Water-Compelled Rates and Available Navigation in the Upper-Mississippi and Illinois River Basins: An Update

The Tennessee Valley Authority

And

The Center for Transportation Research
The University of Tennessee

February 2007

1. Introduction

For more than a decade and a half, the US Army Corps of Engineers (Corps) has been measuring the effects of the competitive relationships that exist between railroad pricing and the availability of commercial navigation. The existence of these relationships is, in fact, quite predictable given the substitutability of the two modes in the movement of many lower-valued, bulk commodities. Nonetheless, the degree of substitutability between rail and barge fluctuates over time, with temporal changes in factor prices, the emergence of new technologies, and the demands placed on each mode by other freight users.

In 1995, the Rock Island District of the Corps contracted with the Tennessee Valley Authority (TVA) for an evaluation of what have come to be called the "water-compelled" effects of Mississippi and Illinois River navigation. This investigation revealed more than one billion dollars in annual savings to railroad users that were attributable to the competitive impact of the two river systems.[1] More than half of this amount ($506.8 million) was associated with savings in the movement of coal. Substantial savings were also observed in the movement of regional grain products, specifically, corn, soybeans, and wheat.[2]

In 1995, however, railroad capacity was still, to some degree, under-utilized in many regions, so that the need to attract and retain traffic through the manipulation of rates was substantial. Today, however, railroad capacity in many traffic lanes is tremendously scarce and many rail carriers have publicly announced that there is no need for additional traffic and that they intend to price accordingly.[3] Given this pronounced change in strategic interest, as well as significant changes in many of the markets for commodities traditionally served by both barge and rail, the Corps has requested that TVA replicate its 1995 water-compelled rate study.

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[1] See, "Rail Rates and the Availability of Water Transportation: The Upper Mississippi Basin," Tennessee Valley Authority, October 1997

[2] For the most part, water-compelled rate savings represent a *transfer* of wealth from railroads to commodity shippers rather than any sort of efficiency gain. Accordingly, these benefits are almost entirely Regional Economic Development (RED) in nature.

[3] Specifically, Matt Rose, BNSF's president and CEO has made this statement publicly on a number of occasions.

The balance of the current document documents this latter effort and describes the newly obtained set of estimation results. Section 2 describes the very few differences that exist between the 1995 methodology and the techniques used to generate the current set of results. Section 3 summarizes current findings and the document concludes with Section 4 which summarizes the current findings and provides some suggestions regarding future trends.

2: Methodological Modifications

To the extent possible the analytical techniques used within the update were exactly those employed in the 1995 study. Consequently, the reader is directed to the original documentation provided in the final 1997 study report.

The most substantial methodological change surrounds the treatment of railroad coal movements. For most commodities, both past and present studies use the county-level distance to the nearest navigation facility as a proxy for the competitive influence of commercial navigation.[4] However, beginning with a Missouri River basin analysis performed in 2002, navigation is assumed to only have an impact if the receiving utility (or other user) is located on the waterway in question.[5] When this information is not immediately available, a facility location within a county that is on the waterway is used as an alternative.

The current analysis also modifies the measurement of shipper distances to water for non-coal commodities. Initially, water-compelled rate analyses used Euclidean (straight line) distances to the nearest navigable waterway as the operative measure of access to commercial barge transport. Clearly this measure is suboptimal in a number of respects. It ignores the locations of actual barge loading facilities, the commodities handled by those facilities, and the circuitry of highway routings. TVA remedied this deficiency in 1999 by developing county-

[4] Given the railroad origin and destination, the use of an navigation alternative would require land-side moves to and from the waterway. Presumably, the primary waterway movement is nearly always cheaper than the line-haul rail movement, but the water-related land-side moves to and from the river quickly erode the line-haul savings. Thus, rail movements that begin and end nearer to (rather than farther from) the river are most likely to be affected by barge competition.

[5] See,"Observed Railroad Rates and Available Missouri River Navigation: An Update," Tennessee Valley Authority, February 2002.

specific data describing actual highway distances to four categories of navigation terminal facilities – coal, liquid, dry bulk, and general commodities. The current analysis provides the second actual application of these data to water-compelled rail rate estimations.[6]

The only other major changes revolve around the definitions of dichotomous carrier-specific variables. The estimations account for the identity of the originating railroad through the inclusion of these variables.[7] The set of relevant carriers has changed substantially over the eleven and one-half years since the original study. Most notably, Conrail no longer exists, having had its assets purchased by both CSX Transportation and Norfolk Southern (NS) Corp. Additionally, at the time of the 1997 study, a number of short-line rail carriers operated across Iowa and, in fact, routinely delivered shipments to river location for trans-loading to barge. Nearly all of these short-lines have been absorbed into the remaining Class I systems.

3. Estimation Results

Estimated regression equations are provided here as Appendix A. As in the original analysis, the study team began with a wide range of commodities. However, actual water-compelled effects were only observed for nine commodities, so that it is the estimation results for these cases that are reported here. Shipment size, in the form of raw total tonnage was only a significant predictor of rates in three of nine cases. Shipment size, as measured in total carloads, was statistically significant in four of nine cases and the variable TONS2CAR was statistically significant for six of nine commodity groups. As has historically been the case the total shipment distance and its square were both statistically significant in all nine cases. The number of railroads participating in the move should be positively correlated with rates because of the impact of interchange on costs and this was, in fact, observed in six of nine cases. Finally, market power, measured as traffic share in the destination county, was statistically significant for seven of nine commodities, while market share at the origin was only important in two of nine cases.

[6] A more detailed description of this data improvement is provided in, "Rail Rates and the Availability of Barge Transportation: The Tennessee River Basin," TVA, July 2003.

[7] The carrier-specific variables take on a value of one if the shipment originates on the railroad in question and a zero otherwise. Including these variables allows the intercept term of the regression equation to shift up or down depending on the carrier-specific pricing practices of the originating railroad.

For the eight non-coal commodities, distance to the nearest appropriate river facility matters most at the trip terminus (six of eight cases). Origin proximity to water was only statistically significant for two of eight commodity groupings. In the case of coal, location on the waterway is negatively correlated with railroad rates, but only when the total shipment distance is relatively long (roughly 1,200 miles).[8]

Quantitative results, including estimated total dollar amounts are reported in Table 1.[9] There are several striking findings that are immediately apparent when these results are compared to the 1995 values. First, both corn and soybeans are completely absent from the table of current results. The primary explanation for this outcome lies in the strong growth in the regional production of ethanol and bio-diesel. This, of course, does not imply that the volume of corn or soybeans moving to export has been driven to zero; it does, however, imply that the volume of export quantities for which rail and barge once competed has diminished substantially.

It is also likely that the elimination of regional short-line railroads is a contributing factor to the reduction in the competition between rail and barge for the movement of export corn and soybeans. There is credible evidence that the Class I carriers that serve the Gulf actively price in ways designed to keep grain from moving to the river. However, the short-line rail carriers were very much a navigation partner. Their re-integration into the Class I carriers, thereby, eliminated an important means for more distant producers to access commercial navigation.

Next, the total value of benefits to wheat shippers is significantly below the 1995 level of nearly $190 million. Again, this is a reflection of changed commodity flows. The majority of export wheat from the region now flows over the deep-draft ports of the Pacific Northwest. It

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[8] For railroad coal shipments over long distances, the availability of navigation at the destination appears to have a measurable impact on observed railroad pricing. However, as shipment distances grow shorter, this water-compelled effect diminishes. The economics that underlie this outcome are not immediately clear, but are probably tied to the specific coal characteristics demanded at each destination and the geographic sourcing alternatives of the coal alternatives that possess these characteristics. If this is, in fact the case, it is very much worth noting, given that ongoing movements toward a combination of scrubbing and higher sulfur coals are likely to further change the competitive relationship between barge and rail in the upper Mississippi basin.

[9] Values are for the full Mississippi River and Illinois River basins. In some cases, the methodology may have inadvertently captured impacts attributable to available Ohio or Tennessee River navigation. However, with the exception of Pulp, Paper, and Allied Products, any potential overstatement of benefits is less than 10 percent. In the case of Pulp, etc., the maximum overstatement of benefits is 12 percent.

is possible or even probable that the rail rates for wheat that continue to be influenced by available navigation are for domestic movements.

Table 1.

Commodity	*STCC*	*Observed Revenue per Ton-Mile*	*Rate Predicted Without Navigation*	*Per Ton-Mile Rate Difference*	*Affected Tonnage*	*Water-Compelled Rate Impact*
Wheat	1137	0.039471	0.042618	0.003146	21,967,189	54,216,873
Coal	11	0.022696	0.022147	0.000549	66,785,947	24,866,749
Non-Metallic Minerals	14	0.043795	0.043905	0.000110	29,828,671	1,420,497
Lumber and Wood	24	0.049427	0.050802	0.001375	26,823,696	31,431,352
Pulp Paper and Prod	26	0.059729	0.063669	0.003941	22,452,612	61,560,821
Coal and Petrol Prod	29	0.052048	0.053737	0.001689	80,071,679	99,968,392
Primary Metal	33	0.053556	0.057749	0.004193	19,922,160	53,565,649
Fabricated Metal	34	0.068262	0.071829	0.003567	549,148	2,973,260
Scrap Materials	40	0.061297	0.063445	0.002148	12,932,832	13,631,449
TOTAL						**343,635,043**

Finally, the current value for savings to coal shippers is only roughly five percent of what it was in 1995. Some portion of this reduction is likely attributable to the refined methodology described in Section 2. However, the reduction in water-compelled rail rates for the movement of coal also reflects the strong growth in the use of Powder River basin coal – a movement for which there is, generally, no navigation substitute. Finally, as noted in the introduction railroad capacity (both line-haul and terminal) is at a premium. The insensitivity of rail rates to available navigation clearly suggests that rail carriers are not seeking additional low-valued capacity nor are they particularly fearful of losing, at least, a portion of existing coal traffic.

While the historical sources of water-compelled rail rate benefits have dwindled in importance within the study region, the impact is partially offset by the growth in effects for other commodities – particularly petroleum coke. As refiners have de-emphasized asphalt production, they have increasingly turned to petroleum coke as a substitute output. Similarly, higher than usual coal prices have induced many industrial users to supplement the btu content of coal burns with the high btu coke. As a result rail volumes of petroleum coke have soared and the long-observed relationship between available navigation and rail rates for such movements has become increasingly important.

4. Summary and Conclusions

The nature of the interactions between rail carriers and commercial navigation has not changed. However, the extent and the magnitude of navigation's competitive impacts on railroad prices have diminished measurably over the past dozen years. This outcome is likely attributable to readily observed changes in the destinations of many grain products and the total elimination of any excess railroad capacity.

Shifts in grain usage have, in part, been tied to a growth in ethanol production. At the current time, it would appear that this growth will continue, perhaps at an accelerated rate. The elimination of excess railroad capacity reflects steady growth in the movement of dry-bulk commodities and an explosion of intermodal traffic that is largely the product of increased globalization and associated import growth. Like ethanol usage, international trade is likely to continue to grow over any foreseeable time horizon.

To those who observe transport markets on an ongoing basis, the current findings come as little surprise. Dwindling freight capacity has been a central topic at professional transportation meetings and within professional transportation publications for, at least, five years. Thus, it is not surprising that railroads currently (and for the foreseeable future) enjoy the luxury of sometimes ignoring a competitive mode that, in the past, played a far more prominent role in the determination of railroad rates. Nonetheless, for those who advocate for increased navigation investments, the same capacity constraints that have dampened observable water-compelled rail rate effects also underscore the potential importance of inland navigation and its substantial capacity on a forward-looking basis.

Appendix A: Regression Results

Wheat

The REG Procedure
Model: MODEL1
Dependent Variable: RTM

Number of Observations Read	2043
Number of Observations Used	2043

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	17	0.47187	0.02776	143.21	<.0001
Error	2025	0.39249	0.00019382		
Corrected Total	2042	0.86436			

Root MSE	0.01392	R-Square	0.5459
Dependent Mean	0.03947	Adj R-Sq	0.5421
Coeff Var	35.27129		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	0.18398	0.00582	31.59	<.0001
UCAR	1	-0.00062888	0.00017033	-3.69	0.0002
UTON	1	0.00000522	0.00000161	3.24	0.0012
TDIS	1	-0.00007297	0.00000316	-23.10	<.0001
TDIS2	1	2.537752E-8	1.610942E-9	15.75	<.0001
TON2CAR	1	-0.00098793	0.00005277	-18.72	<.0001
NUMRR	1	-0.00346	0.00107	-3.22	0.0013
OCDUM	1	-0.00591	0.00152	-3.88	0.0001
OD2W	1	0.00009963	0.00003264	3.05	0.0023
TCDUM	1	-0.00431	0.00094778	-4.55	<.0001
TD2W	1	0.00006802	0.00001585	4.29	<.0001
OSHARE	1	0.00623	0.00130	4.77	<.0001
TSHARE	1	0.00805	0.00114	7.08	<.0001
CD777	1	Confidential			
CD802	1				
CD712	1				
CD555	1				
CD103	1				

Coal

The REG Procedure
Model: MODEL1
Dependent Variable: RTM

Number of Observations Read 15879
Number of Observations Used 15879

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	20	6.76194	0.33810	1526.28	<.0001
Error	15858	3.51283	0.00022152		
Corrected Total	15878	10.27476			

Root MSE	0.01488	R-Square	0.6581
Dependent Mean	0.02270	Adj R-Sq	0.6577
Coeff Var	65.57639		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	0.14236	0.00508	28.00	<.0001
UCAR	1	-0.00071805	0.00004741	-15.15	<.0001
UTON	1	0.00000623	4.521678E-7	13.78	<.0001
TDIS	1	-0.00010988	0.00000134	-81.85	<.0001
TDIS2	1	4.908668E-8	7.95989E-10	61.67	<.0001
TON2CAR	1	-0.00085475	0.00004801	-17.80	<.0001
NUMRR	1	0.00604	0.00074359	8.12	<.0001
MSDUM	1	0.00996	0.00210	4.75	<.0001
MSINT	1	-0.00000769	0.00000178	-4.33	<.0001
MODUM	1	-0.00145	0.00064524	-2.25	0.0244
ILDUM	1	0.00477	0.00074947	6.36	<.0001
ARDUM	1	0.00422	0.00115	3.67	0.0002
TNDUM	1	-0.01402	0.00085813	-16.34	<.0001
CUMDUM	1	-0.01252	0.00108	-11.62	<.0001
OSHARE	1	0.00579	0.00060581	9.57	<.0001
TSHARE	1	0.00999	0.00046274	21.59	<.0001
CD777	1				
CD802	1				
CD712	1				
CD555	1				
CD103	1				

Confidential

Non-Metallic Minerals

The REG Procedure
Model: MODEL1
Dependent Variable: RTM

Number of Observations Read	4229
Number of Observations Used	4229

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	15	1.28634	0.08576	221.21	<.0001
Error	4213	1.63324	0.00038767		
Corrected Total	4228	2.91958			

Root MSE	0.01969	R-Square	0.4406
Dependent Mean	0.04380	Adj R-Sq	0.4386
Coeff Var	44.95748		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	0.06751	0.00294	22.93	<.0001
UCAR	1	0.00035025	0.00016874	2.08	0.0380
UTON	1	-0.00000712	0.00000170	-4.19	<.0001
TDIS	1	-0.00006951	0.00000198	-35.19	<.0001
TDIS2	1	1.954468E-8	9.41695E-10	20.75	<.0001
TON2CAR	1	-0.00026797	0.00002192	-12.22	<.0001
NUMRR	1	0.02054	0.00123	16.74	<.0001
TCDUM	1	-0.00956	0.00282	-3.38	0.0007
TD2W	1	0.00103	0.00031156	3.30	0.0010
OSHARE	1	-0.00120	0.00105	-1.14	0.2535
TSHARE	1	0.00584	0.00110	5.33	<.0001
CD777	1				
CD802	1				
CD712	1				
CD555	1				
CD103	1				

Confidential

Lumber and Wood Products

The REG Procedure
Model: MODEL1
Dependent Variable: RTM

Number of Observations Read	8319
Number of Observations Used	8319

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	15	4.57621	0.30508	555.24	<.0001
Error	8303	4.56219	0.00054946		
Corrected Total	8318	9.13840			

Root MSE	0.02344	R-Square	0.5008
Dependent Mean	0.04943	Adj R-Sq	0.4999
Coeff Var	47.42458		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	0.10562	0.00237	44.57	<.0001
UCAR	1	0.00293	0.00110	2.67	0.0077
UTON	1	-0.00002138	0.00001327	-1.61	0.1073
TDIS	1	-0.00004084	9.782503E-7	-41.74	<.0001
TDIS2	1	6.770478E-9	2.97595E-10	22.75	<.0001
TON2CAR	1	-0.00042810	0.00001779	-24.07	<.0001
NUMRR	1	0.00195	0.00067824	2.87	0.0041
OCDUM	1	-0.00783	0.00309	-2.53	0.0114
OD2W	1	0.00121	0.00035428	3.41	0.0006
OSHARE	1	-0.00104	0.00090769	-1.15	0.2516
TSHARE	1	-0.00269	0.00080930	-3.33	0.0009
CD777	1	Confidential			
CD802	1				
CD712	1				
CD555	1				
CD103	1				

Pulp, Paper, and Allied Products

The REG Procedure
Model: MODEL1
Dependent Variable: RTM

Number of Observations Read	10351
Number of Observations Used	10351

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	15	4.66920	0.31128	418.57	<.0001
Error	10335	7.68592	0.00074368		
Corrected Total	10350	12.35512			

Root MSE	0.02727	R-Square	0.3779
Dependent Mean	0.05973	Adj R-Sq	0.3770
Coeff Var	45.65725		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	0.10795	0.03036	3.56	0.0004
UCAR	1	0.01506	0.03027	0.50	0.6189
UTON	1	-0.00025172	0.00039640	-0.64	0.5254
TDIS	1	-0.00007442	0.00000180	-41.39	<.0001
TDIS2	1	1.731052E-8	6.67433E-10	25.94	<.0001
TON2CAR	1	-0.00012596	0.00039690	-0.32	0.7510
NUMRR	1	0.00547	0.00067136	8.15	<.0001
TCDUM	1	-0.01326	0.00088092	-15.06	<.0001
TD2W	1	0.00018930	0.00005591	3.39	0.0007
OSHARE	1	0.00089309	0.00107	0.84	0.4023
TSHARE	1	0.01029	0.00094629	10.87	<.0001
CD777	1		Confidential		
CD802	1				
CD712	1				
CD555	1				
CD103	1				

Coal and Petroleum Products

The REG Procedure
Model: MODEL1
Dependent Variable: RTM

Number of Observations Read	4354
Number of Observations Used	4354

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	15	2.23331	0.14889	222.37	<.0001
Error	4338	2.90454	0.00066956		
Corrected Total	4353	5.13785			

Root MSE	0.02588	R-Square	0.4347
Dependent Mean	0.05148	Adj R-Sq	0.4327
Coeff Var	50.26443		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	0.11536	0.00395	29.23	<.0001
UCAR	1	9.769163E-8	0.00014305	0.00	0.9995
UTON	1	-0.00000164	0.00000137	-1.20	0.2299
TDIS	1	-0.00007285	0.00000237	-30.74	<.0001
TDIS2	1	1.921934E-8	9.74663E-10	19.72	<.0001
TON2CAR	1	-0.00052289	0.00002322	-22.52	<.0001
NUMRR	1	0.00768	0.00169	4.56	<.0001
TCDUM	1	-0.00479	0.00110	-4.37	<.0001
TD2W	1	0.00021342	0.00004981	4.28	<.0001
OSHARE	1	0.00688	0.00131	5.26	<.0001
TSHARE	1	0.01085	0.00138	7.89	<.0001
CD777	1	Confidential			
CD802	1				
CD712	1				
CD555	1				
CD103	1				

Primary Metal Products

The REG Procedure
Model: MODEL1
Dependent Variable: RTM

Number of Observations Read	5882
Number of Observations Used	5882

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	16	3.01122	0.18820	389.88	<.0001
Error	5865	2.83115	0.00048272		
Corrected Total	5881	5.84238			

Root MSE	0.02197	R-Square	0.5154
Dependent Mean	0.05356	Adj R-Sq	0.5141
Coeff Var	41.02453		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	0.15174	0.00358	42.43	<.0001
UCAR	1	0.00099491	0.00113	0.88	0.3802
UTON	1	-0.00001801	0.00001205	-1.49	0.1351
TDIS	1	-0.00007140	0.00000189	-37.74	<.0001
TDIS2	1	1.702312E-8	7.08881E-10	24.01	<.0001
TON2CAR	1	-0.00029333	0.00001985	-14.78	<.0001
NUMRR	1	-0.00783	0.00137	-5.72	<.0001
OCDUM	1	-0.01217	0.00077384	-15.72	<.0001
OD2W	1	0.00038157	0.00002786	13.69	<.0001
OSHARE	1	-0.00490	0.00097193	-5.05	<.0001
TSHARE	1	0.00109	0.00096094	1.13	0.2587
CD777	1				
CD802	1				
CD712	1				
CD400	1				
CD555	1				
CD103	1				

Confidential

Fabricated Metal Products

The REG Procedure
Model: MODEL1
Dependent Variable: RTM

Number of Observations Read	707
Number of Observations Used	707

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	15	0.76140	0.05076	46.84	<.0001
Error	691	0.74884	0.00108		
Corrected Total	706	1.51024			

Root MSE	0.03292	R-Square	0.5042
Dependent Mean	0.06826	Adj R-Sq	0.4934
Coeff Var	48.22531		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	0.25283	0.05405	4.68	<.0001
UCAR	1	0.02341	0.02432	0.96	0.3362
UTON	1	-0.00015227	0.00034176	-0.45	0.6561
TDIS	1	-0.00004286	0.00001341	-3.20	0.0015
TDIS2	1	9.135024E-9	4.438354E-9	2.06	0.0399
TON2CAR	1	-0.00088213	0.00036114	-2.44	0.0148
NUMRR	1	-0.05631	0.02349	-2.40	0.0168
OCDUM	1	-0.01227	0.00441	-2.78	0.0056
OD2W	1	0.00593	0.00125	4.73	<.0001
OSHARE	1	-0.02631	0.00857	-3.07	0.0022
TSHARE	1	0.03842	0.00607	6.33	<.0001
CD777	1	-0.11317	0.02540	-4.45	<.0001
CD802	1				
CD712	1				
CD555	1				
CD103	1				

Confidential

Scrap Materials

The REG Procedure
Model: MODEL1
Dependent Variable: RTM

Number of Observations Read	4111
Number of Observations Used	4111

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	15	3.34173	0.22278	306.82	<.0001
Error	4095	2.97341	0.00072611		
Corrected Total	4110	6.31514			

Root MSE	0.02695	R-Square	0.5292
Dependent Mean	0.06130	Adj R-Sq	0.5274
Coeff Var	43.96049		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	0.13884	0.00367	37.82	<.0001
UCAR	1	-0.00330	0.00099814	-3.31	0.0009
UTON	1	0.00003239	0.00001020	3.18	0.0015
TDIS	1	-0.00013477	0.00000264	-51.06	<.0001
TDIS2	1	3.87055E-8	1.086707E-9	35.62	<.0001
TON2CAR	1	-0.00056073	0.00002125	-26.38	<.0001
NUMRR	1	0.01518	0.00145	10.49	<.0001
TCDUM	1	-0.00800	0.00110	-7.25	<.0001
TD2W	1	0.00030369	0.00008686	3.50	0.0005
OSHARE	1	0.00000988	0.00127	0.01	0.9938
TSHARE	1	0.00293	0.00134	2.18	0.0290
CD777	1	Confidential			
CD802	1				
CD712	1				
CD555	1				
CD103	1				