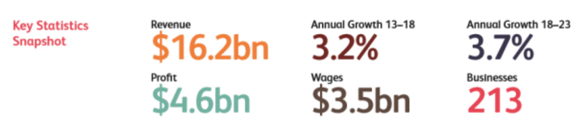
Canadian National Railway (TSX:CNR)

Stock Rating	Soft Buy
12 – 18 month Price Target	$107.50
TSX:CNR Today	$101.50
52-Week Range	$100 - $112
Shares Outstanding	746.1M
Float	758.8M Shrs
Average Daily Trade	1,172
Market Cap	$79,201M
Dividend/Div Yield	$1.65/1.8%
Common Equity	$16.7B
LT Debt	$11.9B

Contents

Executive Summary

Canadian National Railway is a transportation leader in North America. If you reside in North America, most of the products in your home and office have likely been handled by CN (101.50) or one of the other railway companies. That is certainly what my Great Uncle Jean-Guy Laberge would have you know as a *CN Lifer*. The fact is that the more exciting transportation firms, using roads (Roadfreight) and skies (Airfreight), conduct much less essential, heavy business compared to old fashioned railroads and shipping. Therefore, after running two different models, my recommendation is a **SOFT BUY.** While I have advanced training in non-financial disciplines such as history, politics, economics, I am very capable of errors in modelling as I am new to it. Please take this recommendation with a few grains of salt.



(IBIS World, Rail Industry)

Industry Generally Growing

CN (+101.50) is a supply enabler with significant customers in the petroleum and chemical industries in Canada as well as the Louisiana petrochemical development in New Orleans and Baton Rouge area. Western Canada has major oil as well as eastern Canada with their regional plants delivering to particular markets.

Customers & Prices
A critical metric for understanding CN's performance is that when crude oil prices are low, rail competition tends to intensify as road freight becomes more attractive. As oil prices increase, rail fees can increase as well because the alternatives become too expensive. The industry is expected as a whole to grow by 3.7% to $19.4 billion in Canada.

Corporate Strategy
Five Forces

The Threat of New Entrance
For CN (101.50), the threat of new entrants is relatively low. That is because the railway industry is a capital-intensive industry. Investments into building new tracks is not really a good business idea in the short-run. Competitors are restricted due to the right to operate tracks, employment cost and the cost of rail cars all make entry into the railway industry very difficult. Regional monopolies are how this industry rolls.

Rivalry
Service quality in time sensitivity industries is the main means of outperforming competitors. However, the railroads are interconnected. If you've ever read *Atlas Shrugged* you know that the Taggart family lives or dies for operational efficiency. Efficiency entails interchanges (transferring goods from one railroad to another). In Canada, Canadian Pacific is the only real rival; in the North East of the US, you have Norfork Southern, east of the Mississippi river you also have CSX. Although these railroad operators compete with each other, there is a lot of interchange between each other and transfer of merchandise between railroads is critical to delivering to customers. Rivalry is low, cooperation for mutual gain is high.

Threats of Substitution
CN (101.50) definitely competes with the trucking industry, FedEx and other delivery companies for hauls. However, trains are up to 3 to 4 times more fuel-efficient then trucks. Of course, CN is safer for transporting explosive items as well as other goods that then any airfreight or trucking solutions. Currently trucks are increasingly competing for the lowest price. I do not foresee self-driven trucks in the next five-year horizon and energy prices in the trucking industry are still going to be higher than trains by definition. The trucking industry certainly has not innovated on fuel-efficient vehicles despite some commercial entry from the likes of stock market darling; Tesla. Stay tuned for *that* analysis!

Supplier Power
CN (101.50) is dependent on locomotive manufacturers from the likes of General Electric. Due to the capital-intensive nature of new manufacturers, suppliers such as GE do have some level of sway over price points. Another group of suppliers is, of course, the train managers; CN employees are unionized up to 70%. Supplier power is therefore a medium concern.

Buyer Power
From Walmart to Home Depot to Hudson Bay to grain producers, CN (101.50) has a competitive advantage with strong bargaining power over the buyers. CN fundamentally is a strong company because there are a few alternatives; it is monopolistic competition that allows them to succeed in the marketplace as one of the key companies for energizing the Canadian economy. Of course, they have some influence in the US economy as well. Railway is still a great business to be in. This is why Warren Buffett has invested so much in the railway industry. CN is one of the top 10 largest companies in Canada by market size with some influence in the US economy as well. Railway is still a great business to be in as it is the backbone of global commerce.

Changes in Regulations
There are new pricing regulations in Canada. The Canadian transportation

agency has approved a 3% pricing increase for the 2018 2019 grain crop year. This change could affect the projections in terms of future growth for the long-term average. This is all based on Bill C-49. A big customer for CN is the grain producers which is about 7% of the total revenue of CN and over 11% of CP Canadian Pacific in 2017. This revenue exposure could lead to reduced grain volume in 2018 – 2019.

The market price is expected to reach $105 CAD, I suspect that this will be the case. CN (101.50) is leading with profitability and returns on capital continues to increase shareholder value but there are headwinds. The upside? I believe that it will be $112 CAD in the next year. Canada National is expected to have strong economic growth at 2.5%. It may have a downside range of $85 in the worst-case scenario, it could go down to $85 however this worst case is only 33%.

The Data in My Prediction

Canadian National is reporting a 10.1% year-over-year growth for 2017. Despite continued growth there are challenges that are currently pushing the valuation to be a soft BUY. This forecast uses financial information to project forward over the next five years, based on some key assumptions. In addition to the forecasting component, the company will also be valued based on three valuation methods leading with discounted cash flow as my primary method. The benefits of financial valuation modeling include the fact that I can back my notions with numbers! The results are as follows:

Summary of DCF & Multiples

Scenarios

Valuation	Pessimistic	Base	Optimistic
DCF	$85	$103	$127
	Low	Average	High
P/E Multiple	$97	$107	$137
P/B Multiple	$70	$78	$120
Average	$77	$100	$126

DCF (see Appendix)

Discounted Cash Flow	Dec-16	Dec-17	Dec-18	Dec-19	Dec-20
FCFE	4,548	4,076	4,397	4,709	4,991
TV					79,195
	4,548	4,076	4,397	4,709	84,186
Value	77,967.29				
Value per share	$103.12 CAD	+$4			
Shares Out. (mm)	756				

Multiples (see Appendix)

Canadian National Railway	Statistic	Range			Implied Price per share $		
LTM Book Value per Share	19.38	2.59x	-	6.21x	$70.3	-	$120.4
LTM Diluted EPS Excl. Extra Items	4.83	20.25x	-	28.49x	$97.8	-	$137.6

To create an effective valuation for CN, we need to make major assumptions. This is my 3rd financial model ever created so more value is in my assumptions than the models. I have included a $4 value per share boost based on geo-political considerations.

Forecasting Indicator Assumption

Regarding CN (101.50) compounded revenue growth of 4.4% per year or 180 basis points (1.8%) more than Canadian Pacific and 70 basis points (0.7%) more than the rest of the industry. I expect this trend to continue the near future. The key here is that a CN route serves six major ports in Canada and the US that are critical to GDP. The ports are namely New Orleans, Mobile, Halifax, Montreal, Prince Rupert and Vancouver. Meanwhile Canadian Pacific (its Canadian competitor) has only two ports. Enter railway transfers is critical to understand CSX and CN will transfer of goods between their services as was mentioned in the competitive analysis.

"As the economy improves and profitability increases, larger rail carriers will seek to expand operations" – IBIS World

What the Economy Says

The volumes and pricing are critical elements of CN's performance. The primary export product that CN is involved in transporting is one that cannot be physically moved via pipes i.e. agricultural goods such as wheat, for example. In March 2018, there was over 100 million metric tons anticipated in 2017 2018 which is a 7% increase of a ten-year average and forecasts to further increase in the next coming year. Therefore, I predicted in my models that for the next few years, growth will increase at about 3%; this assumption is critical, I am saying that Canada will not have a major recession in the next few years, although others may disagree.

There is also a snag with Bill C-49 which is targeted at increasing competition and the change will cause the price to increase by roughly 4%. Because of this heavily regulated semi-monopolistic industry, the Canadian government is involved in what is called *maximum revenue entitlement* of rail operators and therefore caps the statutory limit on revenue that can be earned as far as I understand it. Inter-rail competition will increase with Bill C-49 as well as the requirement to invest in recording equipment on trains, which I assume would be low cost. The implications of the Bill are far reaching and not wholly positive from a short-term centred shareholder but will have positive effects as CN adjusts to the new regime.

Projected growth for 2017 2018 is positive, I expect growth to occur as North America continues to grow in the 1 – 4% GDP range. I have expected revenue growth from 10% to 8% to 7% then 6% in the next few years. While I cannot predict future growth accurately, I can be conservative on the future in light of diminishing returns on CAPEX expansions. Basically, we do not have internal access to the company data and strategy and we do not have a full holistic understanding of all the variables that impact the company's performance…of course no one does.

For the *Discounted Cash Flows* model, I learnt in the MBA, I projected a growth rate of 3% according to the World Bank for the GDP growth of the advanced economy but this is in my view "nice and conservative". In particular, understanding the business cycle that wants to swing upwards in aggregate. Most analysts do not have the sophisticated background in political science and economics that I do and therefore are incorrect in their assumptions and projections. While I cannot predict political outcomes, I am consistently better at it than most long-time finance grads.

Operating Expenses Assumptions

CN requires fuel materials, labour and, of course, there are accounting contingencies and concerns around depreciation, purchase services and new infrastructure investment. Predicting the price of oil in the near future is challenging. We can see a current upswing in the oil price however global geo-political events will shift that further. I anticipate that a new Iran deal, for example, will take time therefore this will have indirect impacts on the cost of fuel; reducing demand of fuel pushing CN's volumes up.

Income Tax Assumption

The effective tax rate has varied from 26.5% in 2015 to 26% in 2016 to 24% in 2017 however I am not a tax analyst. Looking back at the last half decade, income tax rates vary between 25 and 27%. As Carl Icahn famously illustrated with Apple's valuation, the true effective tax rate is usually more challenging to determine than at first glance. The company itself forecasts an effective tax rate of 26.5% in 2018. I do anticipate a reduction in the tax rate in the next five years, dependent on the dynamics of the 2019 federal election in Canada.

Net Working Capital Assumption

CN (101.50) in operating working capital over the last five years and working capital will not be a factor; it's possible that CN may have to increase its payables in order to attract new customers which will increase the operating working capital.

Long-Term Assets Assumption

The net long-term assets mainly relate to property plant and equipment. Having looked at the financial statements in depth there is a pension plan of past employees including members of my own family. I expect the pension plan surplus will remain relatively stable overtime with the investments and property plan appointment we are relying on management target of 20% half of which will be going to maintenance of CAPEX which is critical for future profits.

Interest Rates Assumption

If you look at the debt maturity of CN (101.50), they have 21% of its debt (with an average duration of 10 years) that will mature in the next five years. Given the relatively low rate regime experienced over the last few years it is imperative to understand the structure of the forecast (see Appendix). The projected yield curves are 2.8% over 30 years.

Cost of Equity Assumption

The Capital Asset Pricing Model has been used in the respective parameters and assumptions are that the ten-year US treasury bond rate of 2.15% was used as a risk-free rate with a beta of .957. Since we are evaluating our company in the long run we want to consider systematic risk.

Cost of Equity	
Risk-free rate	2.15%
Beta	0.957
Market Risk Premium	6.00%
	7.90%

Thank you for your interest!

Ping me with questions.

APPENDIX

KEY ASSUMPTIONS

Summary of Base Case Assumptions	2017	2018	2019	2020
Revenue Growth	10%	8.00%	7.00%	6.00%
Operating cost as % of revenue	55.77%	55.67%	55.57%	55.47%
Return on Equity	27.25%	27.96%	28.49%	28.64%
Interest Expense (lagged debt i.e. CY INT / op. Debt)	4.09%	3.34%	3.35%	3.52%
Tax rate	26.12%	26.12%	26.12%	26.12%
CAPEX as % of Sales	20%	20%	20%	20%
Depreciation as % of Sales	10%	10%	10%	10%
Payout Ratio	35%	35%	35%	35%

Income Statement - CNR										
For year ended	Dec-12	Dec-13	Dec-14	Dec-15	Dec-16	Dec-17	Dec-18	Dec-19	Dec-20	Dec-21
Revenue	9,920	10,575	12,134	12,611	12,037	13,337	15,071	16,879	18,736	20,797
Operating Expenses	-6,235	-6,702	-7,510	-7,345	-6,725	-7,318	-8,119	-8,924	-9,718	-10,787
Other one-off charges /Income	315	73	107	47	95	-	-	-	-	-
Operating Income	4,000	3,946	4,731	5,313	5,407	6,019	6,952	7,955	9,018	10,010
Interest Expense	-342	-357	-371	-439	-480	-425	-354	-376	-418	-466
Earnings before tax	3,658	3,589	4,360	4,874	4,927	5,594	6,598	7,579	8,599	9,544
Tax	-978	-977	-1,193	-1,336	-1,287	-1,461	-1,723	-1,980	-2,246	-2,493
Net Income	2,680	2,612	3,167	3,538	3,640	4,133	4,874	5,600	6,353	7,051

Balance Sheet - CNR									
For year ended	Dec-12	Dec-13	Dec-14	Dec-15	Dec-16	Dec-17	Dec-18	Dec-19	Dec-20
Operating Working Capital	-334	-56	-127	47	36	54	55	55	56
Net Long-Term Assets	17,675	20,293	21,506	24,780	25,190	26,500	27,850	29,226	30,616
Using the equity approach									
Net Assets	6,323	7,284	7,909	9,877	10,385	9,219	8,092	7,083	6,216
Equity	11,018	12,953	13,470	14,950	14,841	17,335	19,813	22,199	24,456
Net Capital	17,341	20,237	21,379	24,827	25,226	26,554	27,904	29,281	30,672

Company	Ticker	Market Cap $'millions	Shares Outstanding 'Millions	Price per Share ($)	LTM Book Value per share	LTM Diluted EPS Excl. Extra Items	P/B	P/E
Canadian Pacific Railway Limited	TSX:CP	30,067.10	146.7	204.9	32.98	10.02	6.21x	20.45x
Norfolk Southern Corporation	NYSE:NSC	45,307.60	289.8	156.4	57.41	7.72	2.72x	20.25x
CSX Corporation	NasdaqGS:CSX	63,878.30	922.7	69.2	16.78	2.43	4.13x	28.49x
Union Pacific Corporation	NYSE:UNP	116,185.00	807.4	143.9	31.38	6.95	4.59x	20.70x
Kansas City Southern	NYSE:KSU	14,287.00	106.1	134.7	51.93	6.4	2.59x	21.04x
		High					6.21x	28.49x
		Mean					4.05x	22.19x
		Median					4.13x	20.70x
		Low					2.59x	20.25x
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