	1,063	1,346	1,733	1,096	1,277	1,390	1,535	1,448	1,431	1,448	1,474	1,509	1,554	1,602	1,663	1,726	1,786	1,844	1,897	1,947	1,996
Non-Core Liabilities	-6,529	-6,227	-6,531	-6,528	-5,438	-5,381	-5,387	-5,389	-5,402	-5,519	-5,532	-5,763	-5,995	-6,183	-6,436	-6,677	-6,908	-7,126	-7,329	-7,515	-7,706
Non-Core Liabilities - Non-current	-6,529	-6,227	-6,531	-6,528	-5,438	-5,381	-5,387	-5,389	-5,402	-5,519	-5,532	-5,763	-5,995	-6,183	-6,436	-6,677	-6,908	-7,126	-7,329	-7,515	-7,706
Accounts payable and accrued expenses	-764	-260	-1,118	-2,184	-2,889	-3,144	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Retirement benefits and other liabilities	-5,751	-5,953	-5,413	-4,344	-2,457	-2,140	-5,290	-5,292	-5,305	-5,422	-5,532	-5,763	-5,995	-6,183	-6,436	-6,677	-6,908	-7,126	-7,329	-7,515	-7,706
Redeemable noncontrolling interest	-14	-14	0	0	-92	-97	-97	-97	-97	-97	-97	0	0	0	0	0	0	0	0	0	0
Non-Core Invested Capital	939	1,440	1,922	4,060	7,398	8,394	6,219	6,029	6,068	6,216	6,476	6,734	7,012	7,369	7,796	8,244	8,711	9,199	9,708	10,241	10,819
Total Funds Invested	53,891	57,206	59,367	67,426	72,795	85,887	73,491	70,559	70,233	71,650	72,825	75,607	78,025	80,737	84,054	87,320	90,481	93,505	96,373	99,066	101,839
Financial Liabilities	-42,642	-45,789	-46,423	-48,992	-52,530	-64,098	-54,152	-53,350	-54,450	-57,009	-57,944	-60,157	-62,081	-64,238	-66,878	-69,476	-71,992	-74,398	-76,679	-78,822	-81,029
Short-term borrowings	-15,019	-15,105	-13,264	-15,524	-18,303	-24,934	-19,242	-18,957	-19,348	-20,257	-20,590	-21,376	-22,060	-22,826	-23,764	-24,687	-25,581	-26,436	-27,247	-28,008	-28,792
Accounts payable and accrued expenses	-386	-455	-425	-580	-631	-687	-540	-532	-543	-569	-578	-600	-619	-641	-667	-693	-718	-742	-765	-786	-808
Long-term borrowings	-27,237	-30,229	-32,734	-32,888	-33,596	-38,477	-34,369	-33,861	-34,559	-36,183	-36,776	-38,181	-39,402	-40,771	-42,447	-44,096	-45,692	-47,220	-48,668	-50,028	-51,428
Financial Debt	-42,642	-45,789	-46,423	-48,992	-52,530	-64,098	-54,152	-53,350	-54,450	-57,009	-57,944	-60,157	-62,081	-64,238	-66,878	-69,476	-71,992	-74,398	-76,679	-78,822	-81,029
Excess Cash	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Debt	-42,600	-45,789	-46,423	-48,992	-52,530	-64,098	-54,152	-53,350	-54,450	-57,009	-57,944	-60,157	-62,081	-64,238	-66,878	-69,476	-71,992	-74,398	-76,679	-78,822	-81,029
Total Assets	70,108	73,011	75,091	84,114	90,030	104,087	94,687	91,205	90,760	91,973	92,979	96,547	99,647	103,075	107,279	111,405	115,389	119,188	122,777	126,130	129,575
Total Liabilities and Stockholders Equity	-70,108	-73,011	-75,091	-84,114	-90,030	-104,087	-94,687	-91,205	-90,760	-91,973	-92,979	-96,547	-99,647								

c) Cash Flow Statement

In million USD	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Core Income before taxes	2,503	2,544	2,352	5,554	6,574	10,390	6,492	7,022	7,499	8,158	9,910	10,814	11,760	12,166	12,704	13,222	13,721	14,196	14,642	15,055	15,481
Less Taxes on core income	-1,062	-530	-655	-1,211	-1,446	-2,291	-1,363	-1,475	-1,575	-1,713	-2,081	-2,271	-2,470	-2,555	-2,668	-2,777	-2,881	-2,981	-3,075	-3,162	-3,251
NOPLAT	1,441	2,014	1,697	4,343	5,128	8,099	5,129	5,547	5,924	6,445	7,829	8,543	9,290	9,611	10,036	10,445	10,839	11,214	11,567	11,894	12,230
Plus: Provision for depreciation and amortization																					
Gross core cash flow	1,441	2,014	1,697	4,343	5,128	8,099	5,129	5,547	5,924	6,445	7,829	8,543	9,290	9,611	10,036	10,445	10,839	11,214	11,567	11,894	12,230
Change in net operating current assets	n/a	-2,451	-1,160	-7,014	-3,157	-11,087	8,059	2,369	446	-702	-452	-2,272	-1,988	-2,257	-2,850	-2,760	-2,636	-2,480	-2,303	-2,107	-2,147
Investments in PP&E and intangibles	n/a	261	45	-161	-575	-951	-518	130	77	-161	-140	-403	-397	-409	-549	-525	-501	-472	-438	-401	-410
Change in net other operating assets	n/a	-556	-179	287	64	-1,080	-309	795	-28	-85	-140	-405	-204	-218	-124	-151	-149	-142	-135	-126	-119
Change in accounts payable and accrued expenses	n/a	-92	-421	2,136	1,740	962	2,282	-190	-143	-346	-233	367	354	423	570	543	518	486	451	412	422
Change in other core non-current liabilities	n/a	24	36	-1,169	-103	60	707	-362	12	25	51	189	96	105	64	76	74	71	67	62	59
Change in Core Invested Capital		-2,814	-1,679	-5,921	-2,031	-12,096	10,221	2,742	365	-1,269	-914	-2,524	-2,140	-2,355	-2,889	-2,818	-2,695	-2,537	-2,358	-2,159	-2,196
Core FCF		-800	18	-1,578	3,097	-3,998	15,350	8,289	6,289	5,175	6,915	6,019	7,150	7,256	7,147	7,627	8,145	8,677	9,208	9,734	10,034
Non-Core Result (after Tax)	849	1,259	929	1,267	1,610	2,533	1,936	1,972	2,010	2,106	2,174	2,282	2,391	2,473	2,581	2,685	2,785	2,880	2,970	3,053	3,139
Change in Non-Core Invested Capital	n/a	-501	-482	-2,138	-3,338	-996	2,174	190	-38	-148	-261	-258	-278	-356	-428	-448	-467	-487	-509	-533	-578
Non-Core FCF	n/a	758	447	-871	-1,728	1,538	4,110	2,162	1,972	1,958	1,913	2,024	2,113	2,116	2,153	2,237	2,318	2,393	2,461	2,520	2,561
Unlevered free cash flow to firm	n/a	-43	465	-2,450	1,370	-2,460	19,460	10,451	8,261	7,133	8,828	8,044	9,263	9,372	9,299	9,864	10,463	11,071	11,669	12,254	12,595
Financial Result (after Tax)	54	-36	175	335	381	-484	262	-20	-59	-91	169	150	162	163	162	170	179	188	198	207	212
Net income attributable to noncontrolling interest & unconsolidated affiliates	n/a	17	-50	19	11	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Change in Net Financial Debt	n/a	3,189	634	2,569	3,538	11,568	-9,946	-802	1,100	2,558	935	2,213	1,924	2,158	2,639	2,598	2,516	2,406	2,282	2,143	2,207
Change in Noncontrolling Interest	n/a	1	3	-4	0	1	0	0	-1	0	0	-0	-0	0	0	0	-0	-0	-0	0	0
Change in Equity	n/a	125	1,524	5,494	1,831	1,523	-2,449	-2,130	-1,426	-1,141	240	568	494	554	678	667	646	618	586	550	567
Less: Net Income Attributable to Deere & Company	n/a	-3,253	-2,751	-5,963	-7,131	-10,166	-7,327	-7,499	-7,875	-8,460	-10,173	-10,975	-11,843	-12,247	-12,778	-13,300	-13,804	-14,283	-14,734	-15,154	-15,580
Financial FCF	43	-465	2,450	-1,370	2,460	-19,460	-10,451	-8,261	-7,133	-8,828	-8,044	-9,263	-9,372	-9,299	-9,864	-10,463	-11,071	-11,669	-12,254	-12,595	

2) Selected KPIs

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Cash Flow Metrics (in days)																					
Average Holding Period	87.77	81.40	77.06	85.01	87.74	78.97	80.61	82.04	82.99	82.99	82.99	82.99	82.99	82.99	82.99	82.99	82.99	82.99	82.99	82.99	82.99
Average Collection Period	50.69	50.48	44.74	36.10	45.97	47.78	43.13	43.06	43.04	42.94	42.90	42.82	42.75	42.71	42.66	42.66	42.65	42.65	42.65	42.65	42.64
Average Payable Period	118.53	105.01	125.56	142.25	142.46	145.26	142.99	142.99	142.99	138.29	138.29	138.29	138.29	138.29	138.29	138.29	138.29	138.29	138.29	138.29	138.29
Cash Conversion Cycle	19.93	26.87	-3.76	-21.14	-8.75	-18.51	-19.25	-17.89	-16.96	-12.35	-12.40	-12.48	-12.54	-12.59	-12.64	-12.64	-12.64	-12.64	-12.65	-12.65	-12.65
Liquidity Analysis																					
Current Ratio	7.31	7.79	8.48	7.27	6.52	7.06	5.26	5.15	5.18	5.38	5.52	5.56	5.59	5.61	5.62	5.63	5.65	5.66	5.68	5.70	5.72
Quick Ratio	6.49	6.99	7.76	6.53	5.74	6.37	4.70	4.58	4.60	4.78	4.92	4.96	4.99	5.01	5.02	5.03	5.05	5.06	5.08	5.10	5.12
Cash Ratio	0.52	0.52	1.01	0.87	0.44	0.63	0.38	0.38	0.38	0.39	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Total Cash / Revenues	10.45%	9.82%	19.88%	18.21%	9.08%	12.18%	10.09%	10.03%	9.90%	9.76%	9.62%	9.50%	9.37%	9.36%	9.35%	9.34%	9.33%	9.32%	9.31%	9.29%	9.28%
FCFF / Total Sales and Revenues		-0.11%	1.31%	-5.56%	2.60%	-4.02%	36.75%	19.86%	15.66%	13.22%	16.03%	14.03%	15.53%	15.23%	14.52%	14.85%	15.22%	15.61%	16.00%	16.38%	16.42%
Capital Structure																					
D/E Ratio	377.3%	401.1%	358.6%	265.8%	259.2%	294.2%	280.0%	310.0%	345.0%	389.4%	389.4%	389.4%	389.4%	389.4%	389.4%	389.4%	389.4%	389.4%	389.4%	389.4%	389.4%
Long Term Borrowings/Financial Debt	63.87%	66.02%	70.51%	67.13%	63.96%	60.03%	63.47%	63.47%	63.47%	63.47%	63.47%	63.47%	63.47%	63.47%	63.47%	63.47%	63.47%	63.47%	63.47%	63.47%	63.47%
Interest Expense / Total Sales and Revenues	-3.42%	-3.94%	-3.74%	-2.48%	-2.34%	-4.64%	-2.82%	-2.77%	-2.82%	-2.89%	-2.33%	-2.33%	-2.31%	-2.32%	-2.32%	-2.32%	-2.32%	-2.33%	-2.33%	-2.34%	-2.34%
Performance Indicators																					
Total Sales and Revenues	37,358	39,258	35,540	44,024	52,577	61,251	52,952	52,627	52,758	53,961	55,086	57,350	59,654	61,530	64,031	66,438	68,742	70,917	72,946	74,810	76,717
YoY Total sales & revenues growth rate	n/a	5.09%	-9.47%	23.87%	19.43%	16.50%	-13.55%	-0.61%	0.25%	2.28%	2.08%	4.11%	4.02%	3.14%	4.06%	3.76%	3.47%	3.16%	2.86%	2.56%	2.55%
Gross Profit Margin	31.55%	31.75%	33.38%	33.86%	32.79%	38.43%	31.80%	32.30%	33.16%	34.12%	36.58%	37.40%	38.25%	38.32%	38.38%	38.45%	38.53%	38.60%	38.68%	38.75%	38.83%
Operating Net Profit Margin	7.43%	7.22%	7.45%	13.86%	13.64%	18.62%	13.63%	14.73%	15.68%	16.69%	19.87%	20.82%	21.76%	21.82%	21.90%	21.96%	22.03%	22.10%	22.16%	22.22%	22.28%
Net profit margin	6.34%	8.29%	7.74%	13.54%	13.56%	16.60%	13.84%	14.25%	14.93%	15.68%	18.47%	19.14%	19.85%	19.90%	19.96%	20.02%	20.08%	20.14%	20.20%	20.26%	20.31%
Non-Operating Net Profit Margin	36.40%	48.78%	38.08%	51.03%	59.66%	75.82%	54.34%	55.33%	56.27%	57.27%	57.99%	58.42%	58.84%	59.00%	59.17%	59.33%	59.48%	59.64%	59.79%	59.94%	60.09%
Revenue / Total Funds Invested	69.32%	68.63%	59.86%	65.29%	72.23%	71.32%	72.05%	74.59%	75.12%	75.31%	75.64%	75.85%	76.46%	76.21%	76.18%	76.09%	75.97%	75.84%	75.69%	75.52%	75.33%
YoY Total Funds Invested growth rate	n/a	5.80%	3.64%	11.95%	7.38%	15.24%	-16.87%	-4.16%	-0.47%	1.98%	1.61%	3.68%	3.10%	3.36%	3.95%	3.74%	3.49%	3.23%	2.98%	2.72%	2.72%
Overall ROIC	n/a	6.00%	4.90%	10.01%	10.56%	13.94%	8.53%	10.20%	11.16%	12.05%	14.20%	15.07%	15.66%	15.70%	15.83%	15.82%	15.81%	15.79%	15.76%	15.72%	15.73%
Operating Return on Operating Assets	2.30%	3.08%	2.55%	5.91%	6.64%	8.97%	6.17%	6.95%	7.47%	8.03%	9.67%	10.16%	10.72%	10.74%	10.79%	10.83%	10.86%	10.90%	10.94%	10.97%	11.01%
ROA (Return on assets)	3.38%	4.46%	3.66%	7.09%	7.92%	9.77%	7.74%	8.22%	8.68%	9.20%	10.94%	11.37%	11.88%	11.88%	11.91%	11.94%	11.96%	11.98%	12.00%	12.01%	12.02%
WACC	7.68%	7.68%	7.68%	7.68%	7.68%	7.68%	7.68%	7.68%	7.68%	7.68%	7.68%	7.68%	7.68%	7.68%	7.68%	7.68%	7.68%	7.68%	7.68%	7.68%	7.68%
Overall Annual Value Creation (in %)	n/a	-1.67%	-2.78%	2.33%	2.88%	6.26%	0.85%	2.53%	3.48%	4.37%	6.52%	7.39%	7.98%	8.02%	8.15%	8.14%	8.13%	8.11%	8.08%	8.05%	8.05%
Overall Annual Value Creation (in mUSD)	n/a	-54	-78	139	205	635	62	189	274	369	663	811	946	982	1,041	1,083	1,122	1,158	1,190	1,219	1,254
ROE Breakdown																					
Overall ROE	20.77%	28.35%	21.65%	32.25%	35.14%	46.58%	37.89%	43.58%	49.91%	57.79%	68.37%	71.06%	74.29%	74.25%	74.41%	74.55%	74.67%	74.77%	74.83%	74.87%	74.88%
Asset Turnover (AT)	51.39%	51.79%	45.31%	50.58%	56.54%	56.80%	54.05%	56.17%	56.62%	57.15%	57.67%	57.86%	58.31%	58.15%	58.15%	58.10%	58.03%	57.95%	57.86%	57.75%	57.65%
Equity Multiplier (EM) (Total Assets/Equity)	621.08%	639.72%	580.44%	456.37%	444.33%	477.79%	489.70%	530.09%	575.20%	628.33%	624.95%	625.06%	625.13%	624.91%	624.72%	624.48%	624.21%	623.90%	623.56%	623.17%	622.76%
Du Pont Analysis (Net Profit Margin * AT * EM)	20.23%	27.45%	20.36%	31.26%	34.07%	45.05%	36.62%	42.43%	48.61%	56.29%	66.55%	69.21%	72.37%	72.33%	72.50%	72.63%	72.74%	72.82%	72.88%	72.90%	72.91%

3) Forecasting Methodology

a) Revenue Model

Total Sales & Revenues			
Finance & Interest Income	Other	Equipment Operations Revenue	
<i>as % of Equipment Operations Revenue</i>	PPA	SAT	CF

I. Long-Term Model (FY 24-40)

- Includes drivers that **demonstrated growth patterns** comparable to the segment in **historical years**.
- A **linear regression** was used to determine the **strengths of the relationship** of each driver within a segment.
- The long-term model indicate the **general direction** for the development of the segment.

Segment Specific Drivers and Coefficients

a. Revenue weighted GDP growth (244.82%)	a. Revenue weighted GDP growth (237.00%)	a. Revenue weighted GDP growth (262.49%)
b. S&P Agriculture Index (34.51%)	b. S&P Agriculture Index (33.00%)	b. S&P 500 Construction, Machinery & Heavy Trucks (46.21%)
c. US Farm Net Cash Income (30.90%)	c. US Farm Net Cash Income (10.00%)	c. Yearly decline in deforestation activity (35.36%)

II. Short-Term Model (FY 24-30)

- Includes drivers that **directly impact short-term growth**.
- **Explicit predictions** for those drivers **help to increase the YoY accuracy** of the forecast.

Segment Specific Drivers and Coefficients

a. Cash Expenses on Machinery, Tractors, and Self-Propelled as of % of prev. Year U.S. Net Farm Cash Income (100.00% for PPA; 65.00% for SAT)	a. Yearly decline in deforestation activity (75.00%)
b. Turf equipment market growth growth (65.00%)	b. Global construction equipment market growth (25.00%)

III. Overall Growth Rate Per Segment

- The long-term and short-term models **exhibit inverse weighting changes** over time which are then **multiplied with the implied growth rate of each model**.
- In FY 24, the short-term models carry a weight 65.00% weight which gradually reduced to 0.00% from FY 31 onwards. The long-term model constitutes the remaining portion.

b) Revenue Long-Term Model Regression Statistics

(i) PPA

Long-Term Model	Weight
GDP Growth	244.82%
S&P Agriculture Index (1 Year Lag)	34.51%
US Farm Financial Data	30.90%
<i>Regression Statistics</i>	
Sum of Squared Errors	16.87%
Sum of Squares Total	42.14%
Standard Deviation	15.22%
R Squared	59.97%
<i>Short-Term Model</i>	
Cash Expenses on Machinery, Tractors, and Self-Propelled as of % of prev. Year U.S. Net Farm Cash Income	100.00%

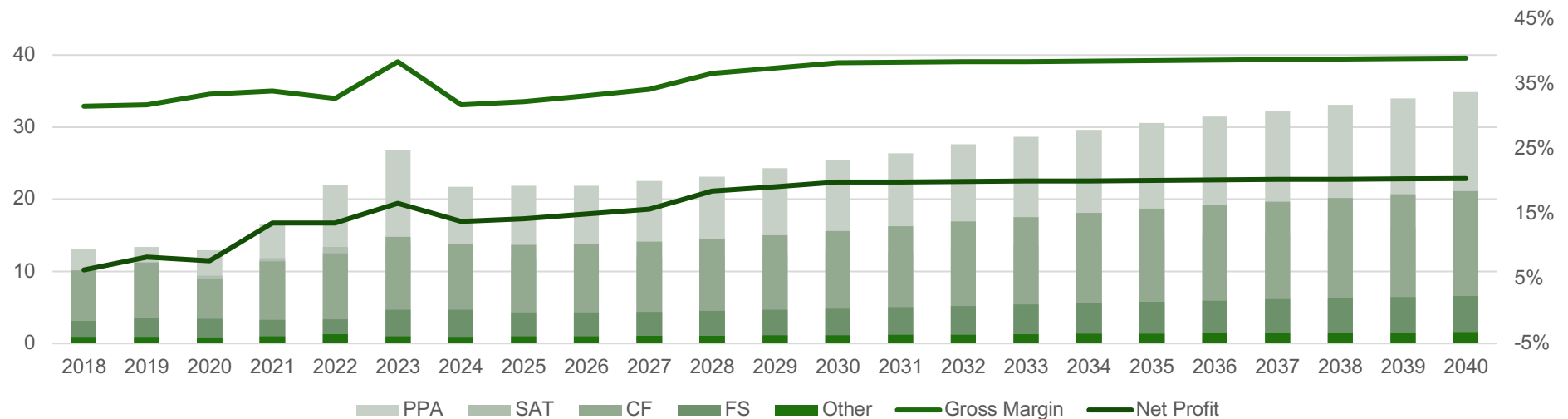
(ii) SAT

Long-Term Model	Weight
GDP Growth	236.57%
S&P Agriculture Index (1 Year Lag)	32.96%
US Farm Financial Data	9.76%
<i>Regression Statistics</i>	
Sum of Squared Errors	15.58%
Sum of Squares Total	34.58%
Standard Deviation	12.95%
R Squared	54.94%
<i>Short-Term Model</i>	
Cash Expenses on Machinery, Tractors, and Self-Propelled as of % of prev. Year U.S. Net Farm Cash Income	65.00%
Turf Equipment Market Growth	35.00%

(iii) CF

Long-Term Model	Weight
GDP Growth	262.49%
S&P 500 Construction, Machinery & Heavy Trucks (1 Year Lag)	46.21%
Global primary forest loss (Mha) (2 Year Lag)	35.36%
<i>Regression Statistics</i>	
Sum of Squared Errors	39.13%
Sum of Squares Total	136.03%
Standard Deviation	26.38%
R Squared	71.24%
<i>Short-Term Model</i>	
Global primary forest loss (Mha) (2 Year Lag)	75.00%
Markt Growth	25.00%

c) Revenue per Segment and Gross- and Net Profit Margins



4) List of Companies Included in Multiples Valuation

Company	Comparability	Employees	Share Price in USD	YTD Stock Return	Market Cap (m)	Enterprise Value	D/E Ratio
DEERE & CO		82,239	338.95	9.96%	108,686	105,705	256
AGCO CORP	1	25,600	107.87	11.28%	8,857	10,786	42
CATERPILLAR INC	1	109,100	235.97	29.72%	139,269	142,584	236
CLAAS KGAA MBH	2	12,116	n/a	n/a	n/a	n/a	35
CNH INDUSTRIAL NV	1	40,070	10.22	-27.86%	16,146	18,090	332
HITACHI CONSTRUCTION MACHINE	2	25,430	24.05	24.68%	6,623	10,616	83
KOMATSU LTD	1	64,343	23.64	52.27%	26,279	33,737	42
KUBOTA CORP	1	50,352	13.25	-14.24%	17,219	30,928	79
MAHINDRA & MAHINDRA LTD	1	21,297	17.94	98.19%	23,257	32,667	138
VOLVO AB-B SHS	1	102,155	21.72	35.96%	41,987	37,649	123
XCMG CONSTRUCTION MACHIN-A	2	27,457	0.71	-0.52%	10,314	17,085	132

Company	Revenue (m)	Sales Growth	Gross Margin	EBITDA Margin	EBITDA Growth	EPS	Net Income Margin	EV/EBITDA	EV/Revenues	P/E
DEERE & CO	52,577	26.89%	32.79%	27.32%	53.85%	23	13.33%	8.8x	2.0x	14.4x
AGCO CORP	12,651	23.16%	23.72%	14.46%	57.05%	12	7.36%	6.6x	0.9x	8.6x
CATERPILLAR INC	59,427	19.88%	27.73%	23.26%	60.21%	14	12.56%	12.4x	2.4x	16.3x
CLAAS KGAA MBH	5,339	2.66%	25.69%	10.62%	1.51%	5	2.92%	n/a	n/a	n/a
CNH INDUSTRIAL NV	23,551	18.04%	28.68%	21.00%	22.30%	1	8.33%	3.9x	0.8x	7.0x
HITACHI CONSTRUCTION MACHINE	9,464	25.14%	32.39%	16.46%	36.17%	3	5.70%	7.2x	1.1x	9.5x
KOMATSU LTD	26,211	26.09%	31.32%	19.09%	43.82%	3	9.35%	6.8x	1.3x	9.1x
KUBOTA CORP	20,501	24.79%	25.55%	13.12%	29.36%	1	5.97%	13.0x	1.5x	12.9x
MAHINDRA & MAHINDRA LTD	15,102	57.25%	39.20%	16.73%	41.20%	1	8.48%	12.9x	2.2x	17.4x
VOLVO AB-B SHS	46,950	26.60%	8.19%	15.31%	17.42%	2	8.38%	5.0x	0.8x	11.2x
XCMG CONSTRUCTION MACHIN-A	13,951	-14.46%	19.01%	n/a	n/a	0	4.94%	13.8x	1.2x	12.3x

5) Sensitivity Tables

1. Effect of the cost of debt an D/EV ratio on the unlevered cost of capital

		D/EV														
		7.68%	25.00%	27.50%	30.00%	32.50%	35.00%	38.12%	40.00%	42.50%	45.00%	47.50%	50.00%	Statistics		
risk free rate proxy as lower bound		4.51%	7.25%	7.24%	7.24%	7.25%	7.25%	7.26%	7.27%	7.28%	7.29%	7.31%	7.32%	Median	7.67%	
		4.72%	7.31%	7.31%	7.32%	7.32%	7.33%	7.34%	7.35%	7.37%	7.38%	7.40%	7.42%	Average	7.68%	
		4.94%	7.37%	7.38%	7.39%	7.40%	7.41%	7.43%	7.44%	7.46%	7.48%	7.50%	7.52%	Min	7.24%	
		5.16%	7.44%	7.45%	7.46%	7.47%	7.49%	7.51%	7.53%	7.55%	7.57%	7.59%	7.62%	Max	8.30%	
		5.38%	7.50%	7.51%	7.53%	7.55%	7.57%	7.60%	7.61%	7.64%	7.66%	7.69%	7.71%	STDEV	0.27%	
calculated rd	rd	5.60%	7.56%	7.58%	7.60%	7.62%	7.65%	7.68%	7.70%	7.72%	7.75%	7.78%	7.81%	STDEV as % of Avg	3.57%	
		5.82%	7.62%	7.65%	7.67%	7.70%	7.73%	7.76%	7.78%	7.81%	7.84%	7.88%	7.91%	STDERR	0.02%	
		6.04%	7.69%	7.72%	7.74%	7.77%	7.81%	7.85%	7.87%	7.90%	7.94%	7.97%	8.01%	Lower Bound	7.74%	
		6.26%	7.75%	7.78%	7.82%	7.85%	7.88%	7.93%	7.96%	7.99%	8.03%	8.07%	8.10%	Upper Bound	7.61%	
		6.47%	7.81%	7.85%	7.89%	7.93%	7.96%	8.01%	8.04%	8.08%	8.12%	8.16%	8.20%	Confidence Interval	99%	
		6.69%	7.88%	7.92%	7.96%	8.00%	8.04%	8.10%	8.13%	8.17%	8.21%	8.26%	8.30%	Z =	2.58	
extrapolated analogous to risk free rate																

2. Effect of the equity beta and E/EV ratio on the unlevered cost of capital

		E/EV													
		7.68%	50.00%	52.50%	55.00%	57.50%	60.00%	61.88%	65.00%	67.50%	70.00%	72.50%	75.00%	Statistics	
lower bound		0.797	6.94%	6.97%	7.00%	7.02%	7.05%	7.07%	7.09%	7.11%	7.13%	7.15%	7.17%	Median	7.67%
		0.842	7.06%	7.09%	7.12%	7.14%	7.17%	7.19%	7.22%	7.24%	7.26%	7.28%	7.30%	Average	7.65%
		0.887	7.17%	7.20%	7.23%	7.26%	7.29%	7.31%	7.34%	7.37%	7.39%	7.41%	7.43%	Min	6.94%
		0.933	7.28%	7.32%	7.35%	7.38%	7.41%	7.43%	7.47%	7.49%	7.52%	7.54%	7.56%	Max	8.36%
		0.978	7.39%	7.43%	7.47%	7.50%	7.53%	7.55%	7.59%	7.62%	7.65%	7.67%	7.69%	STDEV	0.37%
estimated equity beta for Deere & Co.	equity beta	1.024	7.50%	7.54%	7.58%	7.62%	7.65%	7.68%	7.72%	7.74%	7.77%	7.80%	7.83%	STDEV as % of Avg	4.80%
		1.061	7.60%	7.64%	7.68%	7.72%	7.75%	7.78%	7.82%	7.85%	7.88%	7.91%	7.93%	STDERR	0.03%
		1.098	7.69%	7.73%	7.77%	7.81%	7.85%	7.88%	7.92%	7.95%	7.98%	8.01%	8.04%	Lower Bound	7.73%
		1.135	7.78%	7.83%	7.87%	7.91%	7.95%	7.98%	8.02%	8.05%	8.09%	8.12%	8.15%	Upper Bound	7.56%
		1.172	7.87%	7.92%	7.96%	8.01%	8.05%	8.08%	8.12%	8.16%	8.19%	8.22%	8.25%	Confidence Interval	99%
		1.209	7.96%	8.01%	8.06%	8.10%	8.15%	8.18%	8.22%	8.26%	8.30%	8.33%	8.36%	Z =	2.58
upper bound															

3. Effect of the terminal value growth rate and the unlevered cost of capital on the share price

		TV growth rate													
		392	0.97%	1.22%	1.47%	1.72%	1.97%	2.22%	2.47%	2.72%	2.97%	3.22%	3.47%	Statistics	
min		6.94%	424.44	432.04	440.20	448.95	458.35	468.45	479.29	490.89	503.25	516.28	529.74	Median	389.72
		7.09%	412.31	419.14	426.43	434.19	442.47	451.28	460.63	470.49	480.79	491.36	501.86	Average	396.25
		7.24%	400.75	406.87	413.36	420.23	427.49	435.12	443.12	451.41	459.87	468.27	476.16	Min	327.70
		7.38%	389.72	395.19	400.95	407.00	413.32	419.89	426.66	433.54	440.35	446.80	452.38	Max	529.74
		7.53%	379.19	384.06	389.15	394.43	399.90	405.50	411.16	416.76	422.09	426.80	430.32	STDEV	47.29
Ru		7.68%	369.14	373.45	377.91	382.50	387.18	391.89	396.54	400.98	404.96	408.11	409.81	STDEV as % of Avg	11.94%
		7.81%	360.18	364.01	367.93	371.92	375.93	379.88	383.67	387.12	389.98	391.82	391.98	STDERR	4.30
		7.95%	351.58	354.95	358.38	361.81	365.20	368.45	371.45	374.00	375.82	376.47	375.24	Lower Bound	407.32
		8.09%	343.31	346.27	349.22	352.14	354.95	357.55	359.82	361.54	362.42	361.98	359.49	Upper Bound	385.18
		8.22%	335.36	337.92	340.44	342.88	345.15	347.15	348.74	349.70	349.71	348.28	344.64	Confidence Interval	99%
		8.36%	327.70	329.90	332.01	334.00	335.77	337.22	338.18	338.44	337.65	335.31	330.63	Z =	2.58
max															

4. Effect of the margin and the equipment operations growth rate on the share price

		adjustment to equipment operations revenue growth in 2024 vs base case													
		392	-3.75%	-3.00%	-2.25%	-1.50%	-0.75%	0.00%	0.75%	1.50%	2.25%	3.00%	3.75%	Statistics	
lower bound		-0.50%	369.11	371.90	374.69	377.48	380.28	383.07	385.86	388.65	391.45	394.24	397.03	Median	391.89
		-0.40%	370.82	373.62	376.42	379.22	382.03	384.83	387.64	390.44	393.25	396.05	398.86	Average	391.89
		-0.30%	372.52	375.33	378.15	380.96	383.78	386.60	389.41	392.23	395.05	397.87	400.68	Min	369.11
	adjustment to gross margin in 2024 vs base case	-0.20%	374.22	377.05	379.88	382.70	385.53	388.36	391.19	394.02	396.85	399.68	402.51	Max	415.28
		-0.10%	375.93	378.78	381.60	384.44	387.28	390.12	392.97	395.81	398.65	401.49	404.33	STDEV	10.65
		0.00%	377.63	380.48	383.33	386.18	389.04	391.89	394.74	397.60	400.45	403.30	406.16	STDEV as % of Avg	2.72%
		0.10%	379.33	382.19	385.06	387.92	390.79	393.65	396.52	399.38	402.25	405.12	407.98	STDERR	0.97
		0.20%	381.03	383.91	386.79	389.66	392.54	395.42	398.29	401.17	404.05	406.93	409.81	Lower Bound	374.37
		0.30%	382.74	385.62	388.51	391.40	394.29	397.18	400.07	402.96	405.85	408.74	411.63	Upper Bound	393.48
		0.40%	384.44	387.34	390.24	393.14	396.04	398.94	401.84	404.75	407.65	410.55	413.46	Confidence Interval	90%
upper bound		0.50%	386.14	389.05	391.97	394.88	397.79	400.71	403.62	406.53	409.45	412.37	415.28	Z =	1.64

5. Effect of the equity beta and the av. dividend growth rate on the share price

		av. dividend growth rate													
		373	6.93%	7.03%	7.13%	7.23%	7.33%	7.43%	7.53%	7.63%	7.73%	7.83%	7.93%	Statistics	
lower bound		0.7981	546.14	604.03	675.63	766.50	885.61	1048.54	1284.95	1658.98	2340.19	3970.57	13090.73	Median	356.75
		0.8433	459.56	499.87	547.93	606.21	678.36	770.02	890.30	1055.13	1294.86	1675.54	2373.27	Average	455.51
		0.8886	396.67	426.35	460.82	501.36	549.72	608.40	681.11	773.56	895.05	1061.81	1304.92	Min	201.44
	estimated equity beta for Deere & Co.	0.9338	348.93	371.68	397.61	427.43	462.09	502.86	551.53	610.62	683.89	777.15	899.85	Max	13090.73
		0.9790	311.44	329.44	349.65	372.51	398.56	428.53	463.37	504.37	553.34	612.85	686.69	STDEV	308.61
		1.0242	281.23	295.82	312.02	330.09	350.38	373.34	399.51	429.62	464.65	505.89	555.17	STDEV as % of Avg	67.75%
		1.0612	260.58	273.07	286.81	302.01	318.91	337.81	359.10	383.24	410.87	442.80	480.10	STDERR	28.06
		1.0981	242.76	253.57	265.37	278.33	292.62	308.46	326.11	345.90	368.26	393.69	422.91	Lower Bound	-52.10
		1.1350	227.23	236.66	246.92	258.10	270.34	283.80	298.68	315.19	333.65	354.39	377.89	Upper Bound	501.66
		1.1719	213.96	221.87	230.86	240.61	251.21	262.80	275.50	289.49	304.98	322.23	341.54	Confidence Interval	90%
upper bound		1.2089	201.44	208.82	216.76	225.33	234.61	244.68	255.66	267.67	280.86	295.42	311.57	Z =	1.64

6. Effect of the Dividend growth rate and the next Dividend on the shareprice in the dividend discount model

		av. dividend growth rate													
		373	6.93%	7.03%	7.13%	7.23%	7.33%	7.43%	7.53%	7.63%	7.73%	7.83%	7.93%	Statistics	
Upper Bound (Dividend t+1 = +25%)		7.12	351.53	369.78	390.02	412.61	437.98	466.67	499.38	537.03	580.81	632.37	693.97	Median	373.34
		6.84	337.47	354.99	374.42	396.11	420.46	448.00	479.41	515.55	557.58	607.07	666.21	Average	390.70
		6.55	323.41	340.20	358.82	379.60	402.94	429.34	459.43	494.07	534.35	581.78	638.45	Min	210.92
		6.27	309.35	325.40	343.22	363.10	385.40	410.67	439.46	472.58	511.11	556.93	615.17	Max	693.97
		5.98	295.29	311.47	327.62	346.59	367.90	392.00	416.49	451.10	491.11	536.19	588.49	StDEV	106.638
Dividend in t+1		5.70	281.23	295.82	312.05	330.09	348.40	373.34	400.65	429.68	464.65	505.17	555.16	STDEV as % of Avg	27.30%
		5.41	267.16	281.03	296.42	313.59	332.86	354.67	379.53	408.14	441.42	480.60	527.42	STDErr	9.70
		5.13	253.10	266.24	280.82	297.08	315.35	336.00	359.56	386.66	418.15	455.30	499.66	Lower Bound	215.24
		4.84	239.04	251.49	265.22	280.58	297.83	317.34	339.58	365.18	394.95	430.01	471.90	Upper Bound	406.65
		4.55	224.98	236.66	249.61	264.07	280.31	298.69	323.70	348.79	377.12	414.04	454.18	Confidence Interval	90%
Lower Bound (Dividend t+1 = -25%)		4.27	210.92	221.87	234.01	247.57	262.79	280.00	299.63	322.22	348.49	379.42	416.34	Z	1.64

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Report Recommendations

Buy	Expected total return (including expected capital gains and expected dividend yield) of more than 10% over a 12-month period.
Hold	Expected total return (including expected capital gains and expected dividend yield) between 0% and 10% over a 12-month period.
Sell	Expected negative total return (including expected capital gains and expected dividend yield) over a 12-month period.

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