Rail Renaissance?
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This is why I believe the “rail renaissance” has been a cyclical move, not secular. This will take a few paragraphs or pages, but to introduce my conclusions:

(1) The rails didn’t take off until the Fed started to juice the economy in 2003. Industry consolidation that had been taking place since the middle of the 19th century, culminating in the late 1990s, is frequently cited as the reason for the move. I disagree. They didn’t move until the Fed stomped on the gas pedal and emerging markets demand for heavy goods exploded.

(2) The commodity cycle imploding and the dollar normalizing will hurt the rails and they already have.

(3) If the class I railroads insist on taking core pricing in excess of inflation, they will invite upon themselves a regulatory response. Their customers are in a near Depression and the railroads are taking huge chunks of their profits. Taking pricing in a commodity upturn is easy. In a downturn, the rails are exposing themselves to a reaction in causing pain for their customers.

(4) Industrial sectors exhibiting full cycles of 15-30 years have half-lives spanning a huge chunk of people’s careers on the Street. What seems secular, just because its natural life overlaps with a huge portion of one’s career, is often cyclical.

(5) Rail volumes have not grown in the last ten years. They have not taken share from trucking.

(6) Buffett didn’t buy BNSF because rails haul a ton of freight 500 miles on a gallon of diesel, in my opinion. That’s certainly true, but that’s like saying the Bulls won five championships due to their second string guard. Buffett bought it because it has monopoly / duopoly characteristics.

I also believe, were I Buffett, I would have bought BNSF to hedge Berkshire, which was negatively exposed to inflation due to its underwriting liabilities.

(7) The cash flow characteristics of rails make these expensive assets now, not cheap.

¹ Charlotte Lane is a pre-launch liquid long / short equity-focused strategy. Managed by Dale Wettlaufer, a veteran investor whose career includes 11 years as analyst, sector head, and PM at Legg Mason Capital Management, the strategy is emerging from a larger group in 2015.

Charlotte Lane has a flexible mandate with regard to market exposure. The Fund has been net short (19%) on average since Q1 2014 inception. The Fund’s strategy is scalable, with a weighted average long market cap of $39B and a weighted average short market cap of $82B. Since inception, average gross exposure has been 176%.
(8) Fuel surcharge benefits to the P&L over the last ten years have been extractive and may have no duration left. Underlying this phenomenon, a nasty loss of fixed cost suspension is already underway.

The year is 2006 and I was doing lots of work on transports. The housing bust was getting started and truckers were getting hammered. Driving from one destination to the next in rural Missouri, Kansas, and Arkansas that spring, I was getting the full complement of old-line truckers with one fantastic visit to JB Hunt (JBHT). Understanding the sector was pretty bad, I knew I was playing with fire (the value investor’s lot in life), but the JB Hunt connection with BNSF was really interesting, so I started to do work on the rails.

My first target was NSC. My original take on it was no-go, but I continued to think about it and then made the trip down to Norfolk early that summer to get the full Wick Moorman and Jim Squires treatment. Sitting there in the reception area of the executive offices, I eyed from my Anthony Hay side chair a beautiful 18th century tall case clock. Behind me hung an incredible Hudson River School painting (or some lovely Realist work), which may have been a Thomas Cole. In other words, this corporation had been accumulating an array of beautiful assets for probably 150 years, not all of which were ferrous.

I soon thereafter wrote it up as a buy recommendation. The commodity cycle was still raging and it was easy to see the pricing power and operating leverage that existed there. NSC was the cheapest at the time (BTW, I mistyped NSC as “BSC” and got the chills) and had improvability to it, so I was in.

As I climbed the learning curve, I began to see the geographic appeal of the Western rails, and reflecting upon what I learned from visiting JBHT and covering the truckers, I began to see the wisdom in paying up for BNSF. I wrote that up in 2007 and as I was editing the report, news emerged that Buffett was in BNI. I’m fine being in the same names as well as being on the other side of the big man when I see it differently, but no Buffett student minds when his investment predates the master’s (as NSC had and which, in this case, BNSF didn’t, but I was confident I wasn’t doing follow-the-leader). I say all of this to set the scene and establish I was once a rail long and I liked them.

Where I Began to Question the Cyclicality Sometime in late 2007 or 2008, Kiril Sokoloff at 13-D Research published a report mentioning the CRB Raw Industrials index (or CRB RIND), which is an index of commodities that are not publicly traded and are therefore not pushed around by futures markets and money flows. My best friend in the business, Ian McDonald, overlaid the CRB RIND vs. the S&P 500 Rails index and told me about the strong relationship he saw there. The overlay was nearly perfect. In meetings with the managements of two class I railroads, I asked why that might be. I could also show a negative correlation between the dollar index and the rails. Neither management team could answer very clearly, if at all.

It always makes me dig deeper when a management team can’t answer a macro question when they’re macro-exposed (often when this is the case, I think they don’t believe they’re macro-exposed). For instance, we owned the homebuilders in 2005-2006 and I could never get a good answer from management teams to the question, “What’s the real return to a home owner from holding residential real estate?” Not satisfied with what I heard and being intrigued by these exceedingly strong relationships, I began to look into it further.
Here is the CRB RIND vs. S5RAIL index chart I showed them.

Exhibit 1: CRB Raw Industrials Index vs. S&P 500 Rails Index
Source: Bloomberg, Charlotte Lane Capital (CLC)
The correlation between the two series was 91% with an R-squared of 83%.

Exhibit 2: Correlation, CRB Raw Industrials Index vs. S&P 500 Rails Index

Source: Bloomberg, CLC

I’ve been asked “isn’t this a spurious correlation? One simple factor can’t explain this.” Railroads move physical goods. They sell cubic footage and if commodity prices go up, physical commodities move, and not on trucks. The emerging markets were on fire at this point and we know the BRICs couldn’t get enough industrial commodities to keep their societal builds-out going, so they were bidding commodities like Randolph and Mortimer Duke chasing FCOJ.

It was well established at the time that the headhaul for the rails was from West and East Coast ports inland, due to the US having offshored so much of its low value-added production. What was less appreciated is that the backhaul for the rails was where the profit dead spots lay. When we started to send scrap and other goods from the middle of the country back to the ports, the contribution profits from the backhaul exploded. This is partly explained by the negative correlation between the dollar and the rails. The weaker the dollar, the more affordable our products globally and the hungrier our trade partners became because money flows were white hot. Below is the S5Rail index vs. the DXY, inverted.
The rail executives with whom I met could not explain this either. The more I thought about these relationships, the more I thought about the history of railroads. A curious element in analyzing this industry, from the standpoint of a 21st century investor, is the absence of a good cycle to examine. While the US has a rich history of railroads, there are a number of factors in the 19th century that complicate thoroughly the examination of prior cycles for insight on the current one.

Between the late 19th century and the 1980 passage of the Staggers Act deregulating US railroads, the industry had been ruled by rate regulation. Since the passage of Staggers, there had not been a commodity cycle of any consequence to examine. So we can’t look it up on EDGAR or Bloomberg. Similarly, the post-Civil War era held many deflationary depressions, but the railroad industry went through a huge investment boom, subsidized by the US government, followed by overcapacity-driven busts.

We do know the Panic of 1873 was preceded by a number of years of deflation. As the following chart shows, the general level of prices in the US fell 25% between 1864 and 1873 and by more than 35% between 1864 and 1879.10
While I am confident this contributed to a vicious competitive environment in the rail industry during this period and ushered a number of roads into bankruptcy, the data I have are very spotty and the era ended with the establishment of the Interstate Commerce Act of 1887. At that point, the ability to compare today’s less-regulated industry with a largely unfettered industry ceased.

**Crisis.** In the first quarter of 2008, the CRB RIND experienced a violent move up followed by an equally violent move down. Railroads kept moving up as thematic investors and the Buffett crowd were captivated by the story. “One ton of freight moves 500 miles on a gallon of diesel,” I heard constantly from people, most of whom wouldn’t have gotten near railroads had Buffett never bought. I always found it humorous people would repeat this line. I think Buffett was being politic in saying that instead of what I viewed as the patently obvious, “They’re monopolies / duopolies with pricing power.”

What WEB said was certainly true, but I’m pretty sure that wasn’t the investment hypothesis. Unlike the Children’s Investment Fund, which suggested CSX raise rates massively every year for years on end, I’m sure Buffett knew that would be incredibly imprudent to say in public. Not that I’m calling Buffett duplicitous, but the guy is a magical speaker and magicians know the power of diversion.

By the end of the chart below, the GSEs had been nationalized (taking a chunk of my bonus that year) and I had witnessed the seizing of the money market from a seat about 15 yards off our trading desk. I believed very clearly we were in very rough waters already and that deflation was here. Believing rail volumes were about to implode and still operating with the CRB RIND vs. S5RAIL divergence in mind, I put out a sell recommendation on the rails.
Whatever the reasons for the call, that turned out to be the right decision. Moving forward to 2009, the CRB RIND started to rebound and we were all on the hunt for elephants. I didn’t have anything against the rails – I still loved them, but I maintained conviction in my belief the rails were inextricably tied to commodities. I also believed the Fed’s monetary moves would elevate commodities. Heck, I didn’t need to believe anything on the latter item. They WERE moving, and right now, while the rails from the second week of September had been absolutely trashed.
Having 2+ years of experience in the sector, my immediate go-to was BNSF. I was managing our Consumer group at the time, but I had also been invited to participate on our Industrials group (for the purposes of contributing to the management of a sleeved R1000 portfolio). So I pitched this, in size, and the head of that sector team was totally on-board. We had zero idea WEB would come along and bid and we weren’t in any way playing for that.

So the day the Berkshire bid came out, I was happy about that for a couple reasons. Sure, it’s nice to be right, but in one’s ninth year on the buyside, it shouldn’t be a big deal to be have a successful investment. I was happy this was a win for the Industrials team and I was happy the bid was taking place within 5% of what I thought the asset was worth. And again, when the big guy comes in and you’re a Buffett student, sure, that feels good.

I put out a quiet note with no victory lap, included the facts, and recommended a follow-up course of action, which was to take the Berkshire shares. I covered Berkshire for us (for most of my career, I have been a generalist with some vertical responsibilities, including some financials and others, and had a buy recommendation on both Berkshire and BNI at that point). BRK had rebounded, but not massively, and
was still undervalued. Our CIO replied to the note, firmwide, as follows: “Doesn’t the fact Berkshire is offering equity indicate Buffett believes his stock is fully valued?”

That’s a completely valid question. It stung for a second that I had just hit a home run, with no victory lap, and got no attaboy from the head of the firm, who I knew appreciated my work and who was legendary. This business, however, is not “show friends,” it’s “show business,” so it didn’t bother me for more than 1-2 minutes. I ventured that I may have undervalued BNI vs. Buffett’s assessment and that the dilution of Berkshire’s equity component might be justified because the deal would match $60B in float liabilities negatively sensitive to inflation with an asset that was positively sensitive to inflation.

At the time, I also sat on the Financials team and was recommending we purchase Berkshire. That team wasn’t really buying it and a piece of my pitch held that the S&P index committee has mis-specified Berkshire as a financial. It was already near 50-50 in financial / industrial exposure, so this would take it well over the line and I believed the operating leverage to an industrial upturn in Berkshire was under-appreciated. So the Industrials team lobbied to get Berkshire transferred to its part of the index, which worked out well (overriding index committees is an old trick in such situations).

Come Q3 2012, I was concerned about the divergence of commodities and rails and recommended (this time at a new firm) we sell our NSC position. I went through this whole baroque analysis anew and agree it can sound a little hippie-dippie, but sometimes good ideas sound that way. Here’s how things looked at that point:

Exhibit 7: CRB Raw Industrials Index vs. S&P 500 Rails Index, 2007-2012  
Source: Bloomberg, CLC
I didn’t get wide buy-in on the analysis and didn’t do anything with it again until Q1 2014, when I started a long-short product internally.

I immediately started with UNP and KSU as a joint (3.6%) short position and added GWR the next quarter as hard commodities continued to fall. By this point, I was 6% short rails and the chart looked like this:

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Exhibit 8: CRB Raw Industrials Index vs. S&P 500 Rails Index, 2007-2014

Source: Bloomberg, CLC

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Commodities were hanging in a good deal off the QE peak, but the rails were going nuts. Over the next year, soft and hard commodities continued to get hammered and I was managing the positions around this big move up. At the same time, I was short JOY, CAT (7.5% short, heh, story for another day), KMT, URI, and some China derivatives like Commonwealth Bank of Australia and Mizuho Financial. I was managing a whole array of exposures to the end of the commodity cycle I saw unfolding, so I wasn’t trying to minimize a good idea, but was managing risk. Somewhere along the way I shorted NSC for a quick trade on dollar strength and coal weakness, which worked well, but was over quickly.

Fast forward to Q3 2015. I was 7.5% short UNP and 2.6% WAB along with other commodity-exposed issues. I have since swapped out WAB for TRN. Here’s what the CRB RIND chart vs. rails looks like today:

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UNP is an 8% short position and TRN is at (2.6%) while the CBA AU position remains at (5%) with CAT hanging around at (3.4%). Industrials remain my largest exposure at 34.6% gross, comprised of 4.6% by (30%) out of 171 points of gross exposure for the portfolio and (25%) net.

I will change my mind when these two series re-couple or some compelling explanation comes along that illuminates the past relationships, admitting fully this relationship could be rejoined by commodities taking off.

As for UNP, I hope the rail bulls realize 16x and 14.5x 2015E and 2016E EPS are multiples that mean far less than FCF yields, given maintenance capex runs at 160% to 200% of D&A. This is true for all class I railroads, but I pick on UNP because that’s the one I follow most closely (I still prefer the western roads).
This maintenance capex load is due to the fact the depreciable life of gross PP&E is 32-35 years (divide gross PP&E by D&A to calculate this). You can also look in the footnotes to the 10-K.

To calculate maintenance capex, take D&A and raise it at the rate of inflation for the goods and services capitalized in gross PP&E for the half-life of the assets. Why the half life? D&A represents the costs of assets that were put in service last quarter to 35 years ago. On average, D&A currently equals the average of 0 and the max life of the asset. D&A today represents inflation rates for steel, unionized labor costs including health and postretirement, engineering services, rail cars, etc. Let’s just say the inflation rate of these things has been higher than mobile phones.

The other fun thing is a railroad can’t just go on a big maintenance holiday when the economy is tough. If you have a few spots of 100 feet where the track is out, your system will be down. This isn’t Hertz, a Donald Trump casino, or a plant where you can just milk the physical asset for a year or two to generate cash flow. As a consequence, from 2001 through 2014, UNP converted 65% of its net income to FCF, on average (chart below).

Exhibit 10: Union Pacific Conversion of GAAP Net Income to FCF
Source: Company filings, CLC

This has resulted in ROIC moving from ~4% in 2001 to nearly 12% in 2014, which is a wonderful story and certainly a signature of great investments (return on incremental capital increasing):
It’s still a 12% ROIC company, however, priced at a ~4% FCF yield with sticky costs. Furthermore, ROIC has a numerator problem. When you’re running excess capex of $2.4B pretax largely just to keep the lights on, net operating profit after tax (NOPAT) is overstated. In my ROIC terms and in my terminal NOPAT terms, I deduct from NOPAT excess capex, tax-adjusted. In my explicit DCF, I credit net cash from operations and FCF with the deferred tax inflow, so I’m not just dinging them in one term without giving them credit in another. Here’s ROIC as adjusted:
Either way, an 8% or 12% ROIC company trading with these valuation multiples implies a lot of growth in the future. Where is that growth coming from? It’s not in freight growth. Since 2014, gross ton miles have been flat and revenue ton miles will have grown at a 0.6% clip for 15 years (and remember this is trough to ~peak). This isn’t terrible, but it’s hardly the secular “we’re going to take share from trucking” story people tell. Below are revenue ton miles since 2000.
Furthermore, total freight carloads + intermodal freight for class I railroads have been nearly flat for 20 years. They’ve grown 0.2% annually over that time. This is not the secular freight winner people make it out to be.
Exhibit 14: AAR Car Loadings Volumes, All Freight
Source: American Association of Railroads, Bloomberg, CLC

Meanwhile, American Trucking Association data indicate truck tonnage has grown at 2.5x the rate of railroads since 2000, at 1.5%. Here is the chart of ATA’s truck tonnage index:
Where has rail growth come from, then? It has come from pricing and it will need to come from pricing in the future to fulfill embedded expectations. Transportation providers have a far easier time increasing prices when their customers, who are shipping commodities, are able to increase their prices. That was the story for the last 12 years. What’s happening with the customers now? They’re getting killed. Let’s look at wheat vs. UNP’s core pricing:
The shipper pays for carriage and we’re now back at levels of shipping cost / spot prices for wheat that prevailed in 2000 (i.e. when rails didn’t have the pricing power they’ve enjoyed or the equity price action they’ve enjoyed). Same with corn:
Exhibit 17: Corn Spot vs. UNP Core Rate
Source: Company filings, Bloomberg, CLC

Exhibit 18: Coal Spot vs. UNP Core Rate
Source: Company filings, Bloomberg, CLC

Coal looks the same:
The following shows the rail index vs. farm cash net income, as reported by the USDA:

**Exhibit 19: Farm Cash Net Income vs. S&P 500 Rails Index**

*Source: USDA, Bloomberg, CLC*

To further illustrate where we are in the ag cycle, let's take a look at Iowa farmland prices per acre vs. corn prices, as reported by Iowa State University's Farmland Value Survey:
The price per acre for arable land last year took its first significant fall since 1985 after a nearly 300% increase in values between 2003 and 2013. In general, cycles don’t tip over for one year, arrest, and then grow from there. We did get that from quantitative easing in 2011, but I believe that temporarily elongated...
the cycle and probably worsened it (check with National Oilwell Varco, which I waved my team off in 2014. Offshore drilling rigs from 2011-2014 was one of the worst overinvestment cases I’ve ever seen).

**Why This Is Significant. Regulatory / Political Response?** I could go through a whole slew of commodities and get the same result, which is part of the point of the CRB RIND index. Soft and hard commodities are highly correlated, for the most part. The relationship isn’t spurious. We had a demand response from 2003 forward, the Fed helped or caused it globally, supply didn’t respond, and now it has. Producers who ship their goods on the rails are getting killed in the end markets and I believe it will be tough for the railroads to continue raising their core prices.

If they insist on doing so, the rails invite upon themselves a regulatory response. They can point to ROIC over an inflation-adjusted asset base for rate adequacy, but does Washington really care about that? When manufacturing, mining, energy, and agricultural constituencies are downsizing people left and right and going bust? I’ve seen absurd in Washington, from the UAW getting unsecured postretirement claims elevated above senior secured claims for the auto OEMs and Senator Durbin going after V and MA, which take a tiny bit out of transactions for great value-add (and where the merchant discount, in total, is no greater than the costs of handling cash, including theft).

The point being Washington doesn’t care much about what’s rational when a group of constituencies wants someone’s head. If 2008-2009 taught us anything with regard to political responses to economic problems, it is this: Everything is on the table. Did anyone ever think the GOP would nationalize the GSEs, two companies with trillions of dollars in assets? Nationalize two auto OEMs? Force banks to issue capital even if a few didn’t really need it? On the other side of the aisle, the White House actively put YRC Worldwide on life support, as it was the largest less-than-truckload (LTL) trucking company and a huge Teamsters organization while also sponsoring a cram down of secured claims to the auto OEMs by postretirement claims by the UAW.

These claims have traditionally been seen as junior and general, without priority over senior claims. In other words, the calculus of Washington constituencies vs. advocates defies party lines and precedent and either party will make unexpected moves in response to economic stress. I don’t think there’s much doubt the agricultural and materials sectors in the US are in dire straits and are experiencing Depression-type conditions.

**Does This Matter to UNP and the Rails?** Investing long or short is the process of assessing expectations embedded in a security’s price, working through the scenarios (the values attaching to each and the probability of each scenario coming to pass), and then laying out capital against the biggest mismatches one can find between that price and intrinsic value. Of course, there’s more detail in a process, but that captures the heart of the matter.

In the case of UNP, my near-term estimates are not at all at odds with consensus forecasts. This is an issue that trips up some (what’s my edge if my estimates are no different than consensus)? The answer is consensus is not the market. Consensus is a poll of a relative handful of specialists, with which the market itself can sometimes agree and sometimes disagree. I believe the market embeds a volume rebound and core rate increases for UNP over a 5-10 year horizon.

Given the rails barely grew volume in the best of times, I believe it is wrong to embed both volume growth and core price increases in excess of inflation. The rails probably chased volume off their systems with these price increases while the dollar and lower Chinese demand for materials have hurt backhaul contributions.

Another source of profit that existed from 2010 through 2015 is gone. That’s the fuel surcharge revenue the rails were able to impose upon customers. A sizable gap opened up between diesel and UNP’s surcharge revenue per thousand revenue ton miles (KRTm), an opaque profit driver I believe is not widely appreciated:

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**Rail Renaissance?**
In 2014, UNP’s net fuel cost (gross fuel expense less surcharge revenue) was $739M on 550B revenue ton miles (RTM). Diesel at year-end was priced at $8.42. Ten years prior, UNP’s net fuel cost was $1.5B on 546B RTM with diesel at $3.88. So UNP more than halved its net cost of fuel per RTM while carrying...
0.6% more revenue-bearing freight. I’m not claiming customers didn’t know. There’s no trickery here. Customers, are, however, very angry about this. When you’re a monopoly or duopoly, you don’t have to trick your customers, either. You smile, tell them they’ll pay, or they can find another way to get their coal or wheat to market.

UNP P&L, common-sized to thousand revenue ton miles:

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<thead>
<tr>
<th></th>
<th>2004</th>
<th>2014</th>
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<tr>
<td>Core revenue</td>
<td>$21.82</td>
<td>$38.55</td>
</tr>
<tr>
<td>Surcharge revenue</td>
<td>$0.53</td>
<td>$5.09</td>
</tr>
<tr>
<td>Total revenue</td>
<td>$22.36</td>
<td>$43.65</td>
</tr>
<tr>
<td>Gross fuel, utilities cost</td>
<td>$3.32</td>
<td>$6.44</td>
</tr>
<tr>
<td>Net fuel, utilities cost</td>
<td>$2.79</td>
<td>$1.34</td>
</tr>
<tr>
<td>Other opex, incl. depreciation</td>
<td>$16.66</td>
<td>$21.28</td>
</tr>
<tr>
<td>EBIT</td>
<td>$2.37</td>
<td>$15.93</td>
</tr>
<tr>
<td>EBIT margin</td>
<td>10.6%</td>
<td>36.5%</td>
</tr>
<tr>
<td>Note: Revenue ton miles (billion)</td>
<td>546</td>
<td>550</td>
</tr>
<tr>
<td>Note: Diesel (YE)</td>
<td>$3.88</td>
<td>$8.42</td>
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I believe surcharge revenue was not just a cost offset, but a sizable profit driver, accounting for 21% of unit revenue increases and actually driving down net fuel costs per mile by greater than 50%. While diesel increased by 117% over this period, surcharge revenue per RTM increased by 850%. That doesn’t look like mutual sharing of burden between customer and carrier.

From my reading of BNSF’s and UNP’s 10-Ks, I believe BNSF has been a lot more measured in its pricing. They don’t disclose surcharge revenue, but we can plainly see BNSF’s unit revenue has been far less explosive in the last few years than UNP’s. That could be freight mix, UNP working on system issues with shippers, or any number of things. But that could also be the Board realizing they can’t just invade customer profit pools without a response. And hey, I’m not anti-capitalist. I’m a full-on capitalist, but I think when you have market power, you should price to the point where your customers don’t feel they need to demand a political response. I think we’re nearing or past that given macro conditions for customers.

I believe embedded expectations have UNP’s EBIT margin expanding from here. We can see, however, the company is deleveraging beneath the fuel expense (gross and net) line. Fuel surcharges and the lag between spot prices and surcharge levies have kicked in, but the 2003-2015 correlation between diesel and surcharge revenue per RTM (below, 84% correlation) indicates there is about $1.00 per KRtm downside to surcharge revenue.
I haven’t dinged UNP very hard in my model on this, but the upside/downside favors me, I believe.

Meanwhile, the other costs are highly fixed. The rails have large unionized workforces with restrictive work rules and postretirement costs. The industry has pared back labor per mile about as much as can be accomplished until these are all robot trains.

Let’s look at the major P&L lines in Q3 2015, expressed per thousand gross ton miles:

**Exhibit 24: UNP Expanded P&L per KRtm**
Source: Company filings, Bloomberg, CLC

<table>
<thead>
<tr>
<th></th>
<th>Q3 2014</th>
<th>Q3 2015</th>
</tr>
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<tbody>
<tr>
<td><strong>Revenue</strong></td>
<td>$23.78</td>
<td>$23.37</td>
</tr>
<tr>
<td><strong>Core revenue</strong></td>
<td>$22.05</td>
<td>$21.00</td>
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<tr>
<td><strong>Salaries, wages, benefits</strong></td>
<td>$4.95</td>
<td>$5.32</td>
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<tr>
<td><strong>Fuel, gross</strong></td>
<td>$3.39</td>
<td>$2.03</td>
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<td><strong>Purchased services, other</strong></td>
<td>$2.50</td>
<td>$2.47</td>
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<tr>
<td><strong>Depreciation</strong></td>
<td>$2.13</td>
<td>$1.85</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td>$0.93</td>
<td>$0.86</td>
</tr>
<tr>
<td><strong>Equipment rental, other</strong></td>
<td>$1.19</td>
<td>$1.27</td>
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\[ y = 0.5921x - 1.1593 \]
\[ R^2 = 0.7097 \]
<table>
<thead>
<tr>
<th>YoY</th>
<th></th>
<th>6%</th>
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<tbody>
<tr>
<td>Total opex, incl. depreciation</td>
<td>$14.82</td>
<td>$14.09</td>
</tr>
<tr>
<td>YoY</td>
<td>(5%)</td>
<td></td>
</tr>
<tr>
<td>Opex ex fuel</td>
<td>$11.42</td>
<td>$12.06</td>
</tr>
<tr>
<td>YoY</td>
<td>5.5%</td>
<td></td>
</tr>
<tr>
<td>% of revenue</td>
<td>48.0%</td>
<td>51.6%</td>
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</table>

Revenue ton miles declined faster than gross ton miles, so capacity utilization fell and exacerbated opex deleverage, but that’s what happens when commodities decline and we get into a general inventory correction. The trains run whether 54% full or 52%; that’s the inescapable iron law of “last mile,” “last seat,” “last room” fixed cost models. When you have a heavy labor load that is organized, heavy capital costs, and regulated operating parameters, the decline in fixed cost absorption can be very nasty. With fuel costs in decline, we may see breakage in the absorption of fuel costs by surcharge revenue, further imposing a margin headwind.

**The Bottom Line.** The prosaic explanation of a model in a report such as this is boring and no one needs it. I attach the model hereto and offer it for your own tinkering. To sum it up, I believe this is a 2.5% topline grower with some deleverage in 2016 and flat margins thereafter. They can jigger things below the line, but it’s close to a 2.5% EPS grower from here with FCF conversion generously forecast at 80% over ten years.

I value things using an explicit forecast horizon and a terminal multiple that is the inverse of WACC. These two elements comprise what is known as the “competitive advantage period,” or “CAP.” “CAP” is the period during which a company can invest in projects yielding returns on capital in excess of its cost of capital. Past that, when return on incremental capital = WACC, the company deserves no greater than a NOPAT multiple equal to the inverse of WACC. This signifies no matter how fast a company grows, if incremental ROIC = WACC, the new invested capital base deserves no premium and the resulting NOPAT multiple is a steady state multiple. At this stage, present value of growth opportunities (PVGO) = $0 on top of the steady state value.

I don’t believe in “perpetual growth” or the Gordon Growth model (1 / (Ke – g) = terminal multiple), as it implies incremental returns on capital that are perpetually greater than WACC. Michael Mauboussin has explained this more elegantly than I in various papers for the last 15+ years. I would point to “Common Errors in DCF Models” for a full explanation of the terminal multiple math. As an added point, when Buffett talks about the concept of a company retaining a dollar of earnings vs. paying it out, he’s discussing a rule of thumb very close to this, in my opinion.

The scenario I paint above is probably closer to generous than anything else. I would estimate a higher probability of fundamentals underperforming my explicit forecast than outperforming. My base case scenario of UNP being worth $72 leaves (20%) downside and a 3-5 year expected return of 0% to 3.5%.

This is the type of short I like. It’s a large cap, it has had cult-like devotion for a long time, and I often encounter emotional feedback along the lines of “your CRB RIND index theory is spurious,” “it’s a great company,” “what, you think Buffett is stupid?” and so on. No, Buffett is the master and I have learned more from him than anyone. But you’re right or wrong based on your reasoning, long or short, and who is on the other side of the position should be one of the last things you check. This isn’t personal, it’s a publicly traded security, and it’s a vehicle to produce both alpha as well as an excellent hedge.

This is the type of short that is very well behaved. It’s not a battleground, a belief state still exists that it’s secular, and private equity isn’t going to come along and take me out and cause permanent capital impairment. That probability is exceedingly low, as is the probability of a Western rail merger. I do fear an Eastern-Western rail combination, at least in terms of how the market would react, so that’s one of my bear cases on drawdown potential.
A company growing at 2.5% with 80% FCF conversion barely meeting its cost of capital is not worth a 4.0% to 4.5% FCF yield, especially when it’s commodity-exposed and we’re in the downside of the commodity super-cycle. Forget the 16x and 14.5x EPS multiples on 2015E and 2016E EPS and focus on FCF. My $72 assessed value, implying FCF yields of 5.5%, might be too low (in other words, it could get cheaper), but trade closure or initiation is a discussion for another day.

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i The CRB RIND consists of burlap, butter, cocoa beans, copper scrap, corn, cotton, cottonseed oil, hides, hogs, lard, lead scrap, print cloth, rosin, rubber, steel scrap, steers, sugar, tallow, tin, wheat, wool tops and zinc.

ii Ian McDonald was at Pequot at the time, working with Art Samberg, who is one of the most enjoyable old-school fellows to talk stocks with. Ian around 2008 came up with the idea of buying nonperforming mortgages at 30¢. He came up with the big idea, then, of snagging two specialty servicers that would help people out of the house they couldn’t afford, make any repairs to the house necessary, and get the assets performing. His further insight was to avoid trying to realize big holding gains – he was going for high velocity.

Thinner margins on high velocity – he took that page out of the Costco / Amazon / Nebraska Furniture Mart playbook. Brilliant. Impressive, too, that he had the intellectual flexibility to go from a solid career as an equity guy and monetize the credit market in that way. And he did this with no leverage, which investors loved, as it spit out a very steady 150 bps a month to investors. Ian is a major baller and a very good person. His ideas have played a major part in the success of my long/short product.

iii The answer to this is "little to none," based on my reading of the Herengracht index. This is a study of Amsterdam, Netherlands residential real estate on the Herengracht canal. As the desirability of this real estate and its demographic characteristics changed little from the 17th century through the late 20th, this is one of the most hedonically stable residential real estate price indexes available to study the matter.

iv [www.measuringworth.com](http://www.measuringworth.com), a go-to site for historical price indexes.