Financial Analysis and Valuation Report Summary

Canadian National Railway

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July 2025

Company Overview

To demonstrate a financial model and visualize performance, I chose Canadian National Railway (CNR). CNR serves as the backbone of the Canadian economy, operating a vast 20,000-mile freight rail network that connects the Atlantic, Pacific, and Gulf coasts. It plays a critical role in transporting goods across key industries such as agriculture, energy, manufacturing, and retail. Known for its strong financial performance, stable cash flows, and broad economic impact, CNR is an ideal company for corporate finance analysis. The predictable revenue and capital structure allow for meaningful forecasting, valuation, and scenario testing.

Key Assumptions & Insights

I used five years of historical data to ensure trend accuracy, normalize for outliers (e.g., the pandemic or fuel price shocks), and align with professional modeling standards. This provided a stronger basis for forecasting revenue, margins, and capital needs.

Revenue was projected using compound annual growth rate (CAGR) to reflect steady long-term growth. Cash was used as a balancing plug to ensure the balance sheet equation holds. Its growth was mainly driven by retained earnings and conservative CapEx and debt assumptions. PPE was forecasted using historical CapEx and depreciation margins. Working capital was modeled using DSO and DPO to better reflect CNR's operating cycle. Since CNR is a capital-intensive railway operator with minimal inventory turnover, inventory was forecasted as a percentage of revenue instead of using DIO, which is not a meaningful metric in this context. Retained earnings were calculated using a payout ratio to estimate dividends, using the formula: *prior retained earnings + net income – dividends.*

DCF Summary

The discounted cash flow (DCF) model yielded an implied equity value of $112.9 billion, or $179.94 per share. The primary drivers of value were strong and growing operating profits, supported by steady EBIT growth from $6.8B to $8.4B over five years. Low working capital needs (nearly flat ΔNWC) and moderate CapEx relative to depreciation helped boost free cash flow. Although CapEx rose each year, it remained below EBITDA, allowing for consistent reinvestment. The majority of enterprise value came from the terminal value ($73.5B), reflecting the long-term stability of CNR's cash flows. Low net debt ($19.9B) further supported a strong equity value.

Dashboard Takeaways

The Capital Structure visualization board shows that retained earnings, not debt, are driving capital growth. By 2029, retained earnings account for nearly 60% of total capital. After briefly dipping below long-term debt in 2024, retained earnings surged while debt remained modest, highlighting CNR's reliance on internally generated profits to fund asset growth.

The DCF Valuation dashboard highlights key valuation drivers. It reveals that 2026 FCFF spikes due to a one-time working capital release, specifically from an increase in accounts payable. NOPAT is the core

driver of FCFF, while terminal value accounts for 79% of enterprise value, emphasizing the weight of long-term assumptions in the valuation.

The final dashboard features a sensitivity analysis, illustrating how changes in WACC and terminal growth affect the implied share price. The base case valuation of $179.94 per share sits at the intersection of a 7.1% WACC and 2% terminal growth. The analysis highlights how valuation is especially sensitive to changes in WACC, with the share price ranging from $147 to $264 across scenarios.

What Went Well

The model produced a well-supported valuation with reasonable outputs and clear financial logic. Key assumptions aligned with CNR's business model, and the DCF was structured to reflect consistent cash flow generation and realistic reinvestment needs. The sensitivity analysis added depth by highlighting how valuation is affected by WACC and terminal growth changes. Visualizations in Power BI were clear and insight-driven, helping to highlight trends like the increasing role of retained earnings in funding growth.

What I Would Improve Next

One area for improvement is the cash balance, which appears unrealistically high in later forecast years. This likely results from conservative CapEx and limited debt repayments and could be refined by adjusting reinvestment assumptions or modeling share buybacks. Incorporating industry benchmarks for margins, capital intensity, or payout ratios would also strengthen the model's realism. Lastly, enhancing the Power BI dashboards with more dynamic visuals or user-driven filters would improve interactivity and usability.