Performance Measure Summary - Stockton CA

There are several inventory and performance measures listed in the pages of this Urban Area Report for the years from 1982 to 2020. There is no single performance measure that experts agree "says it all". A few key points should be recognized by users of the Urban Mobility Scorecard data.

Use the trends - The multi-year performance measures are better indicators, in most cases, than any single year. Examining a few measures over many years reduces the chance that data variations or the estimating procedures may have caused a "spike" in any single year. (5 years is 5 times better than 1 year.)

Use several measures - Each performance measure illustrates a different element of congestion. (The view is more interesting from atop several measures.)

Compare to similar regions - Congestion analyses that compare areas with similar characteristics (for example, population, growth rate, road and public transportation system design) are usually more insightful than comparisons of different regions. (Los Angeles is not Peoria.)

Compare ranking changes and performance measure values - In some performance measures, a small change in the value may cause a significant change in rank from one year to the next. This is the case when there are several regions with nearly the same value. (15 hours is only 1 hour more than 14 hours.)

Consider the scope of improvement options - Any improvement project in a corridor within most of the regions will only have a modest effect on the regional congestion level. (To have an effect on areawide congestion, there must be significant change in the system or service.)

Performance Measures and Definition of Terms

Travel Time Index - A measure of congestion that focuses on each trip and each mile of travel. It is calculated as the ratio of travel time in the peak period to travel time in free-flow. A value of 1.30 indicates that a 20-minute free-flow trip takes 26 minutes in the peak.

Planning Time Index - A travel time reliability measure that represents the total travel time that should be planned for a trip. Computed with the 95th percentile travel time it represents the amount of time that should be planned for a commute trip to be late for only 1 day a month. If it is computed with the 80th percentile travel time it represents the amount of time that should be planned for a trip to be late for only 1 day a week. A PTI of 2.00 means that for a 20-minute trip in light traffic, 40 minutes should be planned.

Peak Commuters - Number of travelers who begin a trip during the morning or evening peak travel periods (6 to 10 a.m. and 3 to 7 p.m.). "Commuters" are private vehicle users unless specifically noted.

Annual Delay per Commuter - A yearly sum of all the per-trip delays for those persons who travel in the peak period (6 to 10 a.m. and 3 to 7 p.m.). This measure illustrates the effect of traffic slowdowns as well as the length of each trip.

Total Delay - The overall size of the congestion problem. Measured by the total travel time above that needed to complete a trip at free-flow speeds. The ranking of total delay usually follows the population ranking (larger regions usually have more delay).

Free-Flow Speeds - These values are derived from time periods with lighter traffic volumes in the INRIX speed database. They are used as the national comparison thresholds. Other speed thresholds may be appropriate for urban project evaluations or sub-region studies.

Excess Fuel Consumed - Increased fuel consumption due to travel in congested conditions rather than free-flow conditions.

Congestion Cost - Value of travel delay for 2020 (estimated at $20.17 per hour of person travel and $55.24 per hour of truck time) and excess fuel consumption estimated using state average cost per gallon.

Urban Area - The developed area (population density more than 1,000 persons per square mile) within a metropolitan region. The urban area boundaries change frequently (every year for most growing areas), so increases include both new growth and development that was previously in areas designated as rural.

Number of Rush Hours -Time when the road system might have congestion.

Annual Greenhouse Gases (CO2) Produced -Tons of CO2 produced from all vehicle travel.

Excess Greenhouse Gases (CO2) Produced due to Congestion-Tons of CO2 produced due to congested portion of travel. The excess CO2 is a subset of the total CO2 produced.

Mobility Data for Stockton CA

Inventory Measures	2020	2019	2018	2017	2016	2015
Urban Area Information						
Population (1000s)	395	395	395	390	385	380
Rank	87	87	87	86	86	86
Commuters (1000s)	206	206	206	203	200	197
Daily Vehicle-Miles of Travel (1000s)						
Freeway	3,513	4,157	3,919	3,878	3,878	3,689
Arterial Streets	1,791	2,120	2,034	2,017	1,992	2,062
Cost Components						
Value of Time ($/hour)	20.17	19.14	18.71	18.12	17.91	17.69
Commercial Cost ($/hour)	55.24	61.03	54.71	52.14	50.20	46.87
Gasoline ($/gallon)	3.43	3.70	3.72	2.96	2.78	3.18
Diesel ($/gallon)	3.80	3.95	4.03	2.95	2.68	2.86
System Performance	**2020**	**2019**	**2018**	**2017**	**2016**	**2015**
Congested Travel (% of peak VMT)	--	--	--	24.5	--	--
Congested System (% of lane-miles)	--	--	--	15.6	--	--
Congested Time (number of "Rush Hours")	--	--	--	3.3	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	2,949	4,031	3,778	3,475	3,287	3,137
Rank	78	86	88	89	89	90
Fuel per Peak Auto Commuter (gallons)	14	19	18	17	16	16
Rank	17	62	64	68	76	73
Annual Delay						
Total Delay (1000s of person-hours)	7,899	10,797	10,332	9,928	9,288	8,788
Rank	76	83	84	84	84	86
Delay per Auto Commuter (pers-hrs)	25	34	33	32	30	30
Rank	55	94	94	93	93	92
Travel Time Index	1.10	1.17	1.16	1.15	1.15	1.15
Rank	29	49	57	69	69	67
Commuter Stress Index	1.13	1.17	1.18	1.17	--	--
Rank	14	67	63	66	--	--
Freeway Planning Time Index (95th Pctile)	--	1.38	1.36	1.41	--	--
Rank	--	55	56	53	--	--
Congestion Cost						
Total Cost ($ millions)	185	250	234	218	200	187
Rank	75	82	84	84	84	84
Cost per Auto Commuter ($)	624	840	788	743	700	656
Rank	32	63	72	80	83	85
Truck Congestion						
Annual Person-Hours of Delay (000)	553	720	670	597	558	528
Rank	64	68	69	78	79	80
Annual Gallons of Wasted Fuel (000)	930	1,211	1,094	976	923	881
Rank	65	72	75	80	80	80
Annual Congestion Cost ($ million)	30	44	38	32	29	26
Rank	62	63	67	76	77	78
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	29,981	40,980	--	--	--	--
Rank	78	85	--	--	--	--
Due to All Travel (tons)	877,973	1,200,091	--	--	--	--
Rank	85	90	--	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)	10,259	13,357	--	--	--	--
Rank	65	72	--	--	--	--
Due to Truck Travel (tons)	257,358	335,068	--	--	--	--
Rank	80	86	--	--	--	--

* Note: Zeroes in the table reflect values less than 0.5.

Mobility Data for Stockton CA

Inventory Measures	2014	2013	2012	2011	2010	2009
Urban Area Information						
Population (1000s)	375	375	380	385	380	380
Rank	86	86	86	85	85	84
Commuters (1000s)	193	196	199	201	198	197
Daily Vehicle-Miles of Travel (1000s)						
Freeway	3,566	3,595	3,740	3,591	3,547	3,565
Arterial Streets	2,095	2,242	2,245	2,235	2,208	2,200
Cost Components						
Value of Time ($/hour)	17.67	17.39	17.14	16.79	16.28	16.01
Commercial Cost ($/hour)	44.82	41.23	39.66	44.62	42.50	41.83
Gasoline ($/gallon)	3.63	3.89	3.89	3.51	3.05	2.61
Diesel ($/gallon)	3.85	4.12	4.20	4.02	3.20	2.71
System Performance	**2014**	**2013**	**2012**	**2011**	**2010**	**2009**
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	2,959	2,912	2,892	2,871	2,816	2,774
Rank	91	91	90	89	90	90
Fuel per Peak Auto Commuter (gallons)	15	14	13	12	12	12
Rank	81	85	87	89	89	83
Annual Delay						
Total Delay (1000s of person-hours)	8,218	7,945	7,820	7,555	7,342	7,096
Rank	86	86	86	85	85	85
Delay per Auto Commuter (pers-hrs)	29	27	26	24	22	21
Rank	92	93	94	94	95	96
Travel Time Index	1.15	1.14	1.14	1.14	1.14	1.14
Rank	68	76	77	75	71	72
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	176	167	162	156	145	137
Rank	86	86	86	85	85	85
Cost per Auto Commuter ($)	612	596	595	594	596	585
Rank	90	90	88	86	87	85
Truck Congestion						
Annual Person-Hours of Delay (000)	494	478	470	454	441	427
Rank	81	81	81	81	80	80
Annual Gallons of Wasted Fuel (000)	830	817	812	806	791	779
Rank	83	83	82	82	82	81
Annual Congestion Cost ($ million)	24	22	21	22	20	19
Rank	81	80	79	80	80	79
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to All Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to Truck Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--

* Note: Zeroes in the table reflect values less than 0.5.

Mobility Data for Stockton CA

Inventory Measures	2008	2007	2006	2005	2004	2003
Urban Area Information						
Population (1000s)	375	375	370	370	365	365
Rank	84	84	84	84	84	83
Commuters (1000s)	194	193	189	188	184	183
Daily Vehicle-Miles of Travel (1000s)						
Freeway	3,605	3,835	3,605	3,450	3,360	3,195
Arterial Streets	2,195	2,225	2,195	2,165	2,090	2,000
Cost Components						
Value of Time ($/hour)	16.07	15.47	15.06	14.58	14.10	13.73
Commercial Cost ($/hour)	40.77	39.30	37.88	36.51	35.19	33.92
Gasoline ($/gallon)	3.84	3.24	2.88	2.62	2.28	1.78
Diesel ($/gallon)	4.39	3.60	3.17	2.93	2.27	1.79
System Performance	**2008**	**2007**	**2006**	**2005**	**2004**	**2003**
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	2,880	3,148	3,009	2,886	2,452	2,269
Rank	90	88	88	90	91	91
Fuel per Peak Auto Commuter (gallons)	11	12	10	11	9	7
Rank	94	90	93	88	94	95
Annual Delay						
Total Delay (1000s of person-hours)	7,017	7,669	7,330	7,032	5,974	5,527
Rank	85	84	85	84	85	86
Delay per Auto Commuter (pers-hrs)	21	22	21	20	19	18
Rank	96	94	96	96	96	95
Travel Time Index	1.14	1.15	1.14	1.14	1.12	1.11
Rank	76	69	75	73	83	87
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	140	145	134	124	101	90
Rank	85	84	84	84	85	85
Cost per Auto Commuter ($)	577	884	865	860	757	715
Rank	82	38	41	42	53	57
Truck Congestion						
Annual Person-Hours of Delay (000)	422	461	441	422	359	332
Rank	80	76	76	74	79	80
Annual Gallons of Wasted Fuel (000)	809	883	845	810	689	637
Rank	82	79	78	78	82	84
Annual Congestion Cost ($ million)	20	20	18	17	13	12
Rank	78	77	76	74	78	75
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to All Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to Truck Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--

* Note: Zeroes in the table reflect values less than 0.5.

Mobility Data for Stockton CA

Inventory Measures	2002	2001	2000	1999	1998	1997
Urban Area Information						
Population (1000s)	360	350	345	340	330	320
Rank	82	81	81	81	82	83
Commuters (1000s)	178	170	165	160	153	146
Daily Vehicle-Miles of Travel (1000s)						
Freeway	3,020	2,970	2,830	2,700	2,615	2,525
Arterial Streets	1,990	1,980	1,975	1,965	1,960	1,950
Cost Components						
Value of Time ($/hour)	13.43	13.22	12.85	12.43	12.17	11.98
Commercial Cost ($/hour)	32.69	31.51	30.38	29.28	28.89	28.50
Gasoline ($/gallon)	1.66	1.93	1.72	1.59	1.27	1.40
Diesel ($/gallon)	1.58	1.78	1.68	1.50	1.39	1.51
System Performance	**2002**	**2001**	**2000**	**1999**	**1998**	**1997**
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	2,196	1,997	1,814	1,739	1,621	1,554
Rank	91	92	92	92	91	89
Fuel per Peak Auto Commuter (gallons)	8	7	6	5	5	4
Rank	93	93	94	94	93	94
Annual Delay						
Total Delay (1000s of person-hours)	5,349	4,866	4,420	4,236	3,949	3,786
Rank	86	87	87	85	84	84
Delay per Auto Commuter (pers-hrs)	18	16	16	15	15	14
Rank	95	96	96	96	95	95
Travel Time Index	1.11	1.10	1.10	1.09	1.09	1.09
Rank	83	87	85	86	83	83
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	85	76	67	62	56	53
Rank	85	86	86	85	84	84
Cost per Auto Commuter ($)	714	658	607	608	579	558
Rank	54	61	68	64	65	65
Truck Congestion						
Annual Person-Hours of Delay (000)	322	292	266	255	238	228
Rank	77	78	79	78	79	79
Annual Gallons of Wasted Fuel (000)	616	560	510	489	456	436
Rank	83	85	85	85	84	83
Annual Congestion Cost ($ million)	11	10	8	8	7	7
Rank	75	77	79	76	77	75
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to All Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to Truck Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--

* Note: Zeroes in the table reflect values less than 0.5.

Mobility Data for Stockton CA

Inventory Measures	1996	1995	1994	1993	1992	1991
Urban Area Information						
Population (1000s)	310	305	300	295	290	285
Rank	84	84	84	84	84	84
Commuters (1000s)	140	135	131	127	123	119
Daily Vehicle-Miles of Travel (1000s)						
Freeway	2,455	2,335	2,155	2,000	1,900	1,800
Arterial Streets	1,940	1,930	1,925	1,900	1,880	1,850
Cost Components						
Value of Time ($/hour)	11.71	11.37	11.06	10.78	10.47	10.17
Commercial Cost ($/hour)	28.12	27.75	27.38	27.02	26.66	26.30
Gasoline ($/gallon)	1.21	1.27	1.16	1.23	1.28	1.11
Diesel ($/gallon)	1.24	1.31	1.19	1.26	1.25	1.25
System Performance	**1996**	**1995**	**1994**	**1993**	**1992**	**1991**
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	1,480	1,446	1,303	1,222	1,123	1,079
Rank	88	87	88	88	88	87
Fuel per Peak Auto Commuter (gallons)	4	4	3	3	3	3
Rank	92	90	94	90	90	90
Annual Delay						
Total Delay (1000s of person-hours)	3,606	3,524	3,175	2,976	2,737	2,628
Rank	84	83	82	82	82	82
Delay per Auto Commuter (pers-hrs)	14	13	12	12	11	11
Rank	95	95	95	94	93	92
Travel Time Index	1.09	1.09	1.08	1.08	1.08	1.08
Rank	79	77	80	77	75	68
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	49	47	41	38	34	32
Rank	84	82	82	82	81	82
Cost per Auto Commuter ($)	552	555	515	497	466	460
Rank	60	55	57	56	57	51
Truck Congestion						
Annual Person-Hours of Delay (000)	216	212	190	179	165	157
Rank	79	78	79	79	79	78
Annual Gallons of Wasted Fuel (000)	416	407	366	343	315	303
Rank	81	78	80	81	81	79
Annual Congestion Cost ($ million)	6	6	5	5	4	4
Rank	79	76	79	76	79	78
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to All Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to Truck Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--

* Note: Zeroes in the table reflect values less than 0.5.

Mobility Data for Stockton CA

Inventory Measures	1990	1989	1988	1987	1986	1985
Urban Area Information						
Population (1000s)	280	275	265	255	245	235
Rank	84	84	85	85	85	86
Commuters (1000s)	115	112	107	102	98	93
Daily Vehicle-Miles of Travel (1000s)						
Freeway	1,675	1,590	1,445	1,380	1,250	1,120
Arterial Streets	1,805	1,780	1,730	1,600	1,590	1,580
Cost Components						
Value of Time ($/hour)	9.75	9.25	8.83	8.48	8.18	8.03
Commercial Cost ($/hour)	25.95	25.60	25.26	24.93	24.60	24.27
Gasoline ($/gallon)	1.14	1.14	1.05	1.05	1.03	1.35
Diesel ($/gallon)	1.19	1.09	1.01	1.01	0.99	1.29
System Performance	**1990**	**1989**	**1988**	**1987**	**1986**	**1985**
Congested Travel (% of peak VMT)	--	--	--	--	--	--
Congested System (% of lane-miles)	--	--	--	--	--	--
Congested Time (number of "Rush Hours")	--	--	--	--	--	--
Annual Excess Fuel Consumed						
Total Fuel (1000 gallons)	1,040	888	743	633	592	574
Rank	87	87	88	89	87	87
Fuel per Peak Auto Commuter (gallons)	4	2	2	2	1	1
Rank	81	90	87	86	91	90
Annual Delay						
Total Delay (1000s of person-hours)	2,534	2,163	1,810	1,541	1,443	1,399
Rank	82	83	83	84	84	84
Delay per Auto Commuter (pers-hrs)	10	9	8	7	7	7
Rank	92	92	92	94	94	92
Travel Time Index	1.07	1.07	1.06	1.05	1.05	1.05
Rank	74	65	73	79	74	64
Commuter Stress Index	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Congestion Cost						
Total Cost ($ millions)	29	24	19	16	14	14
Rank	82	83	83	84	84	83
Cost per Auto Commuter ($)	464	425	372	335	319	304
Rank	47	55	60	63	64	62
Truck Congestion						
Annual Person-Hours of Delay (000)	152	130	109	93	87	84
Rank	76	77	81	82	80	80
Annual Gallons of Wasted Fuel (000)	293	249	209	177	167	162
Rank	79	80	82	82	82	80
Annual Congestion Cost ($ million)	4	3	3	2	2	2
Rank	71	76	71	81	76	73
Annual Greenhouse Gases (CO2) Produced						
Excess Due to Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to All Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced						
Excess Due to Truck Congestion (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--
Due to Truck Travel (tons)	--	--	--	--	--	--
Rank	--	--	--	--	--	--

* Note: Zeroes in the table reflect values less than 0.5.

Mobility Data for Stockton CA

Inventory Measures	1984	1983	1982
Urban Area Information			
Population (1000s)	225	220	210
Rank	86	86	86
Commuters (1000s)	88	86	81
Daily Vehicle-Miles of Travel (1000s)			
Freeway	950	885	735
Arterial Streets	1,575	1,550	1,510
Cost Components			
Value of Time ($/hour)	7.75	7.43	7.20
Commercial Cost ($/hour)	23.94	23.63	23.31
Gasoline ($/gallon)	1.36	1.39	1.46
Diesel ($/gallon)	1.31	1.34	1.40
System Performance	**1984**	**1983**	**1982**
Congested Travel (% of peak VMT)	--	--	--
Congested System (% of lane-miles)	--	--	--
Congested Time (number of "Rush Hours")	--	--	--
Annual Excess Fuel Consumed			
Total Fuel (1000 gallons)	496	472	440
Rank	87	86	86
Fuel per Peak Auto Commuter (gallons)	1	1	1
Rank	87	86	82
Annual Delay			
Total Delay (1000s of person-hours)	1,208	1,149	1,071
Rank	85	84	84
Delay per Auto Commuter (pers-hrs)	6	6	6
Rank	96	94	90
Travel Time Index	1.05	1.04	1.04
Rank	57	68	61
Commuter Stress Index	--	--	--
Rank	--	--	--
Freeway Planning Time Index (95th Pctile)	--	--	--
Rank	--	--	--
Congestion Cost			
Total Cost ($ millions)	12	11	10
Rank	83	82	80
Cost per Auto Commuter ($)	272	276	271
Rank	63	57	56
Truck Congestion			
Annual Person-Hours of Delay (000)	73	69	64
Rank	79	78	77
Annual Gallons of Wasted Fuel (000)	139	132	123
Rank	79	76	75
Annual Congestion Cost ($ million)	2	2	2
Rank	71	68	65
Annual Greenhouse Gases (CO2) Produced			
Excess Due to Congestion (tons)	--	--	--
Rank	--	--	--
Due to All Travel (tons)	--	--	--
Rank	--	--	--
Truck Annual Greenhouse Gases (CO2) Produced			
Excess Due to Truck Congestion (tons)	--	--	--
Rank	--	--	--
Due to Truck Travel (tons)	--	--	--
Rank	--	--	--

* Note: Zeroes in the table reflect values less than 0.5.