Rail Capacity Dynamics in North America

Transcribed and Summarized by Hilary Till
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The participants in the morning panel of the JPMCC's September 30, 2016 Research Council meeting are shown above. From left to-right are Professor Nikos Nomikos, Ph.D., Cass Business School, City, University of London (U.K.), **Mr. John Schmitter** (speaking)**,** KEP LLC; Mr. Steffen Hammer, Robert Bosch GmbH (Germany); and Professor Colin Carter, Ph.D., University of California, Davis and a Research Council Co-Chair, JPMCC.

Introduction

The September 30, 2016 JPMCC Research Council meeting featured a morning panel on "Emerging Risks and Challenges in Commodity Supply Chains." The panel featured presentations from (1) Professor Nikos Nomikos, Ph.D., Cass Business School, City, University of London (U.K.); (2) Mr. Steffen Hammer, Robert Bosch GmbH (Germany); and from (3) Mr. John Schmitter, KEP LLC. Professor Nomikos discussed global shipping economics and risks; Mr. Hammer, in turn, covered the commodity risk management concerns of a large industrial consumer; and Mr. Schmitter concluded with an explanation of rail capacity dynamics in North America.

The panel was organized by Dr. Ajeyo Banerjee, Ph.D., of the University of Colorado Denver Business School and was chaired by Professor Colin Carter, Ph.D., of the University of California, Davis. Professor Carter is also a Co-Chair for the J.P. Morgan Center for Commodities' Research Council. After very briefly summarizing Dr. Nomikos' and Mr. Hammer's lectures, this digest article will cover Mr. Schmitter's rail capacity presentation.

Global Shipping Economics and Risks

Dr. Nikos Nomikos, Professor of Shipping Risk Management, Faculty of Finance, Cass Business School, City, University of London (U.K.), covered the following topics in his presentation: (1) the economic significance of shipping to the global economy; (2) the growth in seaborne trade since 1996; (3) the overinvestment in shipping during the peak of the market; (4) recent developments in world trade and shipping; (5) how vessel sizes are getting much larger; and (6) emerging trends in shipping. In addition, Professor Nomikos graciously covered his Research Council presentation in a digest article in the Spring 2017 issue of the *GCARD*.

Commodity Risk Management for a Large Industrial Consumer

Mr. Steffen Hammer, the Vice President for Commodity Purchasing at Bosch, also presented during the September 30, 2016 Research Council panel. During his presentation, Mr. Hammer covered, in succession, the following topics: (1) background information on the Bosch Group; (2) an overview of the company's products and commodity risks; (3) the types of commodity risk-management techniques employed by the company; (4) recent examples of commodity risk-management challenges; and (5) a summary of research interests on the part of the Bosch Group. Mr. Hammer's colleague, Sven Streitmayer, elaborated on elements of Mr. Hammer's presentation in a digest article in the Spring 2017 issue of the *GCARD* as well.

North American Rail Economics and Risks

The third and final presentation during the September 30, 2016 morning panel on commodity supply-chain challenges was provided by Mr. John Schmitter, President, KEP LLC. Noted Professor Colin Carter in his introduction, John Schmitter "is a consultant and has a very impressive list of activities and clients. John works on supply chain organization, transportation pricing, and rail-cost analysis."

Mr. John Schmitter, President, KEP LLC, participated in the morning panel on "Emerging Risks and Challenges in Commodity Supply Chains" at the September 30, 2016 JPMCC Research Council Meeting.

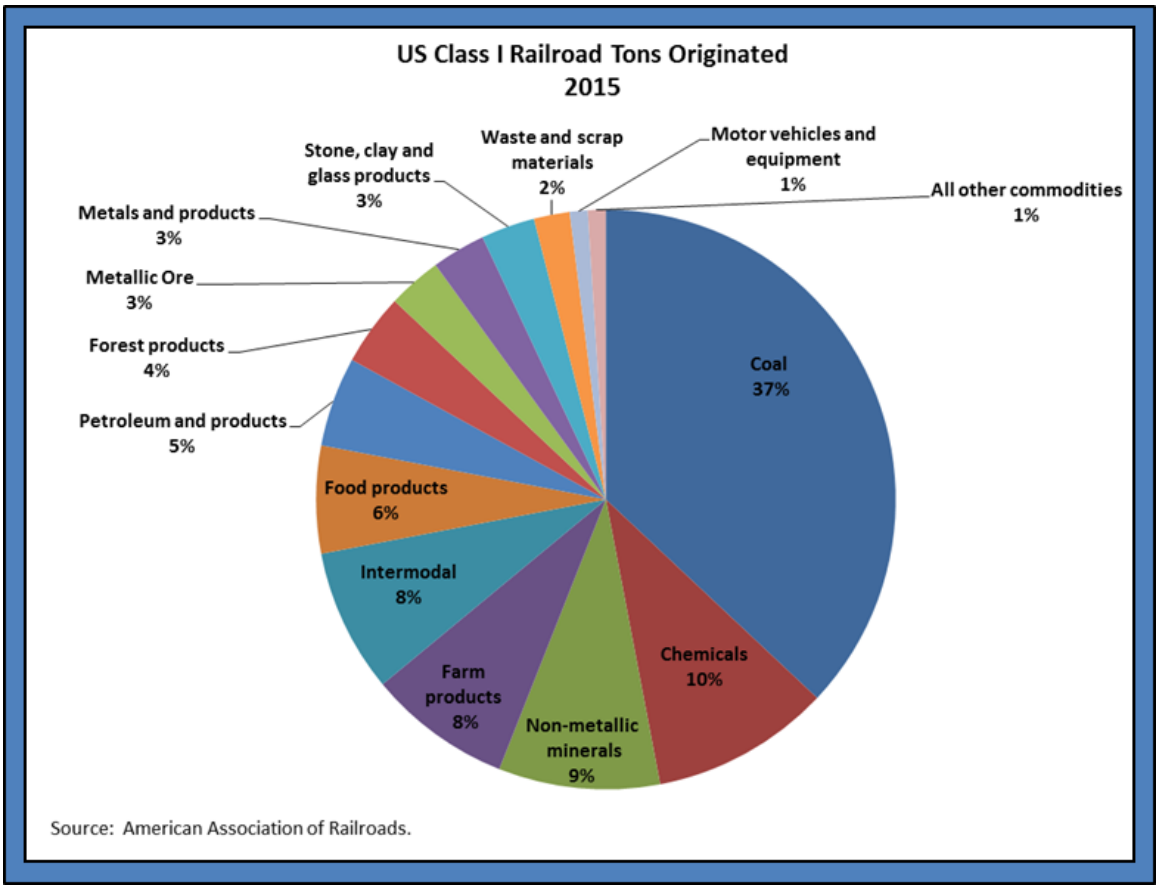
Introductory Explanation

Mr. Schmitter introduced his presentation by explaining that "in the North American railroad industry, it is almost a complete opposite of what Nikos [Nomikos] just described in … ocean shipping ... as regards to container ships. … Rail capacity is available but very much controlled." He stated that his presentation was organized as follows: he would describe [a] "where the railroads fit in the commodity supply chain, … [b] what the industry structure is, which is quite a bit different than it is in most of the rest of the world, ... [c] how railroads look at capacity and capital investment, and [d] some things that practitioners can do to manage … [rail availability] risks."

How Railroads Fit in the Commodity Supply Chain

Stated Mr. Schmitter, "If you look at what railroads handle ... from a tonnage standpoint, it is commodities; it is coal, chemicals, minerals ..., sand, ... grain and other food products as well as the inland portion of intermodal container movements." Please see Figure 1 on the next page.

Figure 1
U.S. Railways Handle Mostly Commodities and Intermodal



Source: Slide 2 of Mr. John Schmitter's September 30, 2016 presentation to the JPMCC Research Council.

For "most of these commodities in the U.S., ... truck and water do play a part in the supply chains … But for the most part, trucks are used for very short hauls or prior or subsequent to water or rail movements. And of course, water is ... limited to where you have access ..."

"So in North America, … commodity supply chains … pretty much [refer to transport via] … railroads."

North American Railroad Industry Characteristics

The North American railroad industry has the following seven characteristics: (1) ownership by shareholders; (2) railroad companies own track, locomotives and other infrastructure; (3) rail customers own or lease about 50% of railcars; (4) labor are railroad employees, and "it is a highly unionized environment;" (5) there is light economic regulation, which is the responsibility of the Surface Transportation Board in the U.S. and the Canadian Transportation Agency in Canada; (6) "companies are very profitable;" and (7) there is little government involvement in infrastructure or operations.

Mr. Schmitter clarified that "as a practical matter, most rail movements in the U.S. are not regulated." In addition, "rail rates and services are really not regulated in Canada at all."

Rail Service Mainly Provided by One Carrier

Mr. Schmitter reviewed that "there are ... two regional duopolies: two large railroads in the West and two large railroads in the East." In the West, the carriers are BNSF and Union Pacific; and in the East, the carriers are CSX and Norfolk Southern. "There is another one that serves the middle of the country, Kansas City Southern; KCS also owns the main railroad in Mexico." While in Canada, "both railroads, the Canadian National and the Canadian Pacific, ... pretty much cover the whole country."

Mr. Schmitter noted that "most rail-served locations are only served by one railroad," which means that "most movements are captive to one railroad at one end or the other." Therefore, the railway industry is one where "private companies … have a lot of market power." He added, "basically [these companies are] ... lightly regulated, capacity constrained monopolies. From a business standpoint, it doesn't get any better than that."

Rail Capital Investment and Capacity

Mr. Schmitter next covered rail capacity investment decision-making. "So how do … [railroad companies] look at capital investment? Whereas Nikos [Nomikos] described … the shipping industry … [as one where when] things look good, everyone is scrambling for market share [and] scrambling for capacity …", it is different for railroads. With the "market power of the railroads, … the companies look at … [capital investing] differently. It is a very capital-intensive industry. I think probably electric utilities are the only more capital intensive industry in the U.S., and the capital has a lot of risk" compared to other large-scale industrial decisions. "If somebody builds a big chemical plant, and … they decide not to use it, they can always sell it to somebody and maybe it could have some other use." In contrast, "rail track is … a 100-year asset. It's pretty much only good for running trains." So one's investment horizon is over a very long timeframe. "Even things like locomotives and rail cars are 40 – 50- year assets." Therefore, "a lot of thought has to go into … [capacity expansion] before … spending money on those things," explained Mr. Schmitter.

"In its early days, … the railroad industry in North America was very much like [how] Nikos [Nomikos] described the shipping industry today: … there were a lot of competitors; there was a real scramble for market share; people were building track like crazy and there was much more capacity than was justified by the volume that was being shipped. … [Heavy regulation followed with constraints on pricing and limited flexibility to adjust capacity to market demand. By the 1970s the railroads in the Northeast U.S. were bankrupt, and most railroads were struggling financially. In 1980, the U.S. Congress passed the Staggers Rail Act and in 1995 the ICC Termination Act which together, substantially reduced regulation, allowing more pricing flexibility along with the ability to abandon or sell lightly used lines. The reduced regulation also made it easier for carriers to merge, and there have been several rounds of mergers resulting in an industry that is more consolidated with seven Class I railroads. Similar changes in regulation occurred in Canada.] It's a very profitable industry now. All these 7 companies are very profitable. They are all public companies. BNSF is a wholly-owned subsidiary of Berkshire Hathaway.

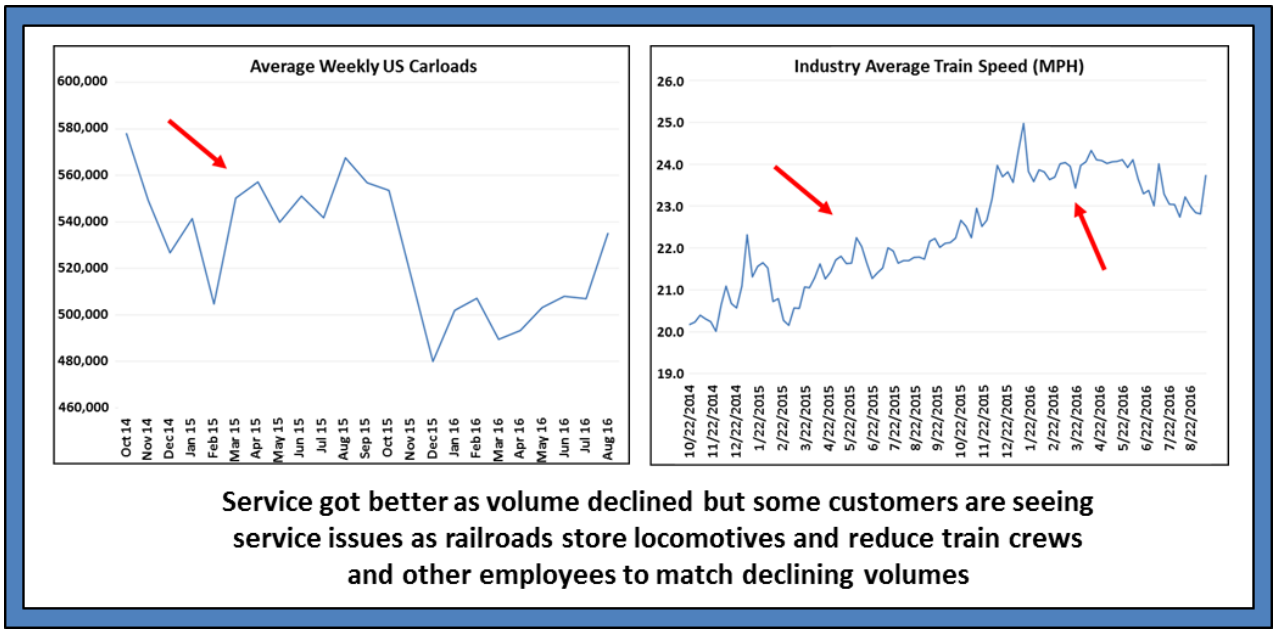
But Berkshire Hathaway itself is a public company so they have shareholders to answer to, and most of the capital requirements for these companies, just for them to stay in business [and] to keep pace with the way it is right now, is a few billion dollars a year, every year. So they consume a huge amount of capital. … [One] can see [that] they've got to generate the operating cash flow in order to … [cover their capital requirements.] The good news is they have it, and they do [make these expenditures.] [For the railroad companies,] it's really a choice … about [a] how much capacity [to aim for], [b] how much to invest in Cap Ex that would encourage both growth and sustainability of the current infrastructure, and [c] how much do … [they] want to return to shareholders in the form of share buybacks and dividends," stated Mr. Schmitter.

"If … one listens to the [company] conference calls with [equity] analysts, the questions the analysts ask are always about … three things. One is … [if] there will be overinvestment in capacity and the companies will start competing with each other again instead of acting like real good economic duopolists. [Investors] … are … [anxious] about business declines that … will create excess capacity and again encourage these companies to start competing with each other. … The third [concern] … is [about] additional regulation that might constrain their pricing power," continued Mr. Schmitter.

Rail Availability Risk

Given these tensions, railroad companies "want to manage the capacity or make sure their capital investment fits their projection of traffic growth, [which is] the volume that they [will] have to handle …, [and] all that is based on projections. [But] sometimes those projections are wrong. … If you look at just the recent past, … there was … congestion [and] … service issues. When volume … declined with the economy … [one] can see [in] the graph [on the next page in Figure 2] on the left [that] … service generally got better, the system got less congested, [and] more fluid. … Volume is still relatively low compared to what it was in 2014. But … [one] can see from the [graph on the right in Figure 2] … that the service level has started to drop off. Why is that? The system is more fluid and there's less traffic moving over the track, but as they start to pare down operations and capital investments -- locomotives are being stored -- train and engine crews and other services are being laid off [too]. When … [the railroads] lay off a train crew that usually means that a local train going every day is now going only three days a week so service starts to decline and clients are starting to see that all over the place," described Mr. Schmitter.

Figure 2
As Volumes Declined, Service Improved – Temporarily



Source: Slide 7 of Mr. John Schmitter's September 30, 2016 presentation to the JPMCC Research Council.

"There's … no government requirement like in utilities where the railroads have to have the capacity or maintain capacity to deal with service. … There's no … big backlog of standby assets that can respond to a short-term uptick in volume. The customers won't pay for it; the regulators don't require it; and the investors won't stand for it. So capacity is going to be matched to what … [the railroad companies] view as the projected traffic volume. What … [this] ultimately means [is] that … [there] will … [be] periods of good service and periods of bad service. … Citing 3 periods here: 1999-2000, 2005-2006, and most recently in 2013-2014, basically the volume was so high [that] the systems in a lot of places basically ground to a halt. The service became very inconsistent, transit times became longer, … and [there were] a lot of problems for [the] commodity supply chain. [For example, if one] worked for a public utility, [one was faced with] … running out of coal. … In 2013-2014, [the service issues were] blamed on … a really bad winter in Chicago. That was just an excuse. … [The] real reason was demand exceeded the capacity. … At the same time … [we] were still experiencing the growth in crude oil by rail, … [one] had a record grain harvest, which caused more grain to be moved than people expected, and … [one] had an uptick in the price of natural gas and that caused utilities to dispatch more coal generation, so [there was] demand for more coal," recounted Mr. Schmitter.

Expanding rail capacity is "not such an easy thing. Capital investment in track is years to plan and construct. … The lead time for locomotives is a year. If [one is] … short now, [then it will be] a year before … [one] can get another one. Even the hiring of train and engine service crews [is time consuming;] … to get somebody capable and up-to-speed is a six-month process. There are crews laid off now; … when volume picks up … [railroads] are going to want to hire those people back. Maybe they

are available; [but] maybe they have other jobs now. ... It can take a year before the train and engine service crew" can get to "ultimate productivity," warned Mr. Schmitter.

"The bottom line is that it is very difficult for the railroads to cope with rapid and unexpected increases in demand. … [A] 5-6% increase … [in] the current volume is really all it would take to bring a lot of portions of the system back to pretty much their … capacity" limit, explained Mr. Schmitter.

"The good news is that there are things … [that can be done.] The industry is in pretty good shape. They do have the operating cash flow to make those investments in capacity. They make good margins on the coal business that will support the capital investment. They will adjust the capacity to meet their projected demand. To the extent they are wrong, [one is] going to have those periods of relatively good service and periods of unexpected capacity shortages," predicted Mr. Schmitter.

"They will increase the rates as market conditions change. … [When companies] … are going to make an investment in a line or [a] locomotive, that investment has to be supported by the least profitable business. … An alternative to making additional Cap Ex is to raise prices on that least profitable business …," noted Mr. Schmitter.

Mr. John Schmitter (left), KEP LLC, in discussion with Professor James Hamilton, Ph.D. (right), University of California, San Diego, whom in turn is also a Co-Chair of the JPMCC Research Council, during the September 30, 2016 JPMCC Research Council meeting.

Conclusion

"The message here for practitioners is ... [one] can't just assume the service. … [One has] to realize that capacity may not be available at the moment … [that one] need[s] it. So if … [one is making decisions at] a utility … and you are taking 5 or 6 coal trains a week, [and then] gas prices get low, [and] now you are only taking 2 for the next two years, and [later] we have an uptick in the gas prices, and you want 5-6 trains a week [or] next month, that is probably not going to happen. … The result of that is you need to focus on more flexibility in supply, use other railroads, [and] other modes [of transportation.] … You may want to be holding more inventory than you would otherwise [have] wanted," recommended Mr. Schmitter.

He also recommended that companies that rely on rail should "[a] manage the railroad relationships carefully; [b] make … capital investments [themselves and] …, [c] make sure that … [one's] location is as efficient as possible for the [railroad] companies to serve."

Author Biography

JOHN SCHMITTER
President, KEP LLC (Colorado)

Mr. John Schmitter is the founder and president of KEP LLC. KEP LLC was developed to provide strategic, management and economic consulting services to industrial companies, energy producers, retailers and transportation companies. Mr. Schmitter is an expert in transportation issues. His specialties include transportation markets, pricing, yield management and competitive analysis, railroad operations, railcar fleet planning and management, transportation procurement strategies, education and expert witness testimony. Mr. Schmitter has worked with clients in many industries. He has made numerous speeches and presentations before various conferences and seminars and his comments have appeared in various trade publications. He has a Bachelor of Science degree in Business Administration from Northeastern University and an MBA from Pennsylvania State University.