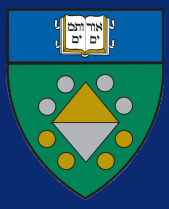
February 14, 2017

US Railway Supplier Industry Outlook



Yale School of Management

Look past downbeat earnings to improved cash flow prospects

We recommend overweight exposure to the US Railway Supplier Industry with a 3 to 5 year investment horizon.

Our preferred valuation yields an industry value of $9,955 million, or 8.2% above the current market price.

The $12,500 million of lease fleet railcars carried at book value on suppliers' balance sheets will generate additional cash flows as they are sold over the next 20 years.

Aggregate industry net income will be $851.1 million for FY 2016, $537.6 million in FY 2017, and $429.6 million in FY 2018.

Railcar deliveries will fall 31.5% to 43,000 in 2017.

Investors wary of volatility should avoid this industry.

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Recommendation: BUY

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Industry Overview

Introduction. The US railway supplier industry consists of over 250 mid- to small-cap manufacturers that produce and service railcars, railcar and locomotive components, and electronic monitoring systems. Most of the larger suppliers, chiefly railcar manufacturers, have diverse operations that span the manufacturing, maintaining, and leasing of railcars.

Coverage Snapshot. Our investment analysis considers five publicly traded railcar manufacturers and lessors that together capture over 92% of American railcar manufacturing as well as nearly 30% of the leasing market.

Exhibit 1: Coverage Snapshot
Dollar amounts in millions

Company	Ticker	Market Cap		Revenue (FY 2015)		P/E Ratio	Dividend Yield
American Railcar Industries, Inc.	ARII	$	904.2	$	889.3	10.42	3.49%
GATX Corporation	GATX	$	2,340.0	$	1,449.9	9.29	2.86%
Greenbrier Companies Inc.	GBX	$	1,290.0	$	2,605.3	10.21	1.88%
FreightCar America	RAIL	$	183.6	$	772.9	7.49	2.46%
Trinity Industries	TRN	$	4,360.0	$	6,392.7	9.05	1.57%

Source: Annual Fillings

Products & Services. Railcar manufacturers produce the following five types of cars.

- **Tank**. Used for petroleum and other liquid products.
- **Hopper.** Coal.
- **Gondola**. Coal.
- **Flat.** Often used to carry **Intermodal** containers that switch between shipping, trucking, and rail.
- **Covered Hopper.** Fertilizer and grain.
- **Box Car.** Used for agricultural products.

Exhibit 2: North American Railcar Fleet by Type
Number of cars in thousands. Note that flat cars often carry intermodal containers.

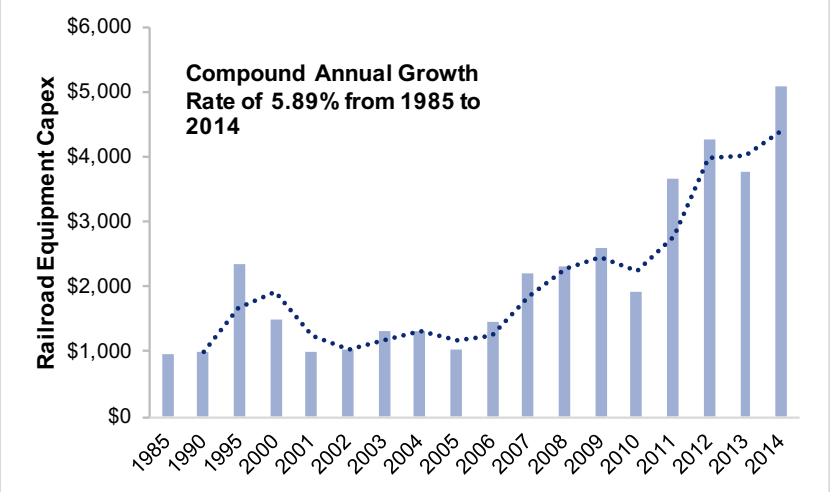
Type of Car	2015	2014	2013	2012	2011	2010
Tank	404	371	339	315	303	300
Hopper	140	142	145	149	154	160
Gondola	224	228	228	232	230	231
Flat	196	193	194	191	193	193
Covered Hopper	519	493	479	479	466	458
Box Car	109	111	114	118	121	124
Other	13	15	14	15	15	15
Total	**1605**	**1553**	**1513**	**1499**	**1482**	**1481**

Source: Railinc.

Railcar Demand. Demand for railcars is ultimately driven by the shipping needs of the railroad industry. Since 1985, railroad expenditures on equipment have growth at an annualized rate of 5.9% while tons originated has grown steadily at 0.7% a year since 1960. Of commodities shipped, coal remains the largest category.

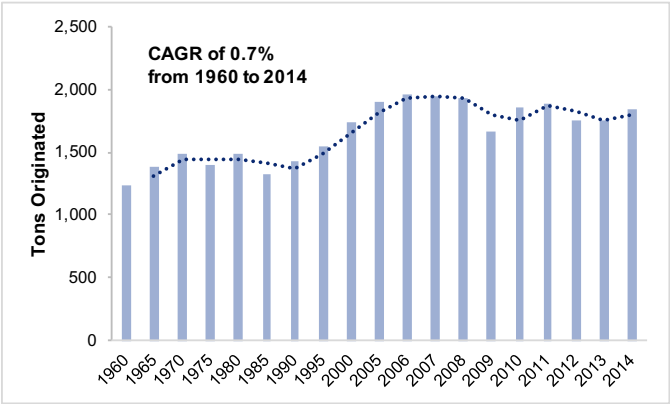
- Note that while coal accounts for 36.8% of industry tonnage, it represents only 17.2% of revenues for railroads.

Exhibit 3: Railroad Capital Expenditures on Equipment
As reported. Dollar amounts in millions.



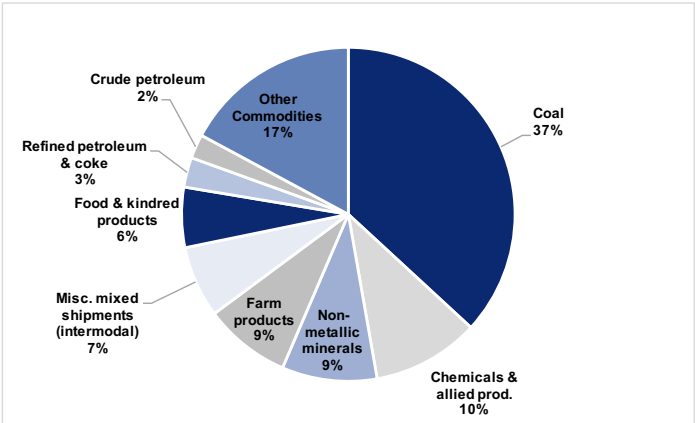
Source: Association of American Railroads (AAR)

Exhibit 4: Railroad Tons Originated
Amounts in millions of tons.



Source: AAR

Exhibit 5: Tons Originated by Commodity
Coal remains the largest single commodity.



Source: AAR

Railcar Ownership. While railroads are the primary end users of railcars, most railcars in North America are owned by separate leasing companies. Many railcar manufacturers have leasing divisions that own, lease, and maintain their manufactured cars.

GATX and **Trinity** (included in our industry coverage) are among the top private owners of railcars. Other notable owners include **TTX, Union Tank Car, Procor Ltd, Wells Fargo Rail, and The CIT Group**.

- TTX Co. is a private leasing company that is collectively owned by leading Class I railroads.
- Union Tank Car Co. & Procor Ltd. are subsidiaries of Marmon Group, which is owned by Berkshire Hathaway.
- Wells Fargo Rail (owned by the bank Wells Fargo) was formerly General Electric Capital Rail Services. Wells purchased the division from GE in September 2015.
- The CIT Group is a publicly traded company that provides commercial and equipment financing to over 15 industries. Rail Financing represented less than 20% of CIT's financing and leasing assets.

Exhibit 6: Railroad and Private Freight Car Ownership
As of June 2016.

Top Railroad Freight Car Ownership	
BNSF Railway Co.	79,686
Union Pacific Railroad	71,944
Norfolk Southern Railway Co	70,888
CSX Transportation	60,102
Canadian National	30,717
Arkansas-Oklahoma Railroad Inc.	22,577
Canadian Pacific	19,797
Northwestern Oklahoma Railroad Co.	13,639

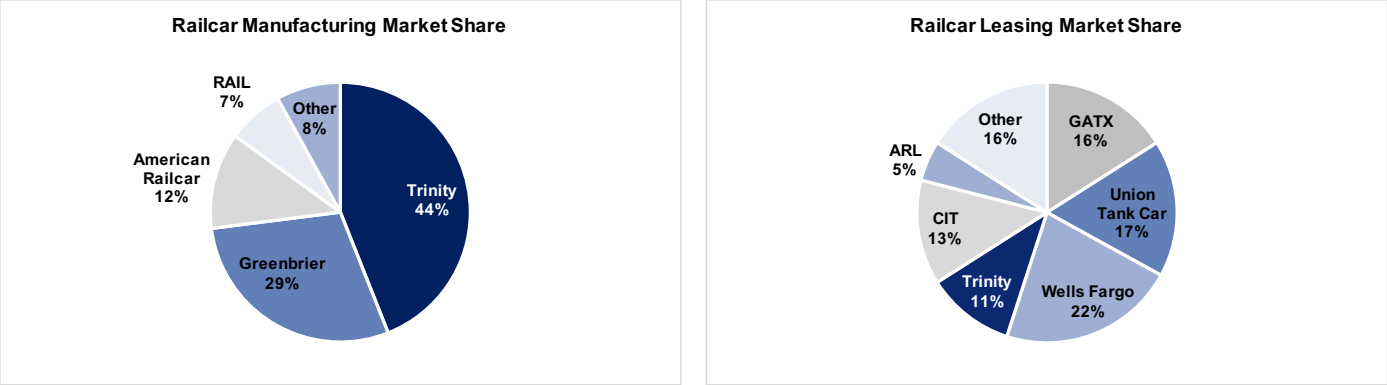
Top Private Frieight Car Ownership	
*Greenbrier Management Services LLC**	259,966
TTX Co.	232,349
Wells Fargo Rail	186,000
GATX Corp. (North American Fleet)	125,000
The CIT Group/Capital Finance	117,000
Union Tank Car Co.	107,051
Trinity Industries Leasing Co.	97,200
Procor Ltd.	29,925
American Railcar Leasing LLC	26,974
Element Rail Finance	20,000

**includes cars manged by GBX for private owners. GBX's own fleet is 8,300.*

Source: AAR

Industry Market Share. Of the five companies in our coverage, Trinity is the only one to have a major foothold in both railcar manufacturing and leasing. The Leasing market is far less concentrated than manufacturing.

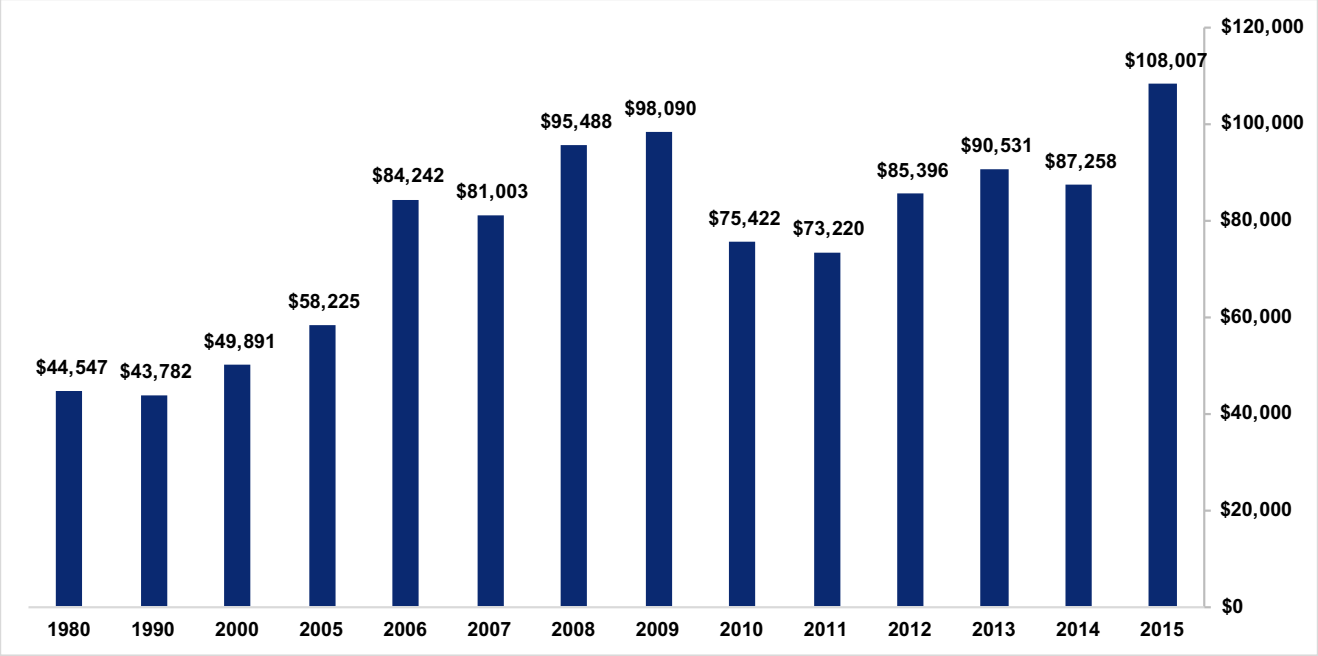
Exhibit 7: Railcar Manufacturing & Leasing Market Share
As of November 2016.



Source: GATX 2016 Investor Presentation

Freight Car Pricing. The price of new freight cars has increased at an annualized rate of 2.6% since 1980, and at an annualized rate of 5.3% since 2000.

Exhibit 8: Average Price of New Freight Cars
Freight Car pricing increased at a 2.6% CAGR from 1980 to 2015.



Source: AAR

Investment Outlook

Current Landscape

Railway suppliers offer attractive multiples compared to the broader market. Though shares have recovered much of their losses from the 2014 to 2016 slide, P/E ratios for many firms remain below 10 compared to an average of 26.1 for the S&P 500. These valuations should attract value-oriented investors with longer time horizons (3 to 5 years).

Consensus analyst estimates predict FY 2016 industry earnings to fall 37% from $ 1,360.0 million to $857.1 million. Falling industry backlog in the aftermath of the crude-by-rail boom are driving this collapse in net income.

Investors wary of volatility should avoid the industry. With an average 3-year beta of 2.31, shares in the coverage group have historically shown wide swings in price as earnings have followed the boom/bust cycle in railcar manufacturing. This industry volatility is what has prompted manufacturers to develop leasing businesses in order to even out year-to-year results.

Our Recommendation

Despite the projected fall in earnings for the next several years, the industry presents an attractive value play for the risk conscious investor. With over $12.5 billion of railcars carried at book value, manufacturers are sitting on fleet assets that can be sold off over the next twenty years to generate cash flows. We believe that the market does not fully appreciate the cash flow potential of these fleet assets and has ascribed too much importance to annual revenue and net income figures.

Our Analysis

For our analysis, we use backlog and railcar delivery forecasts along with consensus estimates to formulate revenue, income, and cash flow projections for FY 2017 and 2018.

We then analyze historical capital expenditures tied to the industry buildup of railcar lease fleets to adjust our cash flow figures for our discounted cash flow valuation.

Our final valuation aims not to calculate the precise intrinsic value of the industry, but rather to demonstrate that under many scenarios with conservative assumptions the industry valuation exceeds the market price. For this reason, we believe an overweight exposure to the industry would be a smart risk for investors to take.

Exhibit 9: Industry Coverage Market Performance

Shares have recovered some of their losses after bottoming in early 2016.

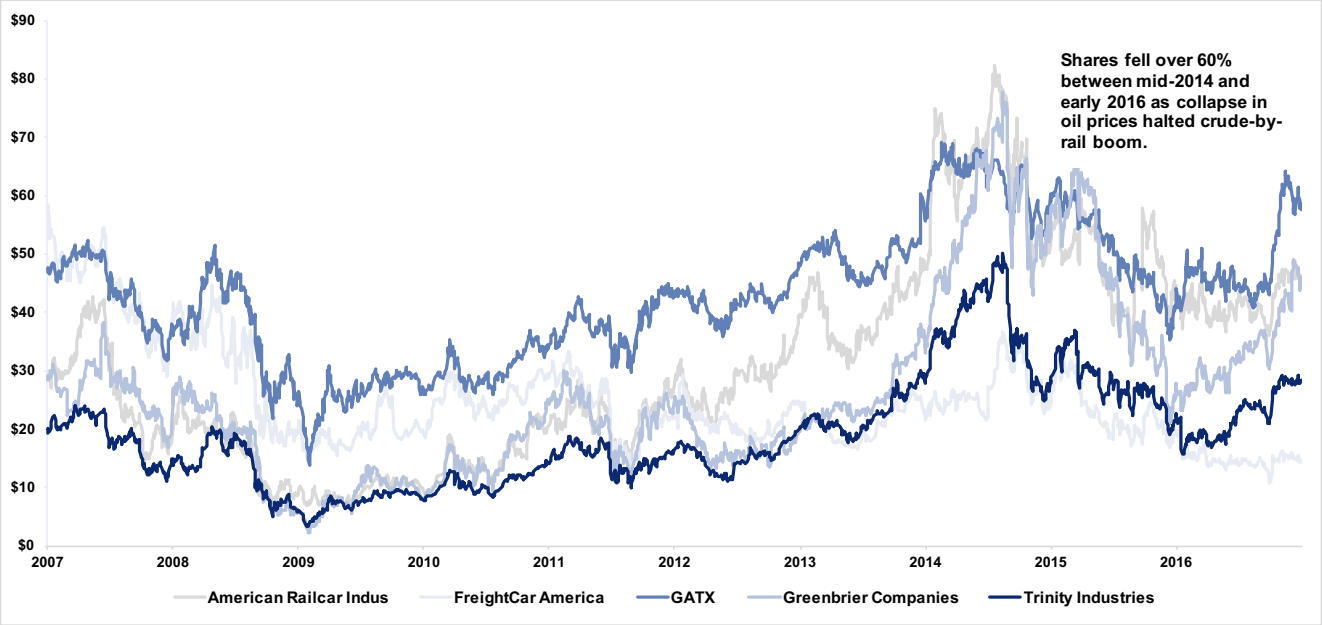
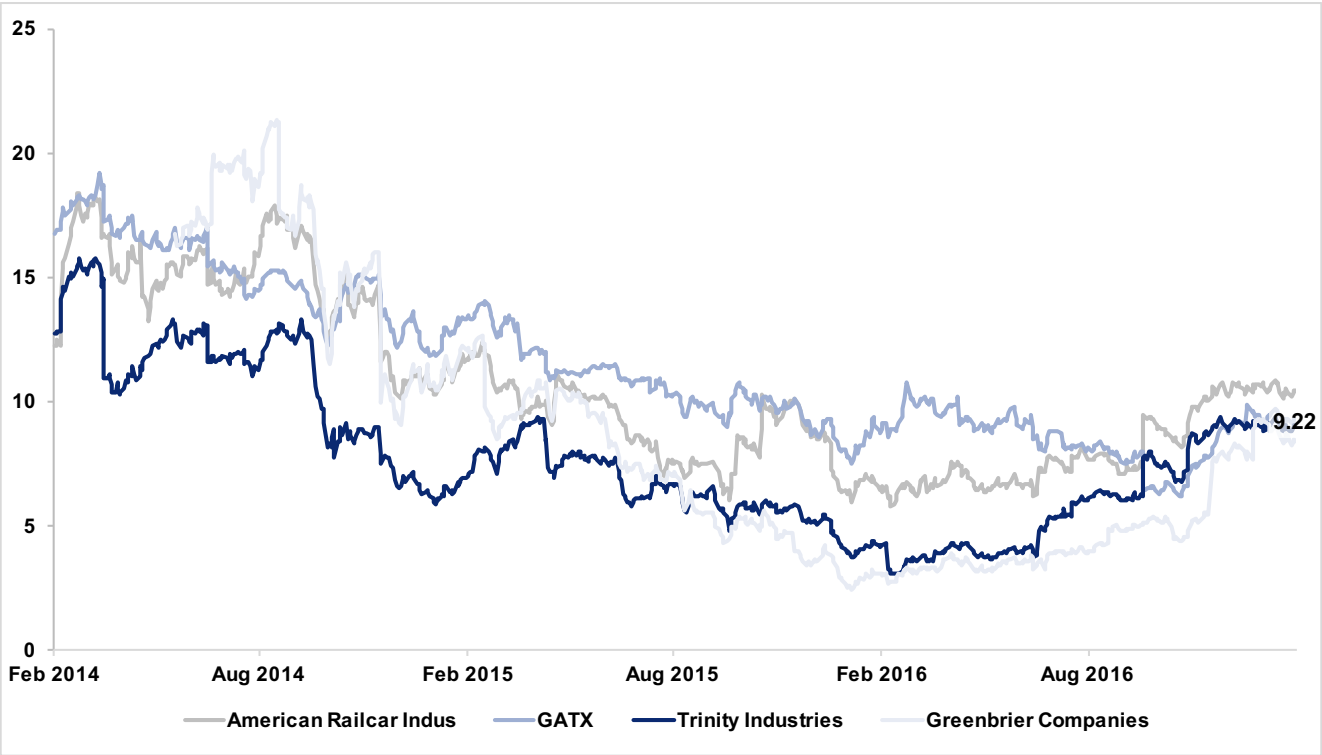


Exhibit 10: Industry Coverage Past P/E Ratios (TTM)

Industry shares appear cheap with P/E ratios below 10 compared to 26.1 for the S&P 500.



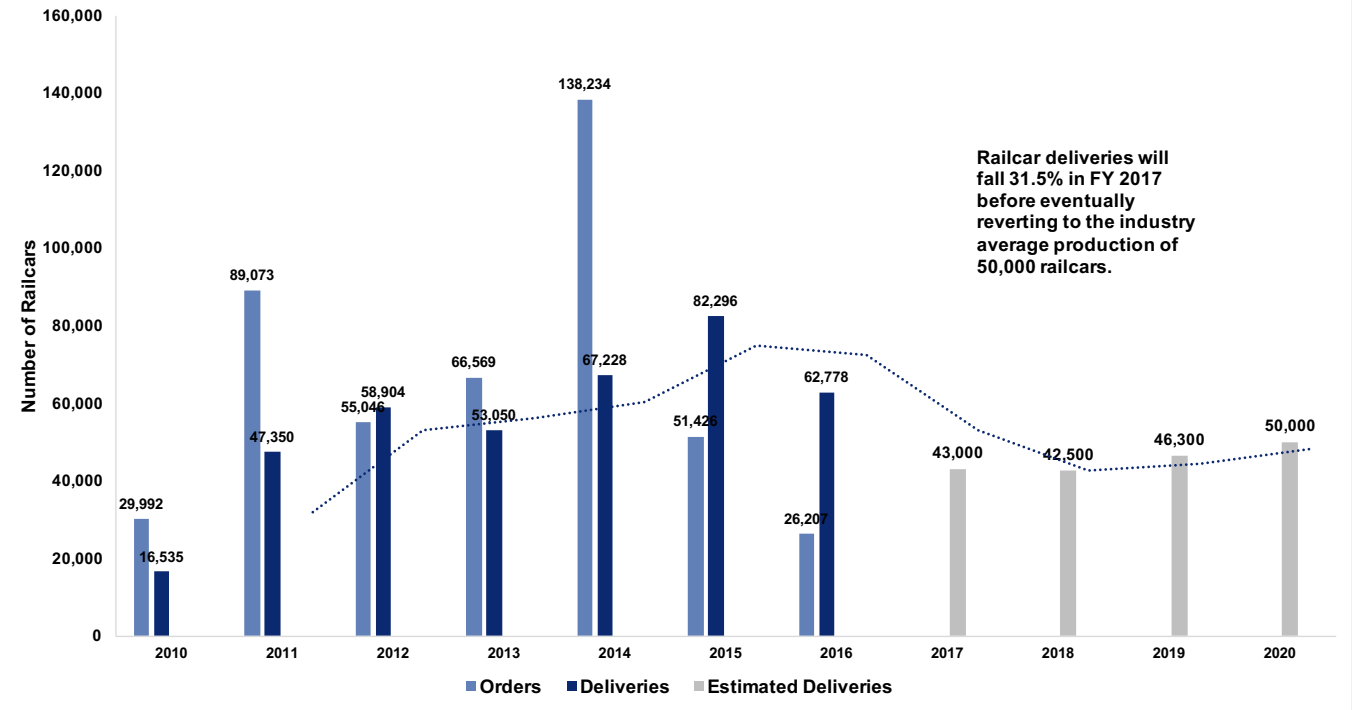
Railcar Delivery Forecast

Railcar deliveries will fall 31.5% to 43,000 in 2017. Deliveries will then revert to the industry average production of 50,000 railcars over the next three years. We rely on the predictions of the Economic Planning Associates which has an impressive track record (see Exhibit 12) of predicting future deliveries.

Industry earnings will be fully impacted by declining demand in FY 2017. Previously, high backlog left over from the 2011-2014 boom shielded manufacturers' bottom lines.

Exhibit 11: Railcar Delivery Estimates

Railcar deliveries will be 43,000 in 2017, 42,500 in 2018, 46,300 in 2019, and 50,000 in 2020.



Source: Progressive Railroading

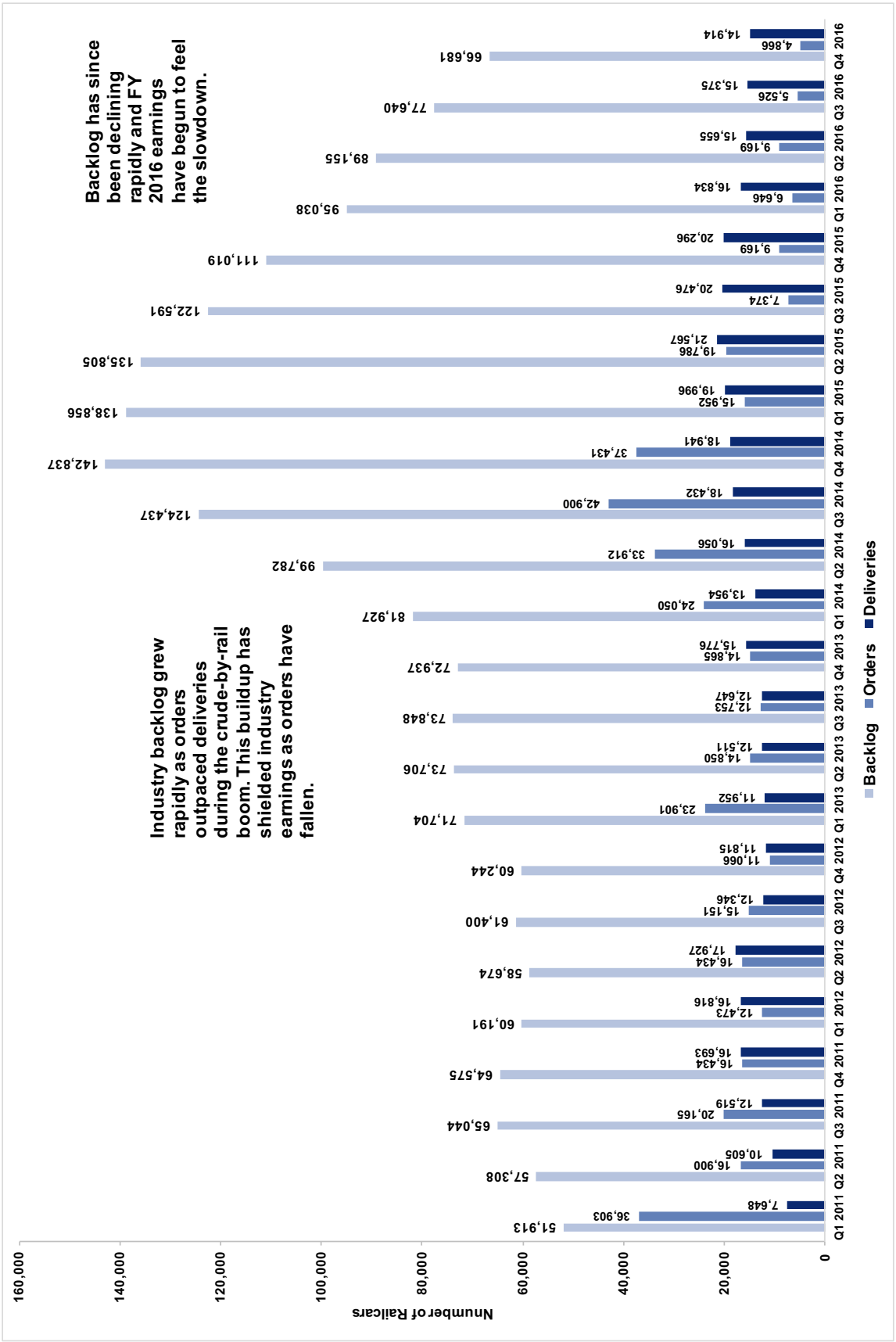
Exhibit 12: Economic Planning Associates (EPA) Prediction Record

Note that while 1 year predictions are impressive, predictions for two or more years out were less accurate.

	2016	2015	2014	2013	2012
Deliveries	62,778	82,296	67,228	53,050	58,904
EPA Forecast	61,800	85,000	62,300	50,500	58,000
Difference	978	-2,704	4,928	2,550	904
Margin	*1.6%*	*-3.2%*	*7.9%*	*5.0%*	*1.6%*

Source: Progressive Railroading

Exhibit 13: Industry Backlog, Orders, and Deliveries
The industry slowdown will be fully reflected in FY 2017 earnings as backlog is quickly exhausted.



Industry Revenue, Net Income & Cash Flow Projections

Projections

- **Aggregate industry net income will be $851.1 million for FY 2016, $537.6 million in FY 2017, and $429.6 million in FY 2018.**
- **Revenues will be $9,828.6 million for FY 2016, $8,057.3 million in FY 2017, and $7,456.5 million in FY 2018.**
- **Free Cash Flow (calculated as Cash Flow from Operations minus Capital Expenditures) will be $(64.9) for FY 2016, $253.8 million in FY 2017, and $71.2 million in FY 2018.**

These projections were calculated by summing the consensus analyst estimates for each of the five companies in the coverage group.

Discussion

Although net income is forecasted to fall 49.5% between FY 2016 and FY 2018, free cash flow is expected to improve as firms cut back on capital expenditures tied to their lease fleet purchases.

Reduction in industry debt levels would negatively impact these cash flow projections. Nominal debt levels have increased $4,126 million to $8,276 million since 2007. We do not anticipate any near term reduction in industry debt levels.

Exhibit 14: Aggregate Industry Financials and Projections

The pullback in capital expenditures will offset the drop in earnings on industry free cash flow. Dollar amounts in millions.

	2018E	2017E	2016E	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001
Revenue	$ 7,456.5	$ 8,057.3	$ 9,828.6	$ 12,110.1	$ 11,156.5	$ 8,483.7	$ 8,252.0	$ 6,379.4	$ 4,217.4	$ 5,419.1	$ 8,171.2	$ 7,917.8	$ 7,492.7	$ 6,596.2	$ 4,996.2	$ 3,469.3	$ 3,348.8	$ 3,398.6
Operating Income	$ 941.8	$ 1,105.4	$ 1,650.0	$ 2,458.7	$ 1,986.0	$ 1,189.8	$ 1,087.3	$ 739.2	$ 493.1	$ 300.0	$ 1,082.6	$ 1,090.6	$ 950.8	$ 348.8	$ 263.5	$ 45.9	$ 11.8	$ 27.3
Net Non-Operating Interest Income Expense				$ (378.7)	$ (374.8)	$ (357.9)	$ (397.4)	$ (399.7)	$ (68.4)	$ (344.6)	$ (261.8)	$ (191.9)	$ -	$ -	$ -	$ -	$ -	$ (19.2)
Net Income	**$ 429.6**	**$ 537.6**	**$ 857.1**	**$ 1,359.9**	**$ 1,100.6**	**$ 601.4**	**$ 534.1**	**$ 268.7**	**$ 112.7**	**$ (92.3)**	**$ 538.0**	**$ 582.5**	**$ 545.3**	**$ 162.3**	**$ 158.1**	**$ 57.4**	**$ (57.9)**	**$ 133.9**
Capital Expenditures	$ 1,029.3	$ 1,062.1	$ 1,759.6	$ 2,082.1	$ 1,889.6	$ 1,737.3	$ 1,541.4	$ 923.8	$ 824.9	$ 896.7	$ 2,012.8	$ 1,715.2	$ 853.5	$ 949.6	$ 957.9	$ 941.7	$ 1,088.1	$ 1,044.4
Reconciled Depreciation	$ 710.9	$ 701.1	$ 698.9	$ 670.6	$ 616.3	$ 558.5	$ 517.7	$ 495.5	$ 477.1	$ 454.8	$ 419.1	$ 371.2	$ 308.3	$ 410.2	$ 323.2	$ 425.2	$ 465.8	$ 481.8
Balance	*$ 318.3*	*$ 361.0*	*$ 1,060.6*	*$ 1,411.5*	*$ 1,273.3*	*$ 1,178.8*	*$ 1,023.6*	*$ 428.3*	*$ 347.7*	*$ 441.9*	*$ 1,593.7*	*$ 1,344.0*	*$ 545.2*	*$ 539.4*	*$ 634.7*	*$ 516.4*	*$ 622.3*	*$ 562.6*
Cash from Operations	$ 1,100.5	$ 1,315.8	$ 1,694.6	$ 1,865.2	$ 1,535.1	$ 1,364.5	$ 1,188.0	$ 441.5	$ 402.5	$ 1,180.7	$ 836.9	$ 784.2	$ 647.8	$ 540.7	$ 183.0	$ 549.6	$ 559.9	$ 1,502.0
Capital Expenditures	$ (1,029.3)	$ (1,062.1)	$ (1,759.6)	$ (2,082.1)	$ (1,889.6)	$ (1,737.3)	$ (1,541.4)	$ (923.8)	$ (824.9)	$ (896.7)	$ (2,012.8)	$ (1,715.2)	$ (1,587.2)	$ (949.6)	$ (957.9)	$ (941.7)	$ (1,088.1)	$ (1,044.4)
Free Cash Flow*	**$ 71.2**	**$ 253.8**	**$ (64.9)**	**$ (217.0)**	**$ (354.5)**	**$ (372.8)**	**$ (353.3)**	**$ (482.2)**	**$ (422.3)**	**$ 284.0**	**$ (1,175.9)**	**$ (931.1)**	**$ (939.4)**	**$ (408.9)**	**$ (774.9)**	**$ (392.1)**	**$ (528.2)**	**$ 457.5**
Sale of Property, Plant & Equipment				$ 1,012.8	$ 567.3	$ 520.7	$ 501.1	$ 302.7	$ 162.6	$ 397.4	$ 413.6	$ 776.9	$ 261.4	$ 243.2	$ 591.6	$ 275.6	$ 46.5	$ 236.0
Net Divestitures (Acquisitions)				$ (28.6)	$ (712.3)	$ (66.5)	$ (46.2)	$ (42.7)	$ (71.2)	$ (35.8)	$ (89.7)	$ (319.2)	$ (20.7)	$ -	$ (15.7)	$ (7.6)	$ (1.4)	$ (165.3)
Other (Items from GATX Investing Cash Statement)				$ (115.2)	$ (138.9)	$ (39.7)	$ 102.3	$ (135.1)	$ 39.4	$ (21.0)	$ (68.0)	$ 3.5	$ (244.3)	$ 222.4	$ 124.7	$ -	$ -	$ -
Adjusted Free Cash Flow				**$ 652.0**	**$ (638.4)**	**$ 41.7**	**$ 203.9**	**$ (357.3)**	**$ (291.5)**	**$ 624.6**	**$ (920.0)**	**$ (469.9)**	**$ (741.7)**	**$ 56.7**	**$ (51.3)**	**$ (106.7)**	**$ (276.0)**	**$ 832.5**
Cash and Short Term Investments				$ 1,654.3	$ 1,607.3	$ 1,337.1	$ 1,218.9	$ 1,058.8	$ 1,069.9	$ 1,278.8	$ 693.5	$ 915.7	$ 964.9	$ 405.6	$ 276.0	$ 354.9	$ 334.2	$ 323.9
Total Current Assets				$ 4,484.4	$ 4,464.2	$ 3,691.0	$ 3,445.2	$ 3,214.5	$ 2,586.1	$ 2,505.4	$ 2,874.8	$ 2,856.2	$ 2,941.4	$ 2,008.2	$ 1,788.0	$ 1,681.4	$ 2,171.4	$ 2,540.7
Total Assets				$ 19,507.7	$ 18,710.0	$ 16,396.1	$ 15,308.2	$ 14,329.4	$ 13,240.3	$ 11,911.0	$ 12,422.0	$ 10,851.8	$ 9,705.8	$ 8,996.0	$ 8,879.8	$ 8,965.1	$ 9,248.5	$ 8,853.1
Non-Current Portion of Long Term Debt				$ 8,276.1	$ 8,436.1	$ 7,390.3	$ 7,038.3	$ 7,180.5	$ 6,700.4	$ 5,198.2	$ 4,921.9	$ 4,150.0	$ 3,775.9	$ 3,577.4	$ 3,852.4	$ 3,973.6	$ 4,865.3	$ 4,512.9
Change in Non-Current Portion of LTD				$ (160.1)	$ 1,045.8	$ 352.0	$ (142.2)	$ 480.1	$ 1,502.2	$ 276.3	$ 771.9	$ 374.1	$ 198.5	$ (275.0)	$ (121.2)	$ (891.7)	$ 352.5	
Total Liabilities				$ 13,069.3	$ 13,194.6	$ 11,532.3	$ 10,998.4	$ 10,469.2	$ 9,575.5	$ 8,236.6	$ 8,605.2	$ 7,243.0	$ 6,466.0	$ 6,484.3	$ 6,548.8	$ 6,972.1	$ 7,249.9	$ 6,746.9
Shareholders Equity				**$ 6,438.3**	**$ 5,515.4**	**$ 4,863.7**	**$ 4,309.8**	**$ 3,860.2**	**$ 3,664.8**	**$ 3,674.4**	**$ 3,816.8**	**$ 3,608.9**	**$ 3,239.8**	**$ 2,511.7**	**$ 2,331.0**	**$ 1,993.0**	**$ 1,997.6**	**$ 2,106.2**
Net Profit Margin				**11.2%**	**9.9%**	**7.1%**	**6.5%**	**4.2%**	**2.7%**	**-1.7%**	**6.6%**	**7.4%**	**7.3%**	**2.5%**	**3.2%**	**1.7%**	**-1.7%**	**3.9%**
Long Term Debt to Equity				**128.5%**	**153.0%**	**151.9%**	**163.3%**	**186.0%**	**182.8%**	**141.5%**	**129.0%**	**115.0%**	**116.5%**	**142.4%**	**165.3%**	**199.4%**	**243.6%**	**214.3%**
Return on Average Equity				**22.8%**	**21.2%**	**13.1%**	**13.1%**	**7.1%**	**3.1%**	**-2.5%**	**14.5%**	**17.0%**	**19.0%**	**6.7%**	**7.3%**	**2.9%**	**-2.8%**	

Our Adjustments

The astute reader may have noticed that free cash flow for the industry was negative from 2001 to 2015. Over the past fifteen years the total "free" cash flow for the coverage group was in fact $(6,611.2) million, or an average of $(440.7) million per year. Meanwhile, average net income was $400.3 million over the same period.

The large gap between net income and free cash flow arrises from two main factors:

1. **The accounting treatment of "Sales of Railcars Available for Lease"**
2. **Firms reinvesting funds to buy railcars and build up railcar lease fleets**

A Word on Industry Accounting

A simple cash flow calculation of Cash from Operations minus Capital Expenditures ignores the critical "Sales of Railcars Available for Lease" item present in most firm financial statements.

Firms in the industry year after year sell cars in their lease fleets, but these sales are treated as disposal of Property, Plant & Equipment since the cars in the fleet are treated as long-term assets as opposed to manufactured cars which count towards revenues.

From the 2015 10-K for RAIL:

"The Company recognizes revenue from the sale of Railcars Available for Lease on a net basis as Gain (Loss) on Sale of Railcars Available for Lease since the sale represents the disposal of a long-term operating asset."

Sales of railcars available for lease totaled $1,012.8 million for the coverage group in 2015. We add this figure back to our initial free cash flow value.

We also subtract cash used for acquisitions (treating it as expenditures necessary to maintain earnings power) and subtract some miscellaneous items from the GATX investing cash flow statement.

Using these adjustments, we arrive at our **Adjusted Free Cash Flow.**

Our adjusted free cash flow totaled $(1,441.4) million from 2001 to 2015, or $(96.1) million per year on average.

Lease Fleet Buildup

From 2011 to 2015, firms in the coverage group spent $3,753.8 million collectively on lease fleet additions. These capital expenditures are purely discretionary, but constitute a significant component of railcar demand over this period.

Lease additions by firm reveal that Trinity Industries is driving much of the additions, reflecting 70% of spending in 2015.

Exhibit 15: Lease Fleet Additions
As reported. Dollar amounts in millions.

	2015	2014	2013	2012	2011
ARII	$ 211.6	$ 307.7	$ 162.1	$ 185.9	$ 29.4
GATX	$ 118.4	$ 150.5	$ 61.4	$ 1.3	$ 61.1
GBX	$ 12.2	$ 5.4	$ 16.3	$ 73.3	$ 44.1
RAIL	$ 14.8	$ 11.0	$ 15.8	$ -	$ -
TRN	$ 833.8	$ 245.3	$ 581.1	$ 352.6	$ 258.6
Total	**$ 1,190.8**	**$ 719.9**	**$ 836.8**	**$ 613.1**	**$ 393.2**

Source: Annual Fillings

These additions have left firms in the coverage group with $12,347.2 (book value) of railcars sitting on their balance sheets.

We calculate the average book value of each car to be $51,107 using company-provided counts of railcars in their lease fleets.

Exhibit 16: Book Value of Railcar Lease Fleet by Firm
Dollar amounts in millions except per car figures. The aggregate book value of the coverage group lease fleet is $12,347.2 million.

	ARII	GATX	GBX	RAIL	TRN	Total
Cars Owned in Lease Fleet	10,000	125,000	8,900	*495*	97,200	**241,595**
Reported Book Value of Fleet	$ 848.7	$ 5,968.4	$ 451.2	$ 24.7	$ 5,054.2	**$ 12,347.2**
Book Value per car	$ 84,872	$ 47,747	$ 50,696	*$ 50,000*	$ 51,998	**$ 51,107**

Source: Annual Fillings

Valuation

Methodology

For our valuation we construct a discounted cash flow (DCF) model that calculates the present value of future cash flows for the next 50 years.

Rather than continuing to invest surplus flows into the industry, we take a conservative "liquidation" approach and assume that companies will slowly sell and thereby "shed" their lease fleets over the next 20 years.

While we do not believe firms will begin shedding their fleets immediately, we do see the lease fleet buildup leveling off. Therefore, if capital expenditure spending falls (as we predict), the assumption that sales of used railcars will range from $400-500 million is no far cry given 2012 to 2015 lease fleet sales averaged $650.5 million. The net result is a steady decline in railcar manufacturers' lease fleets, generating cash flows that are added to the initial cash flows ("balance" in Exhibit 18).

The largest seller of these railcars would be Trinity Industries who has been able to sell lease fleet cars at considerable profits above book value.

Exhibit 17: Trinity Industries Historical Profit Margin on Lease Fleet Sales
Dollar amounts in millions except per car figures. The aggregate book value of the coverage group lease fleet is $12,347.2 million.

	2015	2014	2013
Proceeds from railcar lease fleet sales owned more than one year at the time of sale	$ 514.6	$ 265.8	$ 131.6
Net gains on railcar lease fleet sales owned more than one year at the time of sale	$ 166.1	$ 92.3	$ 20.4
Calculated Book Value (Proceeds Minus Gains)	$ 348.50	$ 173.50	$ 111.20
Profit Margin on Sales of Lease Fleet	47.7%	53.2%	18.3%

Source: Annual Fillings

For the cash flows from year 3 to 50, we start with an average net income figure and assume a constant growth rate. We assume constant depreciation and capital expenditures (i.e. the gap between capex spending and yearly depreciation expense remains constant).

Results

There are four major variables that lead to largest changes in valuation:

1. **Year 3 Net Income.** We believe a conservative estimate is the 2007-2015 average net income.
2. **Value per Lease Fleet Railcar.** We believe a safe estimate is $55,000 per car, or a 6.9% premium to book value.
3. **Earnings Growth.** Assume the industry keeps pace with GDP growth of 2%.
4. **Discount Rate.** We use 6.67%, but encourage the reader to select the rate he or she sees fit.

Our preferred assumptions yield an industry valuation of $9,955 million, or $755 million above the current market capitalization of $9,200 million. Note that this valuation does not try to pinpoint the intrinsic value of the industry. Instead we argue that by making rather conservative estimates, we leave ourselves with a considerable margin of safety. If the central value exceeds the market value given our generous margin of safety, there's a good chance that increasing our industry allocation is a wise investment.

Exhibit 18: Valuation Using Our Preferred Assumptions

Dollar amounts in millions except per car figures. Cash flows continue until 2066 (50 years).

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Net Income	$ 537.6	$ 429.6	$ 556.2	$ 567.3	$ 578.7	$ 590.2	$ 602.0	$ 614.1	$ 626.4	$ 638.9	$ 651.7	$ 664.7	$ 678.0	$ 691.6
Depreciation	$ 701.1	$ 710.9	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0
Capital Expenditures	$ (1,062.1)	$ (1,029.3)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)
Balance	$ 176.5	$ 111.2	$ 246.2	$ 257.3	$ 268.7	$ 280.2	$ 292.0	$ 304.1	$ 316.4	$ 328.9	$ 341.7	$ 354.7	$ 368.0	$ 381.6

Starting Fleet	240,000	**Ending Fleet**	85,000		*Average Net Income over Select Time Periods*	
Book Value	$ 12,350.0	**Value of Fleet**	$ 13,200		*2011-2015*	$ *772.9*
Book Value per Car	$ 51,458	**Value per Car**	$ 55,000	**Profit Margin** 6.9%	*2007-2015*	$ *556.2*
					2001-2015	$ *400.3*
CHANGE IN DEBT	$ (1,000)	Sales per year	7,750			

Fleet Sales	$ 426	$ 426	$ 426	$ 426	$ 426	$ 426	$ 426	$ 426	$ 426	$ 426	$ 426	$ 426	$ 426	$ 426
Debt Payoff	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)
Cash Flows	$ 583	$ 517	$ 652	$ 664	$ 675	$ 686	$ 698	$ 710	$ 723	$ 735	$ 748	$ 761	$ 774	$ 788

EARNINGS GROWTH	2.00%													
DISCOUNT RATE	6.67%													
Present Value	$ 546.4	$ 454.8	$ 537.6	$ 512.5	$ 488.7	$ 466.0	$ 444.4	$ 423.8	$ 404.1	$ 385.4	$ 367.6	$ 350.6	$ 334.5	$ 319.0

CENTRAL VALUE	$	9,955
MARKET PRICE	$	9,200
BALANCE	$	755

To illustrate the interaction of the different variables, we provide two more valuation results. The first (Exhibit 19) supposes industry earnings after 2019 do not reach 2017 levels for nine years, a rather pessimistic view. If manufacturers can sell fleet cars at a 16.6% premium to book value, then the valuation matches the current market price.

Exhibit 19: Valuation Using Bad Earnings But Better Sales & Growth

Dollar amounts in millions except per car figures. Cash flows continue until 2066 (50 years).

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Net Income	$ 537.6	$ 429.6	$ 450.0	$ 461.3	$ 472.8	$ 484.6	$ 496.7	$ 509.1	$ 521.9	$ 534.9	$ 548.3	$ 562.0	$ 576.0	$ 590.4
Depreciation	$ 701.1	$ 710.9	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0
Capital Expenditures	$ (1,062.1)	$ (1,029.3)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)
Balance	$ 176.5	$ 111.2	$ 140.0	$ 151.3	$ 162.8	$ 174.6	$ 186.7	$ 199.1	$ 211.9	$ 224.9	$ 238.3	$ 252.0	$ 266.0	$ 280.4

Starting Fleet	240,000	**Ending Fleet**	85,000		*Average Net Income over Select Time Periods*	
Book Value	$ 12,350.0	**Value of Fleet**	$ 14,400		*2011-2015*	$ *772.9*
Book Value per Car	$ 51,458	**Value per Car**	$ 60,000	**Profit Margin** 16.6%	*2007-2015*	$ *556.2*
					2001-2015	$ *400.3*
CHANGE IN DEBT	$ (1,000)	Sales per year	7,750			

Fleet Sales	$ 465	$ 465	$ 465	$ 465	$ 465	$ 465	$ 465	$ 465	$ 465	$ 465	$ 465	$ 465	$ 465	$ 465
Debt Payoff	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)
Cash Flows	$ 622	$ 556	$ 585	$ 596	$ 608	$ 620	$ 632	$ 644	$ 657	$ 670	$ 683	$ 697	$ 711	$ 725

EARNINGS GROWTH	2.50%													
DISCOUNT RATE	6.67%													
Present Value	$ 582.7	$ 488.8	$ 482.0	$ 460.5	$ 440.1	$ 420.6	$ 402.0	$ 384.3	$ 367.4	$ 351.2	$ 335.8	$ 321.2	$ 307.1	$ 293.8

CENTRAL VALUE	$	9,215
MARKET PRICE	$	9,200
BALANCE	$	15

Conclusion

Our last valuation is simply what happens if we are wrong. This valuation is intended to illustrate the potential downside of our investment recommendation. A higher discount rate, lower growth, and moderate lease fleet sales lead to valuation 16.4% below the current market price.

Exhibit 20: A Valuation with Higher Discount Rate, Low Growth, and Moderate Sales
Dollar amounts in millions except per car figures. Cash flows continue until 2066 (50 years).

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Net Income	$ 537.6	$ 429.6	$ 556.2	$ 564.5	$ 573.0	$ 581.6	$ 590.3	$ 599.2	$ 608.2	$ 617.3	$ 626.6	$ 636.0	$ 645.5	$ 655.2
Depreciation	$ 701.1	$ 710.9	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0	$ 700.0
Capital Expenditures	$ (1,062.1)	$ (1,029.3)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)	$ (1,010.0)
Balance	$ 176.5	$ 111.2	$ 246.2	$ 254.5	$ 263.0	$ 271.6	$ 280.3	$ 289.2	$ 298.2	$ 307.3	$ 316.6	$ 326.0	$ 335.5	$ 345.2

Starting Fleet	240,000	Ending Fleet	100,000	
Book Value	$ 12,350.0	Value of Fleet	$ 13,800	
Book Value per Car	$ 51,458	Value per Car	$ 57,500	
CHANGE IN DEBT	$ (1,000)	Sales per year	7,000	

Profit Margin	11.7%			

Average Net Income over Select Time Periods

2011-2015	*$ 772.9*	*2005-2010*	*$ 308.1*
2007-2015	*$ 556.2*	*2001-2010*	*$ 214.0*
2001-2015	*$ 400.3*	*2001-2005*	*$ 90.7*

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Fleet Sales	$ 403	$ 403	$ 403	$ 403	$ 403	$ 403	$ 403	$ 403	$ 403	$ 403	$ 403	$ 403	$ 403	$ 403
Debt Payoff	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)	$ (20)
Cash Flows	$ 559	$ 494	$ 629	$ 637	$ 646	$ 654	$ 663	$ 672	$ 681	$ 690	$ 699	$ 708	$ 718	$ 728

EARNINGS GROWTH	1.50%
DISCOUNT RATE	8.00%

Present Value	$ 517.6	$ 423.3	$ 499.1	$ 468.2	$ 439.3	$ 412.2	$ 386.8	$ 362.9	$ 340.5	$ 319.5	$ 299.8	$ 281.3	$ 264.0	$ 247.7

CENTRAL VALUE	$ 7,690
MARKET PRICE	$ 9,200
BALANCE	$ (1,510)

Conclusion.

We close on a pessimistic valuation not to dampen the mood, but to underscore the investment argument that we are making. We believe our valuation of the railcar industry has taken several measures to ensure an adequate margin of safety. These include:

- **"Liquidation" of lease fleet rather than internal compounding,**
- **only 50 years of cash flows,**
- **growth that tracks GDP,**
- **average starting net income,**
- **and a decreasing debt level.**

In face of these conservative assumptions, our preferred valuation yields a central value 8.2% above the market price.

Therefore, we believe an overweight exposure to the industry would be a smart risk for investors to take.

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