

DATE: 6/06/90

TABLE 0

CORRECTED DPR DATA INCLUDING CONRAIL				
RRID	YEAR	SWWAGES	YST	THY
5	1979	434.4700	881.2000	4408.3799
5	1980	342.9590	801.3000	3402.6399
5	1981	265.3710	807.5000	2901.5801
5	1982	167.2360	773.6000	2166.2400
5	1983	141.1780	755.7000	1958.6300
5	1984	146.6840	740.1000	1976.2900
5	1985	142.0270	683.3000	1813.8000
5	1986	123.8350	667.7000	1679.0800
5	1987	120.2730	649.4000	1653.3199
8	1979	50.5461	78.1000	547.0800
8	1980	37.7516	77.5000	400.7860
8	1981	36.0167	79.3000	399.4900
8	1982	29.7222	84.2000	351.6700
8	1983	29.9954	85.3000	319.7080
8	1984	32.3792	83.0000	359.6960
8	1985	34.5371	82.7000	387.5810
8	1986	33.9325	81.7000	359.4600
8	1987	27.2040	75.0000	320.2190
10	1979	214.5610	595.6000	2246.8701
10	1980	192.9640	591.8000	2013.5000
10	1981	174.4140	600.8000	1878.0500
10	1982	148.4950	608.5000	1695.1899
10	1983	141.2790	615.6000	1586.3300
10	1984	151.6020	612.7000	1619.3600
10	1985	147.2880	566.4000	1633.2500
10	1986	138.0360	567.6000	1621.8000
10	1987	131.5840	562.6000	1591.1801
18	1979	89.4514	214.5000	1077.3300
18	1980	82.6606	212.9000	968.7130
18	1981	75.4926	213.8000	856.0150
18	1982	61.4316	210.4000	683.6400
18	1983	47.7000	208.2000	574.5810
18	1984	46.1388	205.4000	556.3370
18	1985	39.8334	169.3000	502.5160
18	1986	29.5656	141.4000	392.1650
18	1987	27.6320	131.8000	325.7170
20	1979	391.7820	840.1000	4780.5898
20	1980	357.6770	835.9000	4433.8301
20	1981	332.3190	837.0000	3981.0701
20	1982	292.4260	829.1000	3074.8899
20	1983	235.9510	822.2000	2687.1599
20	1984	238.6990	814.9000	2856.3601
20	1985	210.7930	812.1000	2821.1299
20	1986	190.3100	781.5000	2493.5601
20	1987	198.4450	790.1000	2581.6799
21	1979	128.7200	276.2000	1459.4000
21	1980	127.2630	278.8000	1436.0800
21	1981	114.9830	287.3000	1330.8900
21	1982	86.9454	296.3000	991.3480
21	1983	72.5586	296.1000	887.0730

21	1984	72.7988	295.9000	895.7360
21	1985	64.6957	292.8000	762.7690
21	1986	54.5997	294.8000	691.0130
21	1987	51.9600	289.2000	696.5680
22	1979	237.8870	539.0000	2779.2200
22	1980	229.6210	536.3000	2510.0601
22	1981	196.9090	535.1000	2280.9700
22	1982	153.0570	533.6000	2306.6399
22	1983	128.4170	522.4000	1587.5800
22	1984	116.4830	517.8000	1545.9900
22	1985	110.2450	504.0000	1462.6200
22	1986	103.1740	488.6000	1480.3900
22	1987	96.4920	446.0000	1429.1700
23	1979	83.3835	189.6000	1035.0200
23	1980	79.9512	178.4000	987.1160
23	1981	72.2430	183.7000	891.6700
23	1982	56.5590	180.0000	704.8810
23	1983	53.1124	193.6000	706.8290
23	1984	50.2419	193.4000	670.6630
23	1985	45.8872	190.3000	606.7040
23	1986	42.6680	183.1000	582.3810
23	1987	36.4710	177.3000	541.1540
27	1979	18.0420	42.9000	211.7520
27	1980	16.8386	42.9000	194.8990
27	1981	16.0061	40.6000	188.5250
27	1982	13.0903	40.4000	151.7740
27	1983	11.3394	40.4000	135.4060
27	1984	11.2740	41.4000	64.3500
27	1985	9.3836	41.3000	112.8380
27	1986	8.3567	40.4000	100.6580
27	1987	9.0690	41.7000	98.6100
30	1979	25.8954	37.9000	323.2160
30	1980	25.0794	38.5000	324.4470
30	1981	23.5027	38.5000	283.4780
30	1982	18.8008	38.7000	239.6390
30	1983	16.7653	42.4000	259.8830
30	1984	16.3501	41.9000	261.1830
30	1985	15.6767	41.9000	218.2680
30	1986	15.0426	40.5000	206.9320
30	1987	14.0240	40.9000	202.9290
31	1979	19.2041	51.5000	225.7880
31	1980	21.1969	57.6000	245.7640
31	1981	19.9780	60.6000	238.2850
31	1982	15.6559	58.8000	187.8560
31	1983	16.2142	73.8000	198.2200
31	1984	16.4410	74.2000	204.0560
31	1985	15.2746	74.0000	191.3050
31	1986	14.5621	73.0000	183.8010
31	1987	14.3370	69.7000	178.2660
34	1979	20.6202	27.3000	236.8560
34	1980	22.6346	50.6000	208.6110
34	1981	21.9321	50.2000	188.0120
34	1982	17.5407	53.3000	137.6790
34	1983	17.4674	51.8000	141.9790
34	1984	16.8559	52.2000	133.5290
34	1985	11.7672	52.3000	104.0870
34	1986	12.9331	52.3000	191.4540
34	1987	12.4320	43.7000	249.5090
35	1979	78.4636	221.4000	923.4500
35	1980	60.8935	174.7000	696.6870

35	1981	52.4708	173.5000	635.6540
35	1982	38.3992	163.0000	551.4500
35	1983	37.1339	162.5000	514.9550
35	1984	37.5861	133.4000	524.0700
35	1985	31.5452	129.8000	437.7400
35	1986	31.0578	126.9000	430.1660
35	1987	32.5870	103.2000	429.0800
36	1979	145.7080	263.2000	1599.2600
36	1980	131.9100	263.2000	2170.8999
36	1981	120.5720	263.2000	1330.8400
36	1982	92.8612	258.6000	1069.1500
36	1983	87.7571	264.1000	1039.3600
36	1984	90.8674	265.0000	1047.2200
36	1985	79.5640	263.8000	918.9120
36	1986	70.1394	243.4000	970.8370
36	1987	65.6220	196.1000	842.6710
37	1979	233.1490	407.0000	2559.5100
37	1980	217.4820	406.4000	2361.8999
37	1981	183.9830	406.2000	2315.3899
37	1982	140.2840	406.7000	1510.7300
37	1983	119.1780	418.7000	1358.3199
37	1984	116.0330	442.5000	1200.8101
37	1985	112.5430	440.7000	958.0110
37	1986	92.7982	410.3000	1063.4200
37	1987	114.9750	400.6000	1132.8800

TABLE 1

CONRAIL INCLUDED

SWWAGES ACCOUNT

THE DATA ARE GIVEN IN THE FOLLOWING UNITS:

SWWAGES MILLIONS OF DOLLARS PER YEAR
 YST TENS OF MILES OF YARD SWITCHING TRACK
 THY MILLIONS OF TRAIN HOURS YARD SWITCHING

RAILROAD SPECIFIC MEANS OF THE DATA

RAILROAD	SWWAGES	YST	THY
5	209.3370	751.0889	2439.9955
8	34.6761	80.7556	382.8544
10	160.0248	591.2889	1765.0589
18	54.9896	189.7444	659.6682
20	272.0447	818.1000	3301.1411
21	86.0582	289.7111	1016.7641
22	152.4761	513.6444	1931.4044
23	57.8352	185.4889	747.3798
27	12.6000	41.3333	139.8680
30	19.0152	40.1333	257.7750
31	16.9849	65.9111	205.9268
34	17.1315	48.1889	176.8573
35	44.7930	154.2667	571.4734
36	98.3335	253.4000	1221.0166
37	147.8250	415.4556	1606.7745

OVERALL MEANS OF THE DATA

92.2750	295.9007	1094.9306
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TABLE 2

SWWAGES ACCOUNT

OLS REGRESSION RESULTS FOR POOLFD MODEL

COEFFICIENT	ESTIMATE	T-RATIO
CONST	-1.0008	-0.5774
YST	0.0096	0.7500
THY	0.0826	24.3185
TIME	1.6720	-3.1623

ERROR VARIANCE	171.0704
RSQ	0.9780
MODIFIED DW	1.1034
MODIFIED RHO	0.4483

F-STATISTIC FOR POOLING RAILROADS: $F(56, 75) = 8.32$

F-STATISTIC FOR POOLING YEARS: $F(24, 108) = 3.10$

TABLE 3

SWWAGES ACCOUNT

OLS REGRESSION ON MODEL WITH RAILROAD EFFECTS AND TIME TREND

COEFFICIENT	ESTIMATE	T-RATIO
YST	0.2163	-4.4297
THY	0.0864	4.6391
TIME	-0.3193	25.2696
F5	-164.0822	-5.0017
F8	-15.8911	-3.1411
F10	-120.4773	-4.6297
F18	-43.0857	-4.7858
F20	-190.3157	-5.3788
F21	-64.5135	-4.9383
F22	-125.6090	-5.5928
F23	-46.9019	-5.3344
F27	-8.4332	-2.0545
F30	-11.9511	-2.9330
F31	-15.0759	-3.3249
F34	-8.5824	-2.0245
F35	-37.9829	-4.9889
F36	-62.0402	-5.4156
F37	-80.9548	-4.4297
ERROR VARIANCE	122.7901	
RSD	0.9859	
MODIFIED DW	1.6818	
MODIFIED RHO	0.1591	

F-STATISTIC FOR INCREMENTAL POWER OF FIXED EFFECTS: $F(14, 117) = 4.68$ F-STATISTIC FOR POOLING RAILROADS
IN THE FIXED EFFECTS MODEL: $F(42, 75) = 6.47$

TABLE 4

SWWAGES ACCOUNT

OLS REGRESSION MODEL WITH RAILROAD EFFECTS AND TIME TREND

COEFFICIENT	ESTIMATE	T-RATIO
YSTR	0.2163	4.6391
THY	0.0864	25.2696
TIME	-0.3193	-0.6408
F5	-164.0822	-5.0017
F8	-15.8911	-3.1411
F10	-120.4773	-4.6297
F18	-43.0857	-4.7858
F20	-190.3157	-5.3788
F21	-64.5135	-4.9383
F22	-125.6090	-5.5928
F23	-46.9019	-5.3344
F27	-8.4332	-2.0545
F30	-11.9511	-2.9330
F31	-15.0759	-3.2249
F34	-8.5824	-2.0245
F35	-37.9829	-4.9889
F36	-62.0402	-5.4156
F37	-80.9548	-4.4297
ERROR VARIANCE	122.7901	
R SQ	0.9859	
MODIFIED DW	1.6818	
MODIFIED RHO	0.1591	
BREUSCH-PAGAN	178.2405	CHI-SQ(17)
RESET	7.3098	F(3 114)

OLS REGRESSION ON MODEL WITH RAILROAD EFFECTS AND TIME EFFECTS

F--STATISTIC FOR TIME EFFECTS: $F(8, 110) = 0.48$

TABLE 7

SWWAGES ACCOUNT

OLS REGRESSION MODEL WITH RAILROAD EFFECTS AND TIME EFFECTS
STEP ONE IN GLS ESTIMATION

COEFFICIENT	ESTIMATE	T-RATIO
YST	0.2539	4.8039
THY	0.0832	20.9574
F5	-180.0809	-4.9937
F8	-13.3401	-2.0788
F10	-132.6502	-4.6157
F18	-43.7370	-4.2172
F20	-206.0505	-5.3367
F21	-67.7685	-4.6194
F22	-134.3258	-5.4296
F23	-47.1097	-4.6327
F27	-5.1855	-0.9585
F30	-8.2773	-1.5023
F31	-12.5307	-2.1083
F34	-5.4729	-0.9850
F35	-37.5856	-4.2061
F36	-63.2702	-4.8814
F37	-87.0298	-4.3022
T79	BASE YEAR	
T80	-1.5745	-0.3805
T81	-3.4019	-0.7988
T82	-6.0923	-1.3239
T83	-7.7977	-1.6066
T84	-6.6211	-1.3705
T85	-4.2572	-0.8725
T86	-6.1417	-1.2493
T87	-3.2581	-0.6550
ERROR VARIANCE		126.6583
RSQ		0.9863
MODIFIED DW		1.6518
MODIFIED RHO		0.1741

TABLE 8

SWWAGES ACCOUNT

FIXED-EFFECTS MODEL CORRECTED FOR AUTOCORRELATION:
STEP TWO OF GLS ESTIMATION

COEFFICIENT ESTIMATE ASY Z-RATIO

YST	0.2656	5.7937
THY	0.0727	17.2807

F5	-141.0836	-5.6894
F8	-11.9667	-2.1355
F10	-105.5136	-5.2247
F18	-36.0420	-4.4379
F20	-156.0951	-6.0225
F21	-54.5009	-5.0095
F22	-104.5483	-6.0867
F23	-38.2974	-4.8117
F27	-6.8372	-1.3829
F30	-8.4006	-1.6895
F31	-12.7229	-2.3804
F34	-6.9844	-1.3837
F35	-31.1895	-4.3332
F36	-48.1353	-5.0530
F37	-66.4357	-4.6447

T79	BASE YEAR	
T80	5.9833	1.5028
T81	2.7746	0.7010
T82	-1.9616	-0.4678
T83	-4.0560	-0.9403
T84	-2.3494	-0.5486
T85	-0.7505	-0.1703
T86	-3.1715	-0.7080
T87	0.0940	0.0205

ERROR VARIANCE	94.3168
RSQ	0.9836
MODIFIED DW	1.8334
MODIFIED RHO	0.0833

WEIGHTED LEAST-SQUARES ESTIMATES OF FIXED-EFFECTS MODEL:
STEP THREE OF GLS ESTIMATION

T79	BASE	YEAR
T80	0.1820	0.4903
T81	-0.1735	-0.4538
T82	-0.5967	-1.3704
T83	-0.9379	-2.1063
T84	-0.6749	-1.5184
T85	-0.6345	-1.3572
T86	-1.0886	-2.2814
T87	-1.1294	-2.3089

ERROR VARIANCE	0.7083	
RSQ	0.9879	
MODIFIED DW	1.7469	
MODIFIED RHO	0.1265	
BREUSCH PAGAN	56.1778	CHI-SQ(24)
RESET	14.7761	F(3 107)

COEFFICIENT	ESTIMATE	ASY Z-RATIO
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YST	0.0941	3.1828
THY	0.0796	23.1509
5	-1.8680	-1.6798
8	-0.5212	-0.5371
10	-5.6635	-1.9493
18	-1.7325	-1.7178
20	-2.8671	-2.1203
21	-3.8506	-2.1962
22	-2.5800	-2.3071
23	-6.1845	-3.1319
27	-0.0190	-0.0320
30	-1.4673	-1.9086
31	-1.8173	-1.8221
34	0.2140	0.3593
35	-1.0891	-1.4658
36	-0.5417	-0.8165
37	-1.1249	-0.9115

1979	0.1820	0.4903
1980	-0.1735	-0.4538
1981	-0.5967	-1.3704
1982	-0.9379	-2.1063
1983	-0.6749	-1.5184
1984	-0.6345	-1.3572
1985	-1.0886	-2.2814
1986	-1.1294	-2.3089

ERROR VARIANCE	0.7083
RSQ	0.9879
MODIFIED DW	1.7469
MODIFIED RHO	0.1265

DPR4.FRG

[illegible]

TABLE 11

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CONFIRMATION INCLUDED

SWWAGES ACCOUNT

RAILROAD	RATIO	SE
5	0.73	0.0654
8	0.80	0.0534
10	0.72	0.0679
18	0.75	0.0633
20	0.77	0.0586
21	0.75	0.0630
22	0.76	0.0608
23	0.77	0.0586
27	0.74	0.0642
30	0.84	0.0439
31	0.73	0.0666
34	0.76	0.0616
35	0.76	0.0613
36	0.80	0.0529
37	0.77	0.0600

MEAN OF RATIOS: 0.7632

RATIO AT OVERALL MEAN: 0.7580 SE: 0.0614