Trending for 2019: RTA & Members' Economic Impact

An Update On Demand Forecast & Revamped Tie Trends & Reports

By RTA's Economic Team

Last year, the Railway Tie Association (RTA) laid the foundation for showcasing the tie industry's economic impact on the national economy. Furthermore, RTA member data was used by PricewaterhouseCoopers (PwC) to set the stage for action on permanent enactment of the short line railroad 45G infrastructure investment tax credit.

Before exploring the four separate 2018 Economic Impact Studies (EIS) in which RTA participated, a review of the revamped Tie Trends section of *Crossties* is in order. The 2019 preliminary RTA econometric forecast for tie demand will conclude this discussion.

Tie Trends & All New Monthly Reports

The basis for the redesign of Tie Trends, pages 20-22, comes from a complete overhaul of the Monthly Trends Reports published in the Industry tab at www.rta.org. Navigate there to locate three new reports: Purchases, Inventory & ISR Report (PDF); Purchases, Inventory & ISR Data (Excel); and Green Tie Historical Pricing Report & Analysis (PDF).

A few of the new graphs included in these documents now appear in Tie Trends. One of these is a histogram that rather dramatically chronicles Inventory to Sales Ratio (ISR) in a manner where the current ISR can be seen in relation to historical data (Figure 1).

This illustration points out the disturbing fact that ISR is at a historic low level compared to tie demand. In fact, a further small reduction would place ISR near the worst this measure has been since RTA began archiving data in 1987.

This could signal stress in the supply-side for months, or even years, going forward. And, if reports from the field are correct, log decks are so low, or in some cases non-existent, there doesn't seem to be an end in sight for that stress in the supply side.

Another new box graph (Figure 2) illustrates how this situation developed.

Quarterly pattern of production and purchases uses data from January 2000. Figure 2 shows data analysis within each quarter. It shows the median, upper quartile and lower quartile boundary. It also displays what the production and purchases were in each quarter of the reporting year represented by black points in relation to quarterly statistical values (a more detailed explanation on box graph navigation follows in the graph titled, "Box Plot Explained," Figure 3).

Figure 2 illustrates that even though purchases have remained at or above historical norms, production has been the exact opposite.

While there isn't room to reiterate all the reasons in depth, China, weather, log inventories, and sawmill distress remain key issues of focus as 2019 unfolds.

The new Green Tie Historical Pricing Report (Figure 4) also contains fresh new ways to review the impacts of low ISR. For example, in the last two graphs of the report, box plots illustrate RTA-adjusted Hardwood Market Report-reported tie prices, adjusted by PPI for all commodities. The last 12 months' average is in the fourth price quartile, well above the median (Figure 5).

Data plotted in this way provides a unique visual for how extreme lows in ISR can impact trends in green tie pricing in the future.

Another new graph (Figure 6) suggests a similar moderate correlation.

There is much more to be found in these reports. The fresh approach to the reporting and Tie Trends is one more way RTA is actively "e-moving" forward into the next 100 years of service to the tie industry.

The Importance Of Economic Impact Studies

The first of the four studies in which RTA participated and contributed is a study conducted for the Short Line Railroad industry by PricewaterhouseCoopers (PwC). This EIS estimates that short lines have a combined labor income and value-added impact of $10.3 billion. Combined, the labor employment across all direct, indirect and induced totaled $61 billion in 2016 (latest complete year of data).

For RTA members, though, there is something even more special about this EIS. PwC ➤

Figure 1

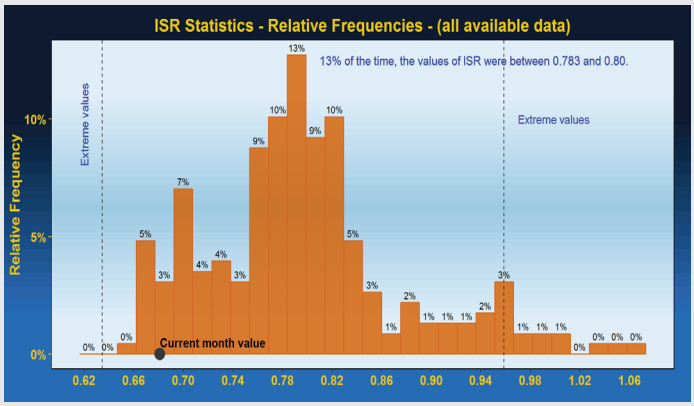
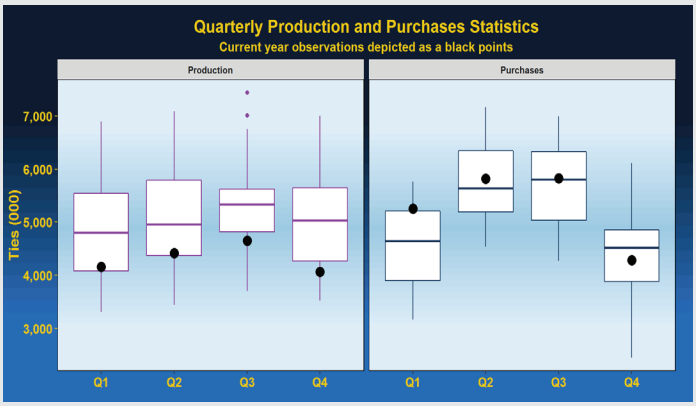


Figure 2



and the American Short Line and Regional Railroad Association (ASLRRA) came to RTA and asked to independently verify the forecasting model. The results of the audit suggested that when 45G was in effect, annual purchases of ties by short lines grew by approximately 1 million ties.

Once PwC signed non-disclosure agreements to obtain access to RTA's proprietary work, the RTA economic team worked with PwC auditors and economists to provide the data and methodology necessary to replicate the work. In the process, PwC verified the model and its results.

In fact, this audited finding was the second source highlighted in the PwC EIS. As a result, RTA and others may have greater confidence on Capitol Hill when describing the direct impact and importance of 45G on American small businesses across all tie production sectors (Table 1). The complete report is available at www.RTA.org.

NAM's RTA-Inforum & HF/Informa Studies

Both the National Association of Manufacturers-led Inforum EIS and the Hardwood Federation's Informa-led EIS produced similar economic impact outputs for the tie industry. These RTA part-funded studies found that the wooden railroad tie industry had a direct impact of $2.4 billion to the U.S. economy.

The two studies differed only in that the RTA EIS was developed as a standalone tie industry report (Figure 8), whereas the HF study included the entire hardwood industry's impact (especially important to note in the state breakouts).

With indirect and induced impacts included, the estimated economic value-added impact for the tie industry totaled ~$10 billion with employment totals a staggering 29,000 jobs.

Each study also produced economic impacts for a long list of individual states. All of these may be reviewed at **www.rta.org/publications.**

An example output table from the HF EIS for Arkansas (site of this year's RTA Field Trip), including all hardwood and wood preservation impacts (not just ties), listed the impact of the tie industry as shown in Table 2.

Figure 3

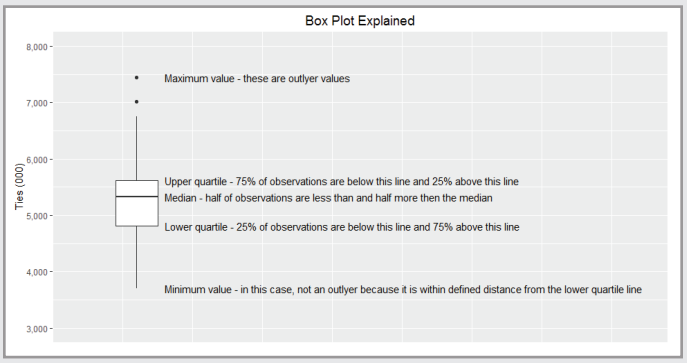


Figure 4

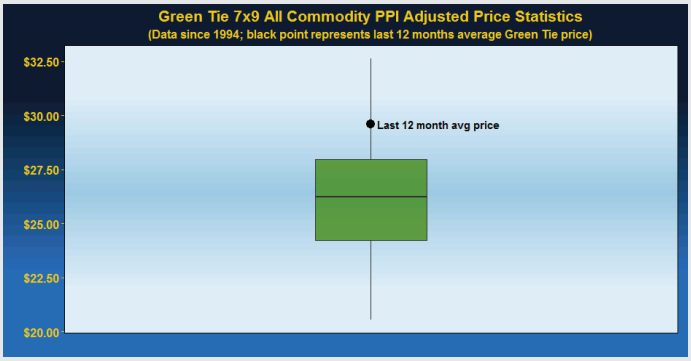
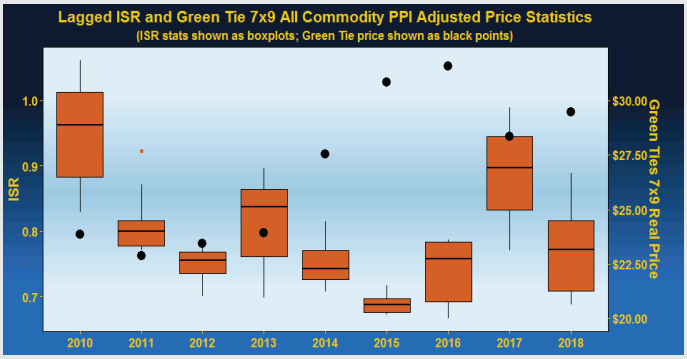


Figure 5



The Green Tie price is an average annual price for each year as shown on the x-axis. Each ISR boxplot is derived from 12 months of data (July through June). For example, the boxplot on the 2010 tick mark describes ISR data from July 2009 through June 2010—six months lagged to Green Tie price.

Figure 6

When the ISR value decreases in defined timeframe, the tie price tends to increase in the same interval. The opposite can be observed as well. This is a sign of negative correlation because the values/lines move in the opposite direction.

What's most important about both of these studies is that the results can be used both nationally and locally to tell the tie industry's story to legislators and regulators. This is becoming increasingly vital as RTA and members offer a message of renewability and sustainability, now coupled with the direct human and economic impact, for legislative initiatives and in state and national environmental agencies.

All members are encouraged to make an effort to do a deep dive into how this critical data can be utilized to enhance the hardwood and tie message to regulators and legislators.

Entire Rail Supply Industry EIS

Last, but certainly not least, RTA contributed data and financial support for the Railway Supply Institute's national rail supply industry's EIS. The incredible power of the entire rail supply chain and its direct, indirect and induced impacts totaled over $74 billion in impact to the U.S. GDP.

A great deal of this impact—21.2 percent—came in the manufacturing sector. This Oxford Economics-conducted study also provided a comprehensive look at rail supply chain impacts at the state level.

The direct comparisons between the economic impact studies are difficult since each study had its own specific focus. But, added all together, the tie industry now has powerful material it may wield in both D.C. and around the country.

Members should access and utilize these reports to help advance the causes important to the interests of the industry.

2019/2020 Tie Demand Forecast

Since not all data for 2018 are available, RTA's official annual forecast of tie demand isn't available until the March/April issue. However, the preliminary work shown in Table 3 suggests that fundamental demand should increase marginally for 2019—23.1 million ties vs. 22.7 million for 2018, or 2.0 percent.

Readers may note that the forecasted demand for 2018 was higher than actual purchases. Whereas the model assumes a reasonable level of supply, and while in the first few months the supply of ties looked consistent, production started to deteriorate rather quickly in the second half of the year.

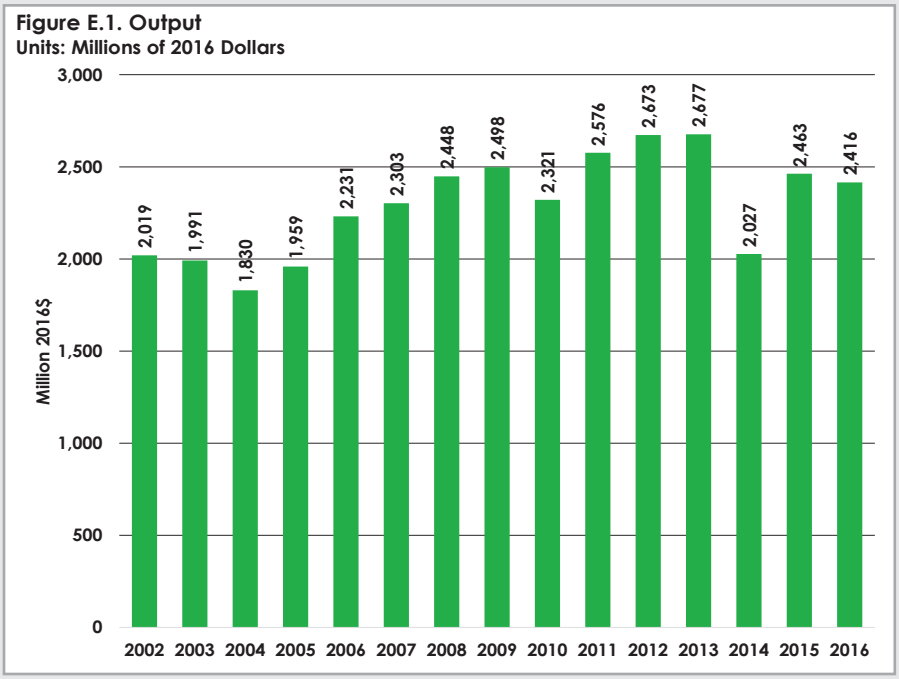
Table 1

Direct, Indirect, and Induced Economic Impacts of the US Short Line Industry, 2016

Item	Direct Impacts	Indirect and Induced Impacts		Combined Impacts
		Operational Impacts	Capital Investment Impacts	
Employment*	17,100	33,370	10,240	61,070
Labor Income ($ millions)**	$1,129	$2,035	$616	$3,780
Value Added ($ millions)	$2,228	$3,373	$948	$6,549

Source: PwC calculations using the IMPLAN modeling system (2016 database). Note: Details may not add to totals due to rounding. *Employment is defined as the number of payroll and self-employed jobs, including part-time jobs. **Labor income is defined as wages and salaries and benefits, as well as proprietors' income.

Figure 8



Source: "An Economic Analysis of the U.S. Wooden Railway Tie Industry" report prepared for RTA in partnership with Inforum and NAM Center for Manufacturing Research. Output of RTA-related industries expanded steadily during the mid-to-late 200s. Growth continued in the early 2010s but endured a steep decline in 2014. Following a rally in 2015, a small dip in 2016 left output at $2.4 billion. Between 2002 and 2016, RTA-related output grew at an average annual rate of 1.3 percent per year.

Table 2

State of Arkansas
2016 Economic Contribution Provided by Select Hardwood Products

Sector	Jobs (#)	Gross State Product ($ millions)	Output ($ millions)
Sawmills	12, 511	$912.2	$2,286.5
Wood Preservation	1,245	$148.9	$393.2
Rail Ties	233	$27.9	$73.6

Sales of hardwood products added $5.3 billion in value to the Arkansas economy in 2016, according to an Agribusiness Consulting study commissioned by the U.S. Hardwood Federation. For every $1 million in output of hardwood products, 5.4 jobs and $0.41 million of GSP are supported within Arkansas.

Table 3 - **Preliminary RTA Forecast**

New Wood Crossties (in thousands)			
Year	**Base**	**Upside**	**Downside**
2017	23,412 (actual)	n/a	n/a
2018	21,184 (actual)	n/a	n/a
2019	23,071	23,316	22,055
2020	23,382	23,879	22,377

The September/October edition of *Crossties* pointed to these rapidly decreasing inventory levels and possible disruptions in the marketplace.

On the other side of the equation, purchases were strong in the first half of the year but then also lagged in the second half, especially in the last quarter (see page 21, second graph). Was the forecasted number of ties not purchased because they were not available, or did the forecast fail to estimate the actual demand of 21.2 million for reasons that are as yet unclear? Hence, year-end data is needed to determine what this may mean for 2019 demand.

The problem the industry faces is understanding the full impacts of desperately low inventory even in the face of softer purchasing throughout 2018. Given this, coupled with China's slowing economy and the trade dispute's impacts on hardwood sawmills, vision is clouded for 2019 as well. Has there been a secular change as a result of the PSR mantra or a change due to increasing use of more advanced treating technologies (i.e., effects of dual treatments accruing sooner rather than later)? Only time will tell.

However, in looking forward one thing is painfully obvious for tie supply. Even if tie demand remains equal to 2018 at 21.2 million ties, there are nowhere near enough ties in air-dry yards to fill the need. Using a 21.2 million tie demand and RTA's Interactive Tie Planning tool, available at **www.RTA.org**, and plugging in a modest increase in green tie procurement of 7 percent for 2019, the Inventory-to-Sales Ratio plummets from the current unhealthy 0.67 to 0.55 by the end of 2019.

It would take a massive 20 percent upside in procurement and flat demand for ISR to get back to 0.66 by year-end. Is this possible? Tie production was off by 16 percent for 2018, so capacity should be there to do it. But, there are so many other factors in play, it is impossible to know.

Maintaining healthy air-dry inventories for a product that takes a lead time of six to nine months at a minimum from the log to the track, is vital to the health of railroad maintenance operations. Once ISR gets to a certain critical level, it is very, very difficult to rebuild those inventories.

With log decks paltry in many tie-producing regions, it appears the supply-side soup is reheating on the stove and it will be much too easy to slip into it. As the second quarter nears, RTA's economic work may find clarity with which to base better guidance.

Remember that the preliminary model suggests fundamental demand of 23 million ties for 2019. If this is truly the underlying level of need, then a wild ride in marketplace conditions not only for 2019 but also for 2020 and 2021 is in the offing. ■

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To review these economic impact studies in full, visit **www.RTA.org > Resources > Economic Impact Studies.**