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# EAT THE SPAGHETTI!

## Global Listed Infrastructure

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The North American railroad sector continues to undergo transformational change. Implementation of Precision Scheduled Railroading (PSR) has resulted in a step-change in efficiency that has delivered exceptional improvements in company profitability and shareholder returns.

Execution of PSR is not without risk. It requires a mature workforce to embrace cultural change. Customers are forced to adapt to a system where they are no longer the only priority. Complaints may lead to political and regulatory intervention.

The market has been sceptical that all railroads can implement PSR. Recent meetings with US railroad management, the STB regulator, shippers, and PSR experts have raised our conviction that Union Pacific (UNP) is on the right track.

The portfolio has positions in UNP and Norfolk Southern (NSC). These are high quality companies trading at reasonable valuations that rank highly in our process.

In December I spent two weeks visiting infrastructure companies in the United States. It was a busy couple of weeks with over 50 company visits across five cities including meetings with tower companies, energy companies, utilities, railroads, regulators, politicians and much more. This note focuses on my learnings from the North American railroad sector which has seen significant operational changes.

## What is Precision Scheduled Railroading (PSR)?

PSR is based on the idea that a train should leave at a scheduled time. This is in contrast to previous operations where trains would wait for all the carloads to turn up and be "sorted", risking delays and congestion later in the network. PSR can be seen as a change in the operational culture within the organisation: under PSR, efficiency becomes priority #1.

### Key components of PSR include:

- Improving on time delivery by reducing travel time and increasing certainty
- This leads to increased customer satisfaction and premium pricing
- Reducing assets, particularly locomotives and cars as the network becomes more efficient and asset utilisation is maximised
- Reducing headcount as the railroad is run more efficiently
- Reducing the number of trains traveling but increasing their length (leading to increased speed and lower dwell times)
- Reducing capex and rail infrastructure (hump yards)

These changes in the system can initially create service disruptions for customers and shippers as they have to adapt to new railway processes and schedules for their carloads. This can create conflict and tension between the shippers and rail companies although both ultimately benefit from a more efficient system. Overall, PSR increases the economic moat of the rail industry as a whole.

The outcome of this improved productivity is a better Operating Ratio (a commonly referenced rail operational metric, defined as OR = 1- EBIT margin). This leads to increased free cash flow (FCF) and earnings per share. Higher FCF allows for shareholder friendly capital management initiatives, like larger buybacks.

## Who has successfully implemented it?

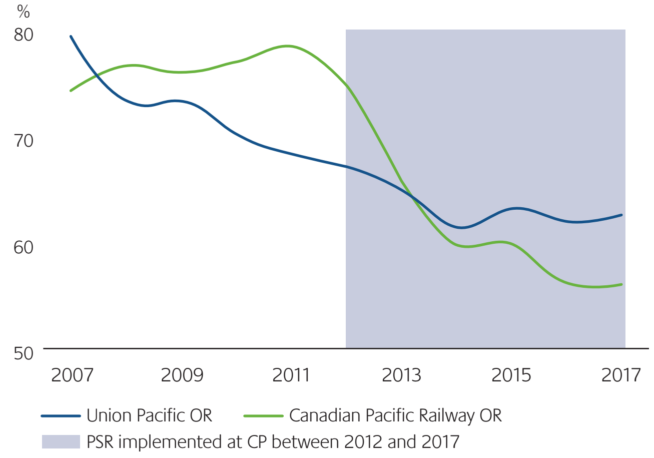
PSR has been successfully implemented at Illinois Central (IC)[1], Canadian National (CNR), Canadian Pacific (CP) and CSX under Hunter Harrison's leadership. Hunter spent 55 years working in the rail industry. He created PSR and is widely regarded as a legend of the industry. The two most recent changes were at CP and CSX.

According to company statements, over a five year period from 2012 to 2017, CP's OR went from >80% to 56%. During that time Earnings per Share (EPS) increased from \$3.35 to \$16.21 and the company bought back over 15% of its shares on issue (SOI). Headcount was reduced 37%, average train length increased by 21% and average train speed increased by 28%.

[1] Acquired by Canadian National in 1998.

The chart below shows CP's improving OR vs UNP's as a result of implementing PSR between 2012-2017.

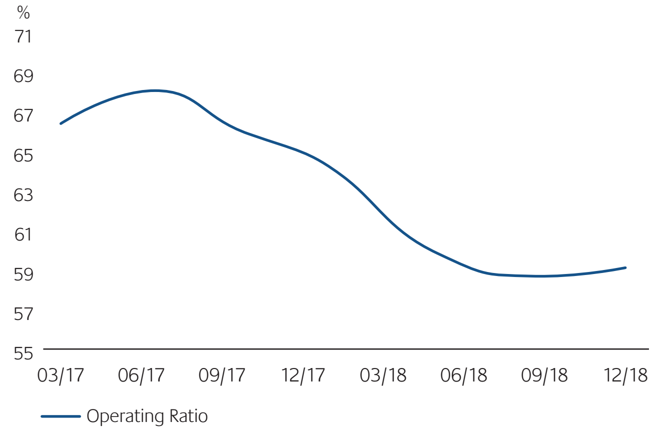
### Union Pacific and Canadian Pacific Railway Operational Ratios 2012-2017




Source: CFSGAM, UNP financial reports, CP financial reports.

CSX has materially outperformed the other rails over the last two years since Hunter Harrison implemented PSR[2]. Its operating ratio went from almost 70% (and the worst of the Class 1 railroads) to sub-60% over 18 months. This was achieved through headcount reduction of 15%, locomotive reduction of almost 10% and hump yard reductions from 12 to 4. The company also bought back over 10% of its own stock, and has recently announced an additional 10% buyback for 2019.

### CSX operating ratio




Source: CFSGAM, company reports.

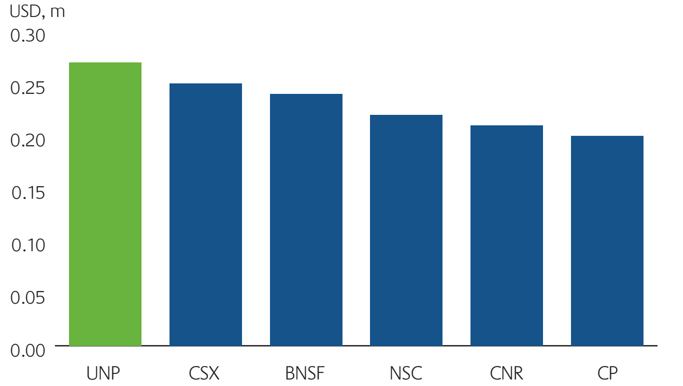
## Union Pacific's turn

In September 2018 UNP announced its intention to implement PSR across its network. Contrary to previous (successful) implementations done in "shock and awe" style, UNP decided to implement PSR in stages. Furthermore, UNP management did not release any financial targets and none of the management team had previously been at a rail company where PSR was implemented. As such, market expectations for the company's success were muted and more of a "wait and see" approach was taken (very different to the same announcement by CSX in 2017 which was up 25% on the day). Analysts covering the rail sector did not adjust their long term operating ratio assumptions, implying they doubted that UNP would be successful. However in January 2019 UNP appointed a new Chief Operating Officer – Jim Vena, a 40 year veteran of Canadian National, and highly experienced in the PSR culture.

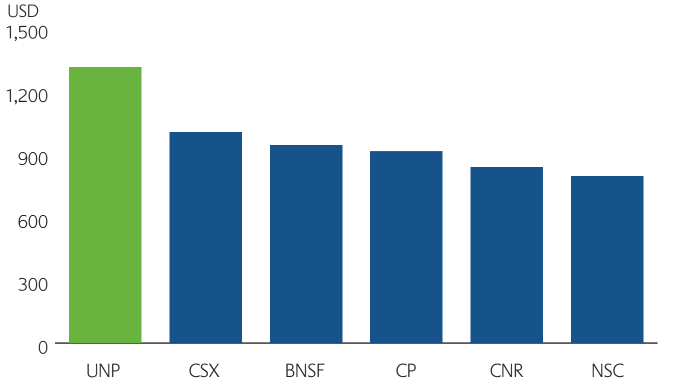
UNP's network has very long length of haul and simpler routes verse the other rails. This should mean that PSR is easier to implement. They also have the worst productivity[3] of the Class 1 rails and an OR that has stayed almost the same for the last five years, giving them the most room for improvement.

Although UNP is lagging many of its peers on OR, this is the not the only disappointment. These graphs show how poorly they compare to the other rails for other productivity metrics like cash costs per employee and per carload.

### Cash cost per employee




### Cash cost per carload

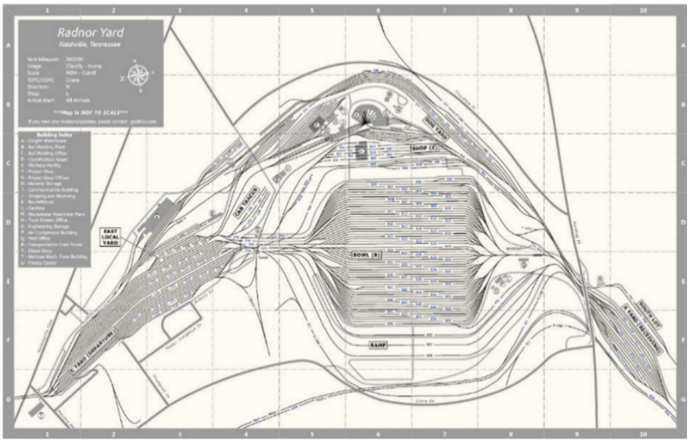



Source: CFSGAM, company reports.

A key component of PSR is utilising assets more efficiently. This can be evidenced by the number of hump yards that were reduced as PSR was implemented at CP and CSX. The following hump yard diagram, taken from the CSX analyst day in 2017 of a hump yard, highlights the complexity of these yards. A hump area is a large yard that sorts rolling stock – locomotives and railcars – into complete trains or the reverse, known in the USA as switching. There is literally a hump in the yard where cars roll onto their destination tracks and are sorted. With PSR, CP and CSX reduced their hump yards from 5 to 1, and from 12 to 4 respectively. UNP currently has 14 – the most of all the Class 1 rails!

[2] CSX's share price has increased by 65% over this period, vs an average increase of 25% for the other listed Class 1 rails.

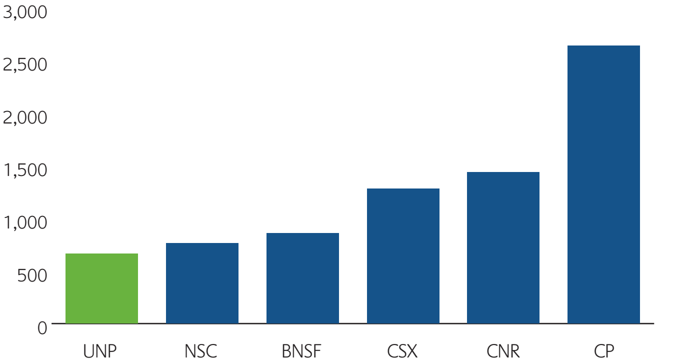
[3] Productivity metrics include cash cost per carload, cash cost per employee, gross ton mile per hump yard, carload per hump yard.



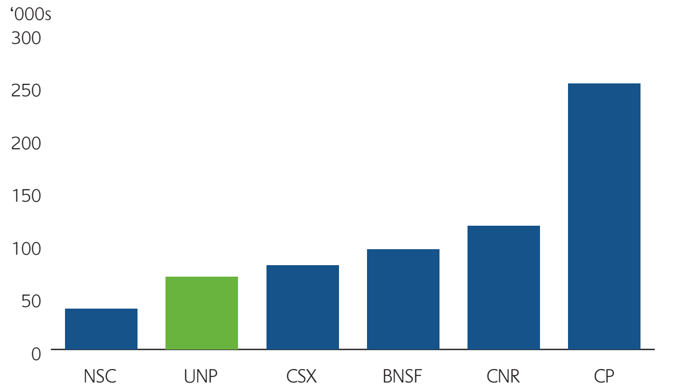

Source: CSX 2017 Analyst Day presentation

These graphs highlight how inefficient UNP is on productivity metrics related to hump yards, like carloads per hump yard and GTMs[4] per hump yard.

### Carloads per hump yard




### GTMs per hump yard




Source: CFSGAM, company reports

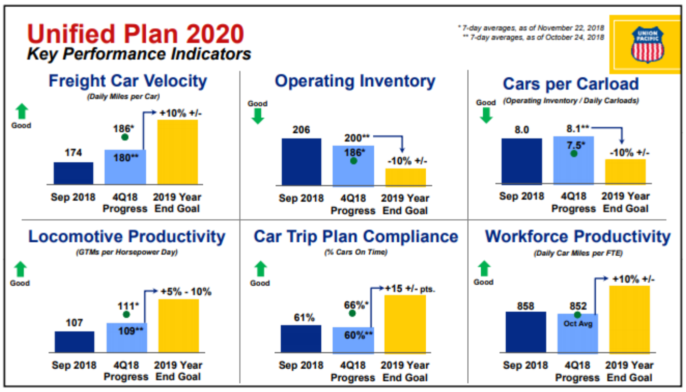
UNP have now announced $500 million in initial productivity savings. This should equate to a 200 basis point (bps) improvement in OR. Their closest competitor is BNSF[5], which is operating at a 30% better unit cost than UNP. If UNP were to operate in line with BNSF it could save over $3 billion each year – equivalent to a 1200bps improvement in OR.

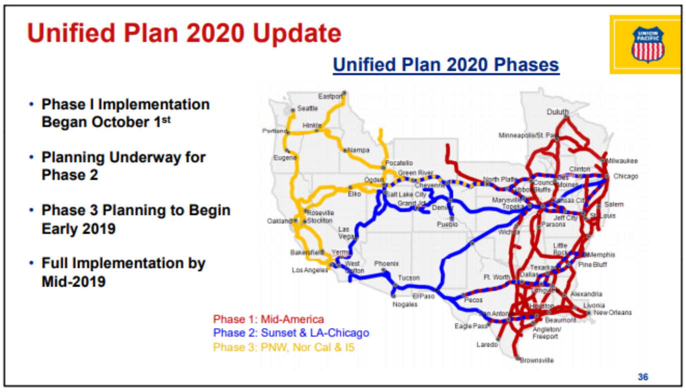
At both CP and CSX, PSR sceptics initially said geography and network configuration were different and that PSR couldn't be done, but they were ultimately proven very wrong. Imagine what PSR could achieve with a rail company that has an "easier" geographic footprint like UNP.

## What did I learn from my trip?

The first week of my trip was focussed on the rail companies. The tone of UNP's management team has significantly changed over the last 12 months. They are now much more open to investors, enthusiastic to share what they have learnt about PSR so far. The staged implementation approach is partly because they are learning as they go, and partly to avoid the regulatory issues that CSX faced over shipper disruptions in 2017.

I believe they are committed and can successfully implement PSR over time. Even if they only make half the improvements that CSX have, earnings can still upgrade to 20% above market expectations over the next three years. At the meeting I attended they released updated slides to show current progress and future targets.




Source: Union Pacific, November 2018.

In Washington DC I spent the day with politicians, regulators, and rail and industry lawyers. I came away confident that neither UNP nor CSX's networks have experienced any service disruption issues. The shippers are not yet complaining. Perhaps it is both a product of the regulator having been through it before with CSX and understanding what to expect this time around, plus the slower pace of implementation. As a result of this, the STB[6], the sector's light-handed regulator, is monitoring but not intervening. Capitol Hill is not pressuring the STB in the way they did with CSX in 2017.

We believe the risk of rail regulation remains low in the medium term. With just one currently appointed commissioner (out of a potential total of 5) they are over-worked and under-resourced[7]. Revenue adequacy[8] and what this will mean to pricing for the rails comes up from time to time, but I believe this to be a 10 year plus story, given previous changes to the regulatory model. As such we continue to see the rails operating in a favourable regulatory environment with the ability to continue to price their services above inflation.

[4] Gross ton miles, measure of total weight including loaded and empty cars and locomotives and the distance moved by the train

[5] BNSF is owned by Berkshire Hathaway.

[6] Surface Transportation Board

[7] Two new commissioners were confirmed in the first week of January and will start later this year, taking the number to 3 of 5 commissioners.

[8] There is not currently a clear long-term definition of revenue adequacy. Instead the STB looks at whether a rail's return on capital exceeds the industry cost of capital, as determined by the STB.

## Portfolio positioning

The portfolio has sold positions in CP and CSX over the last 12 months. The mispricing opportunity narrowed as they outperformed, and they moved down in our process. The proceeds were recycled back into NSC and UNP.

After UNP's first PSR announcement in September we initiated a position in the company. Following the increasing conviction that my December trip brought, that position has been added to.

The fund currently holds overweight positions in the two companies that are at the beginning of their respective PSR journeys – UNP and NSC. Within the freight rail sector, we see the greatest opportunity for improvement in OR from these two companies. This should translate to earnings upgrades and higher shareholder returns.

We enter 2019 with expectations for slower volume growth given the current economic data and record 2018 volumes. We believe that UNP is best positioned to upgrade earnings even without volume growth due to PSR implementation, as margins expand from productivity gains and cost savings.

To a lesser extent NSC, which is a smaller holding in the portfolio, should benefit from the same drivers. Although it has the highest (worst) OR of the group (ex-Kansas City Southern which is half Mexico), we still question its commitment to PSR as it continues to increase locomotives and capex. The company is holding an analyst day in mid-February. We will be watching closely for financial targets and PSR hires. We don't believe it is feasible for NSC to remain the only listed rail to not implement PSR[9]. The more successful the others are, the more pressure is placed on them from a competitive standpoint. If NSC are not successful as a standalone entity then we would expect to see a response from activists, as we saw at CSX and CP.

We see Union Pacific and Norfolk Southern as high quality companies with reasonably priced businesses. They rank highly in our process due to the combination of both quality and value.

## Railroader

While on this trip I read the book "Railroader: The Unfiltered Genius and Controversy of Four-Time CEO Hunter Harrison". I highly recommend it, even if you aren't a railroad fanatic.

If you want a copy please contact me as we have a few spares for you to enjoy. Some of my favourite quotes below:

"They say CSX has a dense 'spaghetti' network that makes precision scheduled railroading impossible, just like they said the mountains and snow made it impossible in Canada," says Harrison. "Hell, I'll eat the spaghetti!"

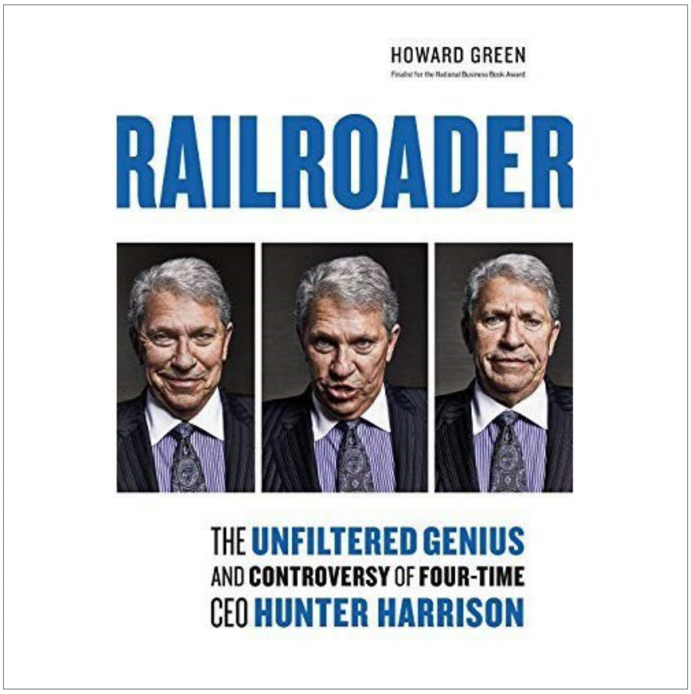
"For decades, freight trains did not run on schedules. They departed when a customer's load showed up for shipment. Hunter would eventually change that, providing more predictable service and shorter transit times for which he would charge premium prices."

"The railroad never sleeps."

"If an asset isn't used, it's a liability because of the costs associated with owning it. The more efficient the operation, the fewer assets are needed."

"Railroads only make money when cars are moving."

"The tail number on Hunter's first corporate jet was OR59, a number that was thought to be an impossible-to-achieve OR."




[9] It should be noted that Warren Buffet's BNSF has not implemented PSR due to their belief that focus on the customer and growth in the long-term, not OR, is the best way to run a railroad.

## Contacts for Further Information

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