

Montana R/VC Analysis Using the STB Uniform Railroad Cost System (URCS)

Much of the rail discussion recently has focused on railroad revenue to variable cost (R/VC), specifically what constitutes an accurate calculation and how valuable it is as an indicator of rail captivity. The Christensen Report, commissioned by the Surface Transportation Board (STB) and published in November 2008 to study the U.S. rail freight industry, finds a very weak correlation between R/VC and rail captivity stating, “regulatory changes that would establish R/VC tests as the sole quantitative indicator of a railroad’s market dominance would not be appropriate.”

The STB, in the late 1970’s and early 1980’s, developed a Uniform Railroad Cost System (URCS) used to estimate variable and total unit costs for Class I U.S. railroads. URCS is used by the STB and others in making determinations of rate reasonableness. While we agree with the Christensen Report that R/VC alone should not be used exclusively to determine market dominance, if used accurately, URCS calculated R/VC’s gives everyone from the STB and rail analysts to railroads and growers a common platform from which to start further discussions.

The URCS model is publicly available and can be downloaded from the STB website. The current model was released in early November 2008 and contains board approved 2007 costs of capital by railroad. Since URCS costs are updated annually, calculations using the 2007 model will be most accurate for RVC’s that also use 2007 revenue, including tariff rates and average 2007 fuel surcharges. Similarly, the 2006 URCS model, without taking current cost and revenue adjustments into account, will only be accurate for R/VC calculations using 2006 tariff rates and fuel surcharges.

To help growers understand how R/VC’s are calculated, MGGA has conducted extensive analysis for many Montana elevator locations. The data used to determine R/VC for a particular move using the URCS model includes the following:

1. The Class I railroad being used for the move (used BNSF in all calculations below)
2. Distance of the move in miles (from origin to termination)
3. Shipment type (selected originate & terminate)
4. Number of cars used in the particular move (ie: 110-car shuttles, 48-car, 26-car, single-car)
5. Type of car (covered hoppers for MT grain moves)
6. Freight car ownership (railroad or private; MT grain is primarily moved in BNSF owned cars)
7. Shipment in tons per car (most shuttle wheat cars out of MT use heavier axle BNSF cars that haul 112 tons of wheat per car while singles, 26’s and 48’s use 101 tons per car)
8. Commodity being hauled (0113 Grain for our calculations)
9. Total shipment charge (includes appropriate tariff rate plus fuel surcharges. The STB has also indicated they will include any trip incentives used by the RR in the shipment.)
10. Type of train (single, multiple, or unit)

A few clarifications are necessary to explain the data we used below to determine a total shipment charge. The tariff rate for a move varies not only with the date and train size but also with the weight of the cars used in that move. As indicated above, most shuttle wheat is moved out of MT using heavier axle, 286,000# cars, while singles, 26-car and 48-car trains primarily use the lighter, 268,000# cars. In addition, railroad fuel costs from MT facilities to Portland export are calculated and reported using the shortest distance to the coast, in this case to Seattle, WA. Accordingly, we used that mileage in calculating the fuel surcharge to be included in the total shipment charge.

The following are examples of our analysis using selected locations from MT.

R/V C Calculations Using 2007 URCS

Wheat Shuttles to Portland Export

Origin	Shipping Distance	Fuel Distance	Tons/car	Dec 08 Fuel Surcharge	Dec 08 Tariff Rate	Shipment Charge minus \$200/car incentive	URCS R/VC
Carter	909	854	112	\$0.59	\$2,645	\$324,375	222%
Collins	839	784	112	\$0.59	\$2,595	\$314,332	231%
Grove	969	914	112	\$0.59	\$2,693	\$333,549	215%
Havre	890	835	112	\$0.59	\$2,830	\$343,492	239%
Macon	1089	1034	112	\$0.59	\$3,461	\$425,817	246%
Pompey's Pillar	1054	999	112	\$0.59	\$2,674	\$336,975	201%
Rudyard	849	794	112	\$0.59	\$2,737	\$330,601	241%

Wheat 48-car trains to Portland Export

Origin	Shipping Distance	Fuel Distance	Tons/car	Dec 08 Fuel Surcharge	Dec 08 Tariff Rate	Shipment Charge	URCS R/VC
Carter	909	854	101	\$0.59	\$2,927	\$164,681	158%
Collins	839	784	101	\$0.59	\$2,881	\$160,491	166%
Grove	969	914	101	\$0.59	\$2,971	\$168,492	153%
Havre	890	835	101	\$0.59	\$3,096	\$172,255	169%
Macon	1089	1034	101	\$0.59	\$3,575	\$200,883	163%
Pompey's Pillar	1054	999	101	\$0.59	\$2,953	\$170,036	142%
Rudyard	849	794	101	\$0.59	\$3,011	\$167,014	171%

Wheat 26-Car Trains to Portland Export

Origin	Shipping Distance	Fuel Distance	Tons/car	Dec 08 Fuel Surcharge	Dec 08 Tariff Rate	Shipment Charge	URCS R/VC
Fort Benton	925	870	101	\$0.59	\$3,271	\$98,392	172%
Hardin	1080	1025	101	\$0.59	\$3,368	\$103,292	156%
Plentywood	1207	1152	101	\$0.59	\$3,991	\$121,438	165%
Poplar	1105	1050	101	\$0.59	\$3,903	\$117,585	174%

Wheat Single-Car Trains to Portland Export

Origin	Shipping Distance	Fuel Distance	Tons/car	Dec 08 Fuel Surcharge	Dec 08 Tariff Rate	Shipment Charge	URCS R/VC
Fort Benton	925	870	101	\$0.59	\$3,321	\$3,834	141%
Hardin	1080	1025	101	\$0.59	\$3,418	\$4,023	131%
Plentywood	1207	1152	101	\$0.59	\$4,041	\$4,753	142%
Poplar	1105	1050	101	\$0.59	\$3,953	\$4,605	147%

R/VC's determined using the most current URCS model available are only as accurate as the data that has been used to build the model. As mentioned above, the 2007 URCS model uses railroad costs of capital through 2007 while the 2006 model uses costs through 2006. Using current, Dec 2008, BNSF tariff rates and fuel surcharges in the 2006 URCS model results in R/VC values on wheat shuttles out of Montana approximately 40 percentage points higher than those determined using the 2007 model.

Neither the 2006 nor 2007 URCS model alone is entirely accurate for determining R/VC's based on current costs and revenue. A more precise determination that takes into account the railroad's increased costs and/or higher revenues through 2008 can be achieved using a cost adjustment factor. BNSF is required to submit a financial report to investors every quarter. Their 3rd quarter 2008 investor's report shows an increase in operating expense per gross ton mile of 16.1% from their operating expense reported at the end of 2007. Applying this cost escalator to the total move variable cost determined by the 2007 URCS model results in R/VC's up to 30 percentage points lower than those shown in the tables above for wheat shuttle moves out of Montana.

If the URCS model is to be used consistently in determining accurate R/VC's for rail analysis, then the STB should be required to maintain the model using more current costing data. Railroads are required to report their cost information quarterly, but the URCS model is only updated yearly. By the time new cost data is uploaded into the model, R/VC calculations can be up to 2 years old if no other cost adjustment is used.