

# How The Data **STACKS UP**

## RTA Forecast Model Predicts Continued Growth In 2006



**By Fred Norrell**

The 2006 Railway Tie Association (RTA) forecast calls for continuing growth—in the economy, in railroad freight and in new wood crossties purchased. Recent data looks good: third quarter GDP growth is estimated at 4.3 percent, U.S. Class 1 freight is up 2.4 percent through November 2005 (this is an increase over a very strong 2004), and new wood crosstie purchases from RTA members have increased 4.9 percent for the past 12 months and is just short of 19 million.

The U.S. economy has again demonstrated impressive resilience, bouncing back from hurricanes and taking in stride high oil prices. The dollar has demonstrated surprising strength, and financial markets are reasonably stable.

One concern is the relatively flat yield curve, which is often a sign of financial constraint on the economy. As of this writing in late December 2005, there is less than a one percentage point spread between three-month and 30-year bonds. Apparently, bond market participants are not expecting a significant increase in inflation.

Other concerns emerge as the housing boom ages. If construction slows significantly, there should be a drop in sales of brick, lumber, new carpet, appliances, paint, fixtures, etc. If home refinancing loses its luster, expect a slow-down in consumption spending.

Yet, other concerns emanate from the growing twin deficits of foreign trade and the federal budget. The United States is importing (net) large amounts of goods, and foreign parties appear content to take payment in the form of U.S. bonds and equities. How long this will continue is far from clear. And, finally, will inflation be controlled? These are disturbing uncertainties that must be considered by economic forecasters.

A forecast of the economy is the starting point of the business forecast, and the former is provided by Yale University's Fair model. Briefly, real GDP is predicted to grow 3.2 percent in 2006, slowing to about 2.4 percent during the next few years.

The U.S. Department of Energy produces forecasts of energy prices, diesel being among them. Their outlook puts diesel higher in the next two years. But, on a constant dollar basis, price peaks in 2005.

These two forecasts form the basis for the business forecast that follows; linking them is RTA's econometric model—a system of equations that has been estimated from historical data. The model has two parts: one for North American Class 1 railroads and one for the "small market," which is composed of short line railroads, contractors and other tie purchasers.

According to the model, Class 1 railroads purchase more ties when freight movement increases and when miles of track increase. In recent years, track has decreased slightly, but this effect has been overwhelmed by rapid growth in freight. Expected track reductions are reported in RTA's latest exclusive annual survey of railroads, and a continuation of this is assumed in the forecast (see Table 1.)

**TABLE 1: North American Class 1 Market**

YEAR	REAL GDP	REAL PRICE OF DIESEL	COAL	FREIGHT	TRACK (thousands of miles)	NEW WOOD TIE PURCHASES (thousands)
2004	4.4%	24.9%	2.8%	7.0%	167	14,059
2005	2.9%	45.5%	8.1%	7.6%	165	15,012
2006	3.2%	-2.9%	2.4%	1.5%	165	16,498
2007	2.1%	-4.7%	1.4%	1.3%	163	16,500
2008	2.4%	-4.2%	1.7%	2.3%	161	16,612
2009	2.7%	-3.8%	2.0%	2.6%	160	16,906

The Class 1 freight equation indicates ton-miles of freight increases with real U.S. GDP, real diesel price, and (change in) tons of coal shipped. Real GDP is a measure of the volume of commerce—of which freight is an essential element—so they move together. When diesel fuel gets expensive (in real terms), freight tends to shift from trucks to rail.

Coal makes up 35 percent of North American Class 1 carloads originated; thus, significant changes in coal have an immediate impact on freight. The RTA coal equation indicates coal shipments increase with real GDP (market growth) and increase with the real price of diesel, indicating some fuel-switching behavior probably by electric generating firms. Table 1 summarizes all of this data as well as the model's forecast of ties purchased.

Freight increased dramatically in 2004, and the model predicts a repeat in 2005. The significance of this is that tie purchases have also been lifted to a higher plateau. In summary, a slight drop in projected track miles is more than offset by a large expansion in freight volume, yielding a U.S. and Canadian Class 1 tie purchase prediction of 15 million in 2005, then about 16.5 million and growing in the following years. This would be the highest level of purchases in about 18 years.

The other part of RTA's forecasting model is directed at the "small market," which is composed mostly of short line railroads. According to the model, their tie purchases are driven by U.S. non-durable manufactures, Class 1 track reductions (some of which short lines snap up) and changes in the real price of diesel fuel.

U.S. non-durable manufactured goods have been in the slow lane for the past decade, partly due to the modern economy's transition from goods to services and partly because of increased international competition. This limits increases in the volume of non-durable freight, especially significant for the regional and local railroads.

The equation for real non-durables links its growth to that of real GDP. In the tie purchase equation, nearly stagnant non-durables and small track additions are countered by a projected easing of real diesel price in 2006 so that the projection calls for about 4 million ties purchased for each of the years from 2006 to

**TABLE 2: The "Small Market"**

YEAR	REAL NON-DURABLE U.S. MANUFACTURING	ABANDONED CLASS 1 TRACK	REAL PRICE OF DIESEL	NEW WOOD TIE PURCHASES (thousands)
2004	2.2%	1.76	24.9%	3,939
2005	-0.4%	1.84	45.5%	3,952
2006	0.1%	0.83	-2.9%	4,069
2007	-1.1%	1.65	-4.7%	4,150
2008	-0.4%	1.63	-4.2%	4,105
2009	0.1%	1.61	-3.8%	4,107

2009 (see Table 2). According to RTA estimates of small market purchases, this would be the highest level attained since the mid 1990s.

Thus, total purchases from RTA members, as forecast by models, is 19 million in 2005, 20.5 million in 2006, with modest growth thereafter (see Table 3).

To put these prognostications in perspective, Class 1 purchases in 2006 and subsequent years is projected to be higher than any year since the 1980s. This forecast excludes any increases from regional and local railroads that might be stimulated by recently legislated tax credits. Bottom line: The models predict a fast-growing market for new wood cross-ties. Models should not be used as a substitute for judgment but rather as a starting point to organize the various forces that bear upon the object of interest. Therefore, a companion article follows that takes into account survey data and other factors not incorporated in the computer model and in doing so sheds additional light on what could happen in 2006. §

**TABLE 3: Forecast Summary**

YEAR	New wood cross-ties in thousands			Percentages		
	TOTAL	CLASS 1	SMALL MKT	TOTAL	CLASS 1	SMALL MKT
2004	17,998	14,059	3,939	9.3%	3.5	—
2005	18,964	15,012	3,952	5.4%	6.8	0.3
2006	20,567	16,498	4,069	8.5%	9.9	3.0
2007	20,650	16,500	4,150	0.4%	0.0	2.0
2008	20,717	16,612	4,105	0.3%	0.7	-1.1
2009	21,014	16,906	4,107	1.4%	1.8	0.0

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