Appendix I: Data Tables

**Appendix Table 1: Partial Productivity Measures**				
Year	CP RTK per employee	CN RTK per employee	CP RTK per 1000L of diesel	CP RTK per 1000L of diesel
1986	3574.5	2779.7	111.0	124.4
1987	4313.1	3235.9	122.0	137.2
1988	4323.4	3577.8	118.7	136.1
1989	3933.9	3551.0	114.0	143.0
1990	4370.0	3714.8	118.9	145.4
1991	4630.0	4231.3	120.4	148.4
1992	4482.3	4366.4	117.7	150.4
1993	5013.2	4655.3	122.1	153.4
1994	5904.0	5657.4	129.1	169.2
1995	6072.9	5932.3	128.0	158.7
1996	6457.4	6564.1	135.3	155.4
1997	7322.5	7354.2	135.3	150.0
1998	7209.8	7513.5	140.6	153.6
1999	7328.1	8292.6	141.2	179.9
2000	8648.9	9249.3	153.0	192.0
2001	9201.2	9677.1	159.1	185.8
2002	9401.4	10690.3	153.5	188.3
2003	10035.1	10569.3	156.5	180.0
2004	10926.7	11543.9	163.6	177.5
2005	10935.6	12126.6	165.4	178.3
2006	11022.6	12787.7	161.9	181.0
2007	11875.0	12313.9	160.4	180.9
2008	11281.7	11776.9	159.5	178.5
2009	10417.7	11807.4	163.1	187.6

Appendix Tabel 2: Multifactor Productivity Indices				
Year	CP VFP	CN VFP	CP TFP	CN TFP
1986	100	100	100	100
1987	116.32	111.93	117.03	112.33
1988	114.64	119.02	111.67	120.90
1989	103.77	116.09	102.11	119.31
1990	111.40	118.91	110.97	123.25
1991	116.49	129.75	116.79	135.07
1992	110.81	131.65	111.92	137.46
1993	119.75	137.44	122.07	143.80
1994	136.67	158.00	139.67	165.40
1995	138.30	157.87	142.03	167.72
1996	142.40	168.27	146.89	179.79
1997	154.44	182.27	158.92	199.51
1998	153.02	183.18	158.96	204.93
1999	153.71	198.92	163.03	224.42
2000	173.41	215.24	185.47	244.10
2001	179.45	219.52	191.29	250.63
2002	178.56	232.80	192.91	266.98
2003	188.91	225.94	203.54	259.20
2004	203.23	238.25	217.51	273.38
2005	204.94	247.18	216.39	275.65
2006	202.06	255.90	213.91	283.75
2007	211.27	249.07	225.24	278.24
2008	202.16	237.30	218.07	264.66
2009	185.49	239.16	202.79	270.50

Appendix Table 3: CN Expense Shares					
Year	Track	Locomotives	Freight Cars	Deisel	Labour
1986	0.1404	0.0918	0.0807	0.1144	0.5727
1987	0.1452	0.0942	0.0753	0.1209	0.5644
1988	0.1421	0.0925	0.0778	0.1207	0.5669
1989	0.1422	0.0954	0.0690	0.1197	0.5737
1990	0.1390	0.0879	0.0797	0.1257	0.5678
1991	0.1377	0.0795	0.0786	0.1318	0.5724
1992	0.1362	0.0704	0.0767	0.1177	0.5991
1993	0.1519	0.0754	0.0867	0.1151	0.5709
1994	0.1539	0.0781	0.0774	0.1291	0.5615
1995	0.1536	0.0740	0.0733	0.1312	0.5679
1996	0.1540	0.0728	0.0729	0.1497	0.5505
1997	0.1589	0.0610	0.0744	0.1568	0.5488
1998	0.1728	0.0535	0.0735	0.1289	0.5713
1999	0.1859	0.0537	0.0739	0.1149	0.5716
2000	0.1744	0.0517	0.0735	0.1516	0.5488
2001	0.1660	0.0801	0.0588	0.1640	0.5311
2002	0.1775	0.0739	0.0675	0.1525	0.5286
2003	0.1701	0.0786	0.0802	0.1554	0.5157
2004	0.1806	0.0752	0.0756	0.1749	0.4936
2005	0.1652	0.0651	0.0759	0.2243	0.4695
2006	0.1706	0.0611	0.0712	0.2459	0.4512
2007	0.1822	0.0609	0.0625	0.2650	0.4295
2008	0.1766	0.0523	0.0482	0.3324	0.3905
2009	0.2132	0.0672	0.0531	0.2191	0.4475

	Appendix Table 4: CP Expense Shares				
Year	Track	Locomotives	Freight Cars	Diesel	Labour
1986	0.1386	0.1228	0.0849	0.1382	0.5154
1987	0.1422	0.1207	0.0909	0.1442	0.5020
1988	0.1422	0.1138	0.0917	0.1381	0.5141
1989	0.1484	0.1151	0.0946	0.1270	0.5149
1990	0.1442	0.1055	0.0929	0.1452	0.5122
1991	0.1492	0.0956	0.0882	0.1391	0.5280
1992	0.1624	0.0873	0.0897	0.1274	0.5332
1993	0.1545	0.0856	0.0916	0.1338	0.5345
1994	0.1461	0.0966	0.0815	0.1422	0.5336
1995	0.1433	0.1092	0.0745	0.1448	0.5282
1996	0.1380	0.1133	0.0823	0.1496	0.5169
1997	0.1442	0.1101	0.0851	0.1635	0.4972
1998	0.1464	0.1094	0.0773	0.1433	0.5238
1999	0.1352	0.1018	0.0759	0.1426	0.5446
2000	0.1430	0.1027	0.0734	0.1971	0.4839
2001	0.1345	0.1133	0.0876	0.1891	0.4755
2002	0.1444	0.1181	0.0633	0.1808	0.4933
2003	0.1379	0.1209	0.0671	0.1890	0.4850
2004	0.1501	0.1134	0.0576	0.2011	0.4777
2005	0.1413	0.1058	0.0567	0.2351	0.4611
2006	0.1373	0.1085	0.0534	0.2643	0.4366
2007	0.1516	0.1078	0.0535	0.2811	0.4061
2008	0.1498	0.0959	0.0417	0.3307	0.3819
2009	0.1558	0.1007	0.0549	0.2439	0.4448

Appendix Table 5: Econometric results
method: SUR

	N	DF	SSR	detRCov	OLS-R2
system	240	206	0.10601	0 0.96168	0.924675

	N	DF	SSR	MSE	R2	Adj R2
totalcost	48	24	0.036519	0.001522	0.985165	0.970949
locomotiveinput	48	42	0.007215	0.000172	0.653145	0.611853
freightcarsinput	48	42	0.008447	0.000201	-0.115659	-0.248475
fuelinput	48	42	0.017719	0.000422	0.879818	0.865510
labourinput	48	42	0.036110	0.000860	0.719924	0.686582

Coefficients:

	Estimate	Std. Error	Pr(>|t|)
totalcost_CN	86.13993559	99.08141861	0.38564821
totalcost_CP	86.14083837	99.05543453	0.38551885
totalcost_CNprod	-0.03424049	0.00393706	1.1102e-15 ***
totalcost_CPprod	-0.02851169	0.00415587	7.8707e-11 ***
totalcost_log(grosskm)	-9.42442806	10.63219400	0.37643303
totalcost_log(price_loco)	0.43247569	0.12702216	0.00079600 ***
totalcost_log(price_freightcar)	0.49764158	0.13772726	0.00038002 ***
totalcost_log(price_diesel)	-1.27747132	0.22977388	8.3171e-08 ***
totalcost_log(price_labour)	0.91157586	0.29287629	0.00211856 **
totalcost_lint_kmlabour	-0.02073394	0.01576925	0.19002781
totalcost_lint_kmloco	-0.01751996	0.00685656	0.01133373 *
totalcost_lint_kmdiesel	0.07699865	0.01234726	2.5011e-09 ***
totalcost_lint_kmfreight	-0.02299786	0.00741065	0.00218207 **
totalcost_lint_locofreight	1.10553436	0.81381614	0.17580442
totalcost_lint_locodiesel	-1.51664471	0.34555530	1.8182e-05 ***
totalcost_lint_locolabour	1.44469984	0.72237111	0.04682008 *
totalcost_lint_freightdiesel	-1.77128918	0.51955966	0.00078372 ***
totalcost_lint_freightlabour	0.60861181	0.60688084	0.31710868
totalcost_lint_diesellabour	4.18390580	1.01816811	5.7284e-05 ***
totalcost_self_loco	0.36785501	0.32367921	0.25707598
totalcost_self_freight	0.03058799	0.38060330	0.93602331
totalcost_self_diesel	-0.23227850	0.25081396	0.35547832
totalcost_self_labour	-0.47828309	0.98848075	0.62900149
totalcost_self_km	0.51625027	0.57055133	0.36661402
locomotiveinput_(Intercept)	0.43247569	0.12702216	0.00079600 ***
locomotiveinput_log(grosskm)	-0.01751996	0.00685656	0.01133373 *
locomotiveinput_log(price_loco)	0.06949663	0.00728884	< 2.22e-16 ***

	Estimate	Std. Error	Pr(>|t|)
locomotiveinput_log(price_freightcar)	-0.02305688	0.00556593	5.0128e-05 ***
locomotiveinput_log(price_diesel)	-0.03393857	0.00651902	4.6551e-07 ***
locomotiveinput_log(price_labour)	0.03158663	0.01042327	0.00275535 **
freightcarsinput_(Intercept)	0.49764158	0.13772726	0.00038002 ***
freightcarsinput_log(grosskm)	-0.02299786	0.00741065	0.00218207 **
freightcarsinput_log(price_loco)	-0.02305688	0.00556593	5.0128e-05 ***

	Estimate	Std. Error	Pr(>|t|)
freightcarsinput_log(price_freightcar)	0.04165321	0.00709573	1.7209e-08 ***
freightcarsinput_log(price_diesel)	-0.05092685	0.00677446	1.6849e-12 ***
freightcarsinput_log(price_labour)	0.05563769	0.00959623	2.4965e-08 ***
fuelinput_(Intercept)	-1.27747132	0.22977388	8.3171e-08 ***
fuelinput_log(grosskm)	0.07699865	0.01234726	2.5011e-09 ***
fuelinput_log(price_loco)	-0.03393857	0.00651902	4.6551e-07 ***
fuelinput_log(price_freightcar)	-0.05092685	0.00677446	1.6849e-12 ***
fuelinput_log(price_diesel)	0.16635578	0.01164848	< 2.22e-16 ***
fuelinput_log(price_labour)	-0.10787525	0.01326082	3.8414e-14 ***
labourinput_(Intercept)	0.91157586	0.29287629	0.00211856 **
labourinput_log(grosskm)	-0.02073394	0.01576925	0.19002780
labourinput_log(price_loco)	0.03158663	0.01042327	0.00275535 **
labourinput_log(price_freightcar)	0.05563769	0.00959623	2.4965e-08 ***
labourinput_log(price_diesel)	-0.10787525	0.01326082	3.8414e-14 ***
labourinput_log(price_labour)	0.07178829	0.02831217	0.01196760 *

Signif. codes: '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1