A New Era For Tie Demand?

Five-Year Forecast Sees Steady Growth

By Jim Gauntt and Fred Norrell

In this article, the Railway Tie Association (RTA) is attempting to extend its forecast of crosstie installations and purchases across a longer timeline. With the economy emerging from elongated effects of recession, should producers expect booming growth, or will the up and down cycles that have been the historical norms re-emerge? Most importantly, if real industry growth lies ahead, will it be sustainable?

The United States is clearly recovering from the effects of the 2001 recession. It was mild in terms of depth, including three down quarters. In fact, real gross domestic product (GDP) actually increased 0.3 percent during the year, whereas during the 1982 recession GDP fell 2 percent and decreased 0.5 percent during the 1991 slowdown.

While the depth of prior recessions was greater than that of 2001, the bounce-back in previous recessions was faster; in comparison, the current recovery seems to be in slow motion.

Job growth has been especially reluctant. Whereas real GDP turned upward in the fourth quarter of 2001, this time around job growth took another 26 months to appear. Compare that to the 1991 recession when job growth began to occur after only 14 months following the first quarter of increasing GDP.

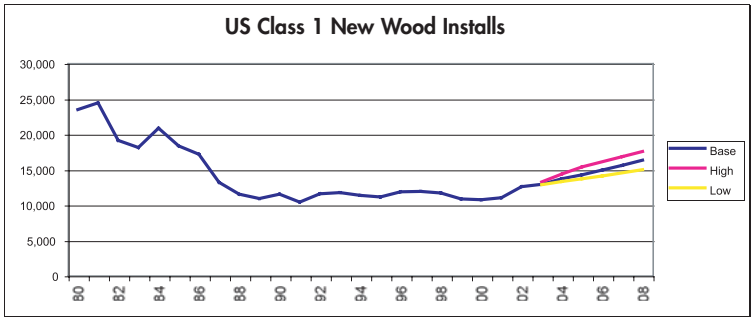
Because of this, questions have been raised as to whether the recovery will be balanced and sustainable. In this context, the well-publicized issue of household debt, which increased 11 percent in the year ending September 2003, could have significant impact on future economic growth. The big question is whether consumer spending will continue at its current pace with large repayments outstanding.

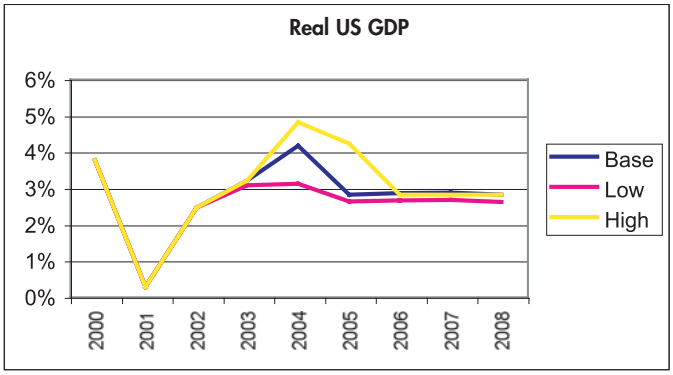
A less obvious issue is the relative cost of capital and labor. The cost of employing workers has become somewhat heavy, with health insurance and pension provisions playing a big role. Yet one can find bargains on computers, communications equipment, robotics, trucks and the like.

Furthermore, a business can finance such equipment at a low cost. Banks' prime lending rate is at 4 percent, the lowest since 1959. AAA corporate bonds are at 5.54 percent, the lowest since 1967. These low rates have encouraged investment in business equipment, which boosts productivity and profits.

Faced with this reality, businesses are directing resources into capital rather than labor. It seems job growth will be modest by past standards. But, again, will meager job growth sustain consumer spending or derail the recovery? The sustainability issue must surely figure into current economic forecasts.

Yale University's Fair model* provides one source of information about that issue and is highly regarded by economists. This model indicates that unemployment rates will fall from 6 percent to 4.9 percent by 2005 but will begin rising and reach 5.18 percent by 2007. The model further predicts 3.5 percent growth in consumer spending in 2003, followed by a surge of 4.2 percent in 2004, then a return to growth rates nearer 2 percent in 2005. If this prediction holds true then it suggests that job growth and growth in consumer spending will not ebb to a





point that it knocks the wind out of this recovery's sails.

The Fair model forecast has been chosen as the beginning point of our five-year forecast of crosstie market activity. Other forecasts and assumptions were used to construct high and low case scenarios, as explained below.

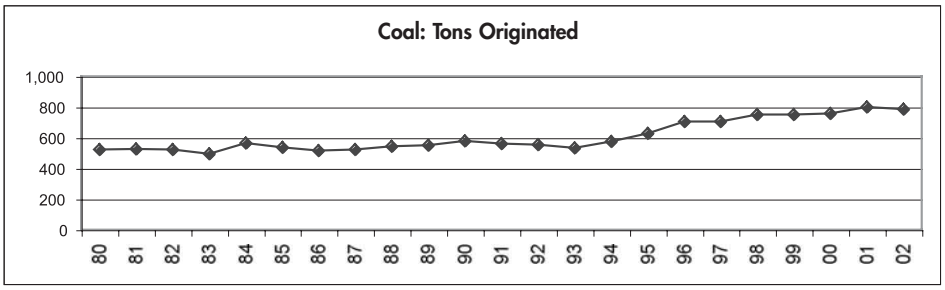
The Forecasting Methods

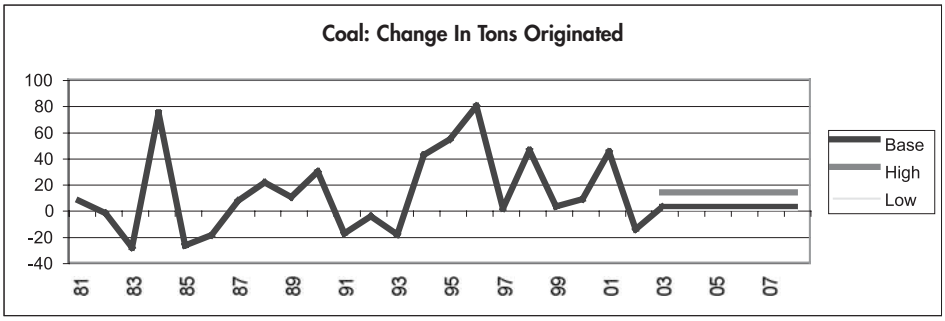
These projections were assembled as follows: the first step involved regression modeling of tie installations made by U.S. Class 1 railroads, which have been found to depend in part on miles of track owned by the railroads and on the annual ton miles of freight those tracks are required to handle. Freight has been found to depend, in part, on real U.S. GDP and on the change in coal shipments.

The second step involved the estimate of tie purchases from RTA members, a broader measure that captures the vast majority of the North American market and includes U.S. Class 1's, purchases by railroads in Canada and Mexico, U.S. regional and local railroads, transit companies, contractors, and others. This projection is made by adding on trended values for the non-U.S. Class 1 purchasers.

The Cases: High, Base And Low

Three cases have been created and are discussed below. These cases represent what are judged to be feasible outlooks for the U.S. economy, the coal industry, the railroads and the wood crosstie industry. Where forecasts were not available, historical data was used to structure our assumptions.





Real GDP

The "high" case forecast came from the Congressional Budget Office, which published these numbers Jan. 26. The "base" case forecast comes from the Fair model, an econometric process that was updated in October 2003 and subsequently used to produce RTA's forecast. The "low" forecast was devised by RTA by assuming a weak recovery in 2004 and by further subtracting 0.2 percentage points from the base case annual growth rates. Thus, the low case forecast is assembled around anemic growth in the U.S. economy and is much weaker than what most economists are expecting.

Coal Shipping (Change In Tons Originated)

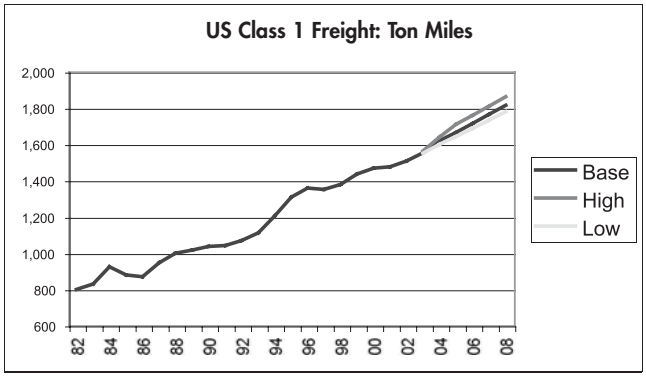
With the maturation of the Powder River Basin project, it is thought that coal shipments may have reached a point of relative stability, as occurred during the period from 1981 to 1993. Accordingly, the low case assumes no change in shipments, while the base case assumes shipment changes equal to the average from 1981 to 1993, and the high case assumes shipment changes equal to the average from 1981 to 2002. It is interesting to note that recently the Federal Railroad Administration approved loans to DM&E Railroad Corp. to upgrade its lines to haul more Powder River Basin coal. This might suggest that at least the base case assumptions on coal shipments should be considered. Further, if the U.S. dollar falls against other world currencies, coal exports could rise once again, arguing for even more coal shipments via rail.

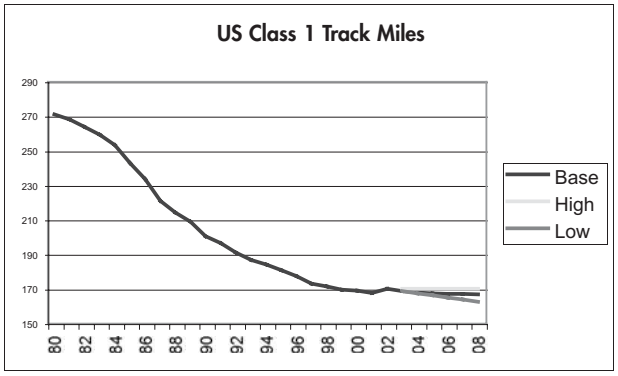
Freight (Ton Miles Per Year)

Freight forecasts are the results of a regression equation, a function of real GDP and change in coal shipments. Of course, freight growth is higher in the high case and lower in the low case.

Track (U.S. Class 1 Railroad Track Owned Miles)

Class 1 operating track has been diminishing for quite a number of years, as large railroads weeded out less profitable segments. The base case assumes a continuation of this non-linear trend, while the low case assumes annual track reductions equal to the average of the past six years. The high case assumes no further track





reductions. Separately, a recent survey of Class 1 railroads uncovered that the trend for any future track rationalization would be in the form of leases to other operators. In such a case, that track would still have to be maintained with Class 1 standards and thus, even if track reduces under the Class 1 banner head, the maintenance on those lines would continue since heavy trains will still run on that track.

Tie Installations By U.S. Class 1 Railroads (Number Per Year)

Installation forecasts are the results of an equation and increase with growth in freight and track. Since 1988, track has decreased but freight has increased, with the two forces roughly in balance. Track appears to be reaching a relatively stable position, but freight movement by rail continues to grow with the economy; thus, installs increase in all of the forecast cases. This is the major result from the current analysis. Thus, the industry is thought to be on the threshold of expansion, even though some industry observers have expressed reservations about further growth.

Purchases From RTA Members (Number Per Year)

These are new wood crossties and include ties purchased by U.S. Class 1 railroads, Canadian and Mexican railroads, U.S. local and regional railroads, and contractors, transits, and others. As noted above, the purchases projections are produced by adding regression forecasts of U.S. Class 1's and trend projections of other buyers. All three cases use the same trend values for the other buyers.

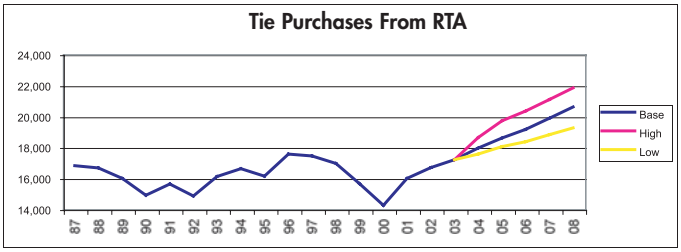
Forecast Disclaimer

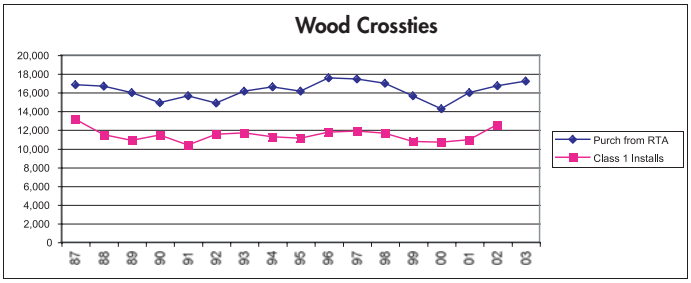
These projections do not account for the possibility of random shocks in any specific year. For example, railroads may be confronted with budget problems stemming from equipment purchase obligations, rail purchases or fuel price increases and may scale back on tie purchases in a given year. The regression equations, being formed from historical data, average the "shock"

years with normal years, and their projections retain this averaging characteristic.

Results Of The Forecasts

After more than a decade of little or no growth, our forecasts depict growth during the years 2004 through 2008. The base case calls for purchases to grow at an average annual rate of 3.7 percent, the high case grows at 4.9 percent, while the low case at 2.3 percent. At first glance, these predictions look quite optimistic, because nine of the past 16 years have seen negative results. However, from 2001 to 2003, the average annual growth rate in tie demand was 6.6 percent.





Going forward, this model shows that the amount of freight hauled is likely to expand with the economy as it has for years. Second, railroads appear to have employed some winning strategies and are hanging on to their increased market share. Furthermore, track reductions, if they occur, are predicted to be small, and the lost track will still be operated as feeder lines to the Class 1's. Thus, as railroads increase shipping activity, maintenance needs will increase, and RTA predicts that crosstie producers will see a share of this business.

The question, of course, is how much new business will come to producers of ties. If observers take the low case as their starting point and even factor in a significant negative random shock event or two, new wood tie purchases could still well exceed 19 million ties by 2008. And this does not even account for what happens if short lines are awarded federal funds for upgrading track to 286,000-pound standards.

Does this forecast predict a new golden age for railroads and tie suppliers both? A lot depends on the U.S. and world economies and the railroads themselves. Railroads must continue to hold on to and increase their share of the transportation market without any major structural changes occurring in their operations. And, of course, more progress in the war on terror, greater cooperation between world players, and less government spending at home would go a long way toward seeing such a scenario unfold. But even if such an age does not materialize, the writing is on the wall that railroads' appetite for maintenance products will likely grow over the next five years. §

**The Fair model is maintained at Yale University and made available to all via the Web. It was initiated by Dr. Ray C. Fair, Professor at the Cowles Foundation, Department of Economics at Yale University and Fellow, International Center for Finance at Yale.*