

Appendix F

Historical Energy Prices and Rainfall in California

Table F-1 shows the historical retail electricity, natural gas, and consumer price index values in Bureau of Labor Statistics data series (BLS 2006). These represent the San Francisco-Oakland-San Jose and Los Angeles-metropolitan areas. The upward trend in electricity and natural gas prices was stripped from the electricity and natural gas indices by subtracting the geographically appropriate consumer price index, and adding 100 (the index base year value).⁷ Those parts of the adjusted annual time series for retail electricity and natural gas price indices that overlapped with the statewide average rainfall time series from the Department of Water Resources (Roos 2006) are presented along with the rainfall data in Table F-2.

Table F-1: Energy Price Indices Used in the Analysis

Year	LA electricity	LA natural gas	LA CPI	SF electricity	SF natural gas	SF CPI
1972	38.3	22.4	41.4	40.3	15.6	40.4
1973	41.8	23.8	43.7	42.2	17.4	42.8
1974	50.9	26.6	48.2	47.1	19.9	47.0
1975	53.8	30.9	53.3	49.5	25.7	51.8
1976	55.6	31.9	56.9	49.3	27.8	54.6
1977	58.7	33.1	60.8	54.2	31.1	58.8
1978	61.9	35.4	65.3	52.6	33.6	64.3
1979	66.8	46.6	72.3	47.4	44.0	69.8
1980	87.0	62.3	83.7	77.6	75.4	80.4
1981	92.4	66.8	91.9	89.8	76.1	90.8
1982	100.4	82.9	97.3	110.0	89.2	97.6
1983	97.8	106.9	99.1	90.0	99.2	98.4
1984	101.8	110.2	103.6	100.0	111.6	104.0
1985	105.5	111.4	108.4	116.3	105.5	108.4

⁷ This is an approximation. One could also calculate a line of best fit for the consumer price index and subtract values from that line by year from the appropriate electricity or natural gas price index. Both approximations are rough, and are presented as illustrations of the type of analysis one can perform. That is, the analysis in this report is by no means final. It illustrates issues that should be addressed thoroughly.

Year	LA electricity	LA natural gas	LA CPI	SF electricity	SF natural gas	SF CPI
1986	110.1	110.3	111.9	115.6	97.0	111.6
1987	109.2	124.7	116.7	115.6	97.3	115.4
1988	119.8	116.2	122.1	128.1	104.6	120.5
1989	132.0	113.7	128.3	142.4	109.9	126.4
1990	139.9	116.4	135.9	152.8	113.8	132.1
1991	151.9	129.1	141.4	170.9	119.2	137.9
1992	156.9	116.5	146.5	173.2	119.8	142.5
1993	158.7	128.7	150.3	180.8	112.8	146.3
1994	161.5	129.4	152.3	180.3	116.7	148.7
1995	168.7	130.8	154.6	180.4	126.3	151.6
1996	163.7	128.4	157.5	175.4	100.2	155.1
1997	167.9	135.5	160.0	174.9	122.6	160.4
1998	155.0	128.8	162.0	156.2	121.2	165.5
1999	154.1	124.9	166.1	158.5	127.8	172.5
2000	154.1	159.3	171.6	154.4	158.6	180.2
2001	200.8	159.8	177.3	206.2	194.1	189.9
2002	230.9	140.2	182.2	222.7	132.4	193.0

Table F-2: Statewide Precipitation and Trend-Adjusted Energy Indices

Year	Precipitation (inches)	Adj. LA electricity	Adj. LA natural gas	Adj. SF electricity	Adj. SF natural gas
1971	22.92				
1972	14.89	96.9	81.0	99.9	75.2
1973	30.17	98.1	80.1	99.4	74.6
1974	29.83	102.7	78.4	100.1	72.9
1975	22.59	100.5	77.6	97.7	73.9
1976	14.08	98.7	75.0	94.7	73.2
1977	12.28	97.9	72.3	95.4	72.3
1978	35.41	96.6	70.1	88.3	69.3
1979	21.97	94.5	74.3	77.6	74.2
1980	30.65	103.3	78.6	97.2	95.0
1981	17.07	100.5	74.9	99.0	85.3
1982	35.42	103.1	85.6	112.4	91.6
1983	43.21	98.7	107.8	91.6	100.8
1984	22.53	98.2	106.6	96.0	107.6
1985	19.27	97.1	103.0	107.9	97.1
1986	30.91	98.2	98.4	104.0	85.4
1987	13.99	92.5	108.0	100.2	81.9
1988	17.60	97.7	94.1	107.6	84.1
1989	20.11	103.7	85.4	116.0	83.5
1990	15.29	104.0	80.5	120.7	81.7
1991	17.85	110.5	87.7	133.0	81.3
1992	20.66	110.4	70.0	130.7	77.3
1993	33.14	108.4	78.4	134.5	66.5

Year	Precipitation (inches)	Adj. LA electricity	Adj. LA natural gas	Adj. SF electricity	Adj. SF natural gas
1994	16.11	109.2	77.1	131.6	68.0
1995	38.58	114.1	76.2	128.8	74.7
1996	26.34	106.2	70.9	120.3	45.1
1997	26.64	107.9	75.5	114.5	62.2
1998	41.91	93.0	66.8	90.7	55.7
1999	21.45	88.0	58.8	86.0	55.3
2000	21.83	82.5	87.7	78.2	78.4
2001	17.83	123.5	82.5	116.3	104.2
2002	19.59	148.7	58.0	129.7	39.4
		123.6	86.7	122.6	85.7
Lagged Correlation		-0.27	0.08	-0.32	-0.04

References

Bureau of Labor Statistics (BLS). 2006. Data series: CUURA421SA0, CUUSA421SA0, CUURA421SEHF01, CUUSA421SEHF01, CUURA421SEHF02, CUUSA421SEHF02, CUURA422SA0, CUUSA422SA0, CUURA422SEHF01, CUUSA422SEHF01, CUURA422SEHF02, CUUSA422SEHF02 Available at: <http://data.bls.gov>

Roos, M. 2006. Personal communication. Chief hydrologist. California Department of Water Resources (DWR).