

A-5 CITY PUBLIC SERVICE BOARD OF SAN ANTONIO

EQUATION ESTIMATES

2SLS USING COCHRANE-ORCUTT ITERATIVE TECHNIQUE

EQUATION 1: RESIDENTIAL SALES

$$\text{RSSA} = a_0 + a_1 \cdot \text{RAPINST} + a_2 \cdot \text{RPICPS} + a_3 \cdot \text{RCDDINST} + a_4 \cdot \text{RHDDINST}$$

FINAL VALUE OF RHO = -0.286202
 STANDARD ERROR OF RHO = 0.139763
 T-STATISTIC FOR RHO = -2.04776
 SUM OF SQUARED RESIDUALS = 0.202962E+12
 STANDARD ERROR OF THE REGRESSION = 69515.7
 MEAN OF DEPENDENT VARIABLE = 0.111165E+07
 STANDARD DEVIATION = 368121.
 R² = 0.967441
 ADJUSTED R² = 0.964340
 DURBIN-WATSON STATISTIC = 2.2289
 LOG OF LIKELIHOOD FUNCTION = -588.064
 NUMBER OF OBSERVATIONS = 47

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.55679E+06	68433.	-8.1362
RAPINST	-27.489	10.839	-2.5362
RPICPS	0.95030E+06	0.11893E+06	7.9905
RCDDINST	0.16308E-02	0.10871E-03	15.001
RHDDINST	0.90884E-03	0.16264E-03	5.5882

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

2SLS ESTIMATION USING MAXIMUM LIKELIHOOD ITERATIVE TECHNIQUE

EQUATION 2: COMMERCIAL SALES

$$\text{CSSA} = b_0 + b_1 \cdot \text{CAPINST} + b_2 \cdot \text{NAGCPS} + b_3 \cdot \text{CCDDINST} + b_4 \cdot \text{CHDDINST}$$

FINAL VALUE OF RHO	=	0.217845
STANDARD ERROR OF RHO	=	0.157544
T-STATISTIC FOR RHO	=	1.38276
SUM OF SQUARED RESIDUALS	=	0.247123E+11
STANDARD ERROR OF THE REGRESSION	=	24855.7
MEAN OF DEPENDENT VARIABLE	=	350237.
STANDARD DEVIATION	=	111892.
R ²	=	0.955181
ADJUSTED R ²	=	0.950699
DURBIN-WATSON STATISTIC	=	1.9086
LOG OF LIKELIHOOD FUNCTION	=	-516.664
NUMBER OF OBSERVATIONS	=	45

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.61554E+06	55628.	-11.065
CAPINST	-37.166	20.034	-1.8552
NAGCPS	2404.0	221.75	10.841
CCDDINST	0.30452E-02	0.26098E-03	11.668
CHDDINST	0.11561E-02	0.38684E-03	2.9886

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EQUATION 3: RESIDENTIAL AVERAGE PRICE

$$\text{RAPSA} = c_0 + c_1 \cdot \text{AQ TSA} + c_2 \cdot \text{AFCSA}$$

FINAL VALUE OF RHO	=	0.585937
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STANDARD ERROR OF RHO = 0.118203
 T-STATISTIC FOR RHO = 4.95706
 SUM OF SQUARED RESIDUALS = 0.612259E-03
 STANDARD ERROR OF THE REGRESSION = 0.373028E-02
 MEAN OF DEPENDENT VARIABLE = 0.259493E-01
 STANDARD DEVIATION = 0.555964E-02
 R² = 0.569728
 ADJUSTED R² = 0.550170
 DURBIN-WATSON STATISTIC = 2.2230
 LOG OF LIKELIHOOD FUNCTION = 197.650
 NUMBER OF OBSERVATIONS = 47

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.13211E-01	0.69142E-02	1.9108
AQTSA	0.62776	0.16297	3.8521
AFCSA	0.66837	0.11539	5.7921

2SLS ESTIMATION USING COCHRANE-ORCUTT ITERATIVE TECHNIQUE

EQUATION 4: COMMERCIAL AVERAGE PRICE

$$\text{CAPSA} = d_0 + d_1 \cdot \text{AQTSA} + d_2 \cdot \text{AFCSA}$$

FINAL VALUE OF RHO = 0.662468
 STANDARD ERROR OF RHO = 0.108122
 T-STATISTIC FOR RHO = 6.12704
 SUM OF SQUARED RESIDUALS = 0.348191E-03
 STANDARD ERROR OF THE REGRESSION = 0.281308E-02
 MEAN OF DEPENDENT VARIABLE = 0.204740E-01
 STANDARD DEVIATION = 0.453872E-02
 R² = 0.632581
 ADJUSTED R² = 0.615880

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

DURBIN-WATSON STATISTIC = 1.9665
 LOG OF LIKELIHOOD FUNCTION = 210.913
 NUMBER OF OBSERVATIONS = 47

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.16412E-01	0.62256E-02	2.6362
AQTSA	0.72762	0.13132	5.5407
AFCSA	0.52197	0.10636	4.9075

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EQUATION 5: INDUSTRIAL AVERAGE PRICE

$$IAPSA = e_0 + e_1 \cdot ATQTSA + E_2 \cdot AFCSA$$

FINAL VALUE OF RHO = 0.479973
 STANDARD ERROR OF RHO = 0.127965
 T-STATISTIC FOR RHO = 3.75082
 SUM OF SQUARED RESIDUALS = 0.476029E-03
 STANDARD ERROR OF THE REGRESSION = 0.328920E-02
 MEAN OF DEPENDENT VARIABLE = 0.247661E-01
 STANDARD DEVIATION = 0.617834E-02
 R² = 0.728899
 ADJUSTED R² = 0.716576
 DURBIN-WATSON STATISTIC = 2.1668
 LOG OF LIKELIHOOD FUNCTION = 203.564
 NUMBER OF OBSERVATIONS = 47

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.17891E-02	0.49311E-02	-0.36283
AQTSA	0.79041	0.12612	6.2670
AFCSA	0.59659	0.81064E-01	7.3595

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EQUATION 6: TOTAL FUEL EXPENSE & PURCHASED POWER COST

QTSA = f0 + f1*TVCSA

SUM OF SQUARED RESIDUALS = 0.157908E+10
 STANDARD ERROR OF THE REGRESSION = 5859.00
 MEAN OF DEPENDENT VARIABLE = 52201.0
 STANDARD DEVIATION = 20086.1
 R² = 0.917784
 ADJUSTED R² = 0.915997
 DURBIN-WATSON STATISTIC = 2.1183
 F-STATISTIC = 506.383
 NUMBER OF OBSERVATIONS = 48

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	1386.7	2440.7	0.56817
TVCSA	0.97310	0.43845E-01	22.194

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MODEL: SPS

SYMBOL DECLARATIONS

ENDOGENOUS:

AFCSPS	-	AVERAGE FIXED COSTS:000'S OF \$ PER MWH
AQTSPS	-	AVERAGE FUEL EXPENSES AND PURCHASED POWER COSTS: 000'S OF \$ PER MWH
CAPINSN	-	INSTRUMENT FOR CAPSPSN
CAPINST	-	INSTRUMENT FOR CAPSPST
CAPSPSN	-	COMMERCIAL AVERAGE PRICE (NON-TEXAS):000'S OF \$ PER MWH
CAPSPST	-	COMMERCIAL AVERAGE PRICE (TEXAS):000'S OF \$ PER MWH
CSSPSN	-	COMMERCIAL SALES (NON-TEXAS):MWH
CSSPST	-	COMMERCIAL SALES (TEXAS):MWH
GENRSPS	-	GENERATION REQUIREMENTS:MWH
GRNG	-	GENERATION REQUIREMENTS FROM NATURAL GAS PLANT:MWH
GRPLNTA	-	GENERATION REQUIREMENT FROM PLANT A:MWH
GRPLNTB	-	GENERATION REQUIREMENT FROM PLANT B:MWH
GRPLNTC	-	GENERATION REQUIREMENT FROM PLANT C:MWH
GRPLNTD	-	GENERATION REQUIREMENT FROM PLANT D:MWH
GRPPNU	-	GENERATION REQUIREMENTS FROM PURCHASED POWER FROM NON-UTILITY SOURCES:MWH
IAPINSN	-	INSTRUMENT FOR IAPSPSN
IAPINST	-	INSTRUMENT FOR IAPSPST
IAPSPSN	-	INDUSTRIAL AVERAGE PRICE (NON-TEXAS):000'S OF \$ PER MWH
IAPSPST	-	INDUSTRIAL AVERAGE PRICE (TEXAS):000'S OF \$ PER MWH
ISSPSN	-	INDUSTRIAL SALES (NON-TEXAS):MWH
ISSPSS	-	INDUSTRIAL SALES (TOTAL):MWH
ISSPST	-	INDUSTRIAL SALES (TEXAS):MWH
MATSPSS	-	FOUR-QUARTER MOVING AVERAGE OF TOTAL SALES:MWH
PLNTAC	-	CONDITIONAL VARIABLE
PLNTBC	-	CONDITIONAL VARIABLE
PLNTCC	-	CONDITIONAL VARIABLE

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

PLNTDC	-	CONDITIONAL VARIABLE
PPNUC	-	CONDITIONAL VARIABLE
QTSPS	-	TOTAL FUEL EXPENSE AND PURCHASED POWER COST ESTIMATE:000'S OF \$
RAPINSN	-	INSTRUMENT FOR RAPSPSN
RAPINST	-	INSTRUMENT FOR RAPSPST
RAPSPSN	-	RESIDENTIAL AVERAGE PRICE (NON-TEXAS):000'S OF \$ PER MWH
RAPSPST	-	RESIDENTIAL AVERAGE PRICE (TEXAS):000'S OF \$ PER MWH
RSSPSN	-	RESIDENTIAL SALES (NON-TEXAS):MWH
RSSPST	-	RESIDENTIAL SALES (TEXAS):MWH
TSSPS	-	TOTAL SYSTEM SALES:MWH
TSSPSN	-	TOTAL NON-TEXAS SYSTEM SALES:MWH
TSSPST	-	TOTAL TEXAS SYSTEM SALES:MWH
TVCSPS	-	TOTAL FUEL AND PURCHASED POWER EXPENSE REQUIREMENTS:000'S OF \$
VCNG	-	NATURAL GAS COST:000'S OF \$
VCPLNTA	-	VARIABLE COST FOR PLANT A:000'S OF \$
VCPLNTB	-	VARIABLE COST FOR PLANT B:000'S OF \$
VCPLNTC	-	VARIABLE COST FOR PLANT C:000'S OF \$
VCPLNTD	-	VARIABLE COST FOR PLANT D:000'S OF \$
VCPPNU	-	PURCHASED POWER COST FROM NON-UTILITY SOURCES: 000'S OF \$

EXOGENOUS:

APTUM	-	TEXAS AVERAGE PRICE DUMMY
C	-	CONSTANT TERM
CCDDINSN	-	INSTRUMENT FOR (NON-TEXAS) COMMERCIAL COOLING DEGREE DAYS
CCDDINST	-	INSTRUMENT FOR (TEXAS) COMMERCIAL COOLING DEGREE DAYS
CCSPSN	-	COMMERCIAL CUSTOMERS (NON-TEXAS):NUMBER OF CUSTOMERS
CCSPST	-	COMMERCIAL CUSTOMERS (TEXAS):NUMBER OF CUSTOMERS
CDDSPS	-	COOLING DEGREE DAYS:NUMBER OF DAYS
CHDDINSN	-	INSTRUMENT FOR (NON-TEXAS) COMMERCIAL HEATING DEGREE DAYS
CHDDINST	-	INSTRUMENT FOR (TEXAS) COMMERCIAL HEATING DEGREE DAYS

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CPITX	-	TEXAS CONSUMER PRICE INDEX
GCPLANTA	-	GENERATION CAPABILITY OF PLANT A:MWH
GCPLANTB	-	GENERATION CAPABILITY OF PLANT B:MWH
GCPLANTC	-	GENERATION CAPABILITY OF PLANT C:MWH
GCPLANTD	-	GENERATION CAPABILITY OF PLANT D:MWH
GCPPNU	-	GENERATION CAPABILITY OF PURCHASED POWER FROM NON-UTILITY SOURCES:MWH
ILFCSSPS	-	LOSS FACTOR:COMMERCIAL SALES
ILFISSPS	-	LOSS FACTOR:INDUSTRIAL SALES
ILFOSSPS	-	LOSS FACTOR:OTHER SALES
ILFRSSPS	-	LOSS FACTOR:RESIDENTIAL SALES
ILFWSSPS	-	LOSS FACTOR:WHOLESALE SALES
MSSPSN	-	MISCELLANEOUS NON-TEXAS SALES:MWH
MSSPST	-	MISCELLANEOUS TEXAS SALES:MWH
NAGSPST	-	NON-AGRICULTURAL EMPLOYMENT IN TEXAS SPS SERVICE AREA:000'S OF\$
NTXDUM	-	NON-TEXAS DUMMY
OSSPSN	-	OTHER NON-TEXAS SALES:MWH
OSSPST	-	OTHER TEXAS SALES:MWH
PNGIND	-	PRICE OF NATURAL GAS TO INDUSTRIAL CUSTOMERS: \$ PER MCF
PPIF	-	PRODUCER PRICE INDEX:FINISHED GOODS
RCDDINSN	-	INSTRUMENT FOR (NON-TEXAS) RESIDENTIAL COOLING DEGREE DAYS
RCDDINST	-	INSTRUMENT FOR (TEXAS) RESIDENTIAL COOLING DEGREE DAYS
RCSPST	-	RESIDENTIAL CUSTOMER (TEXAS):NUMBER OF CUSTOMERS
RHDDINSN	-	INSTRUMENT FOR (TEXAS) RESIDENTIAL HEATING DEGREE DAYS
RHDDINST	-	INSTRUMENT FOR (TEXAS) RESIDENTIAL HEATING DEGREE DAYS
TIME	-	TIME TREND VARIABLE
UFCNG	-	FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY IN NATURAL GAS PLANT:000'S OF \$
UFCPLANTA	-	VARIABLE COST TO PRODUCE ONE MWH OF ELECTRICITY IN PLANT A:000'S OF \$ PER MWH
UFCPLANTB	-	VARIABLE COST TO PRODUCE ONE MWH OF ELECTRICITY IN PLANT B:000'S OF \$ PER MWH
UFCPLANTC	-	VARIABLE COST TO PRODUCE ONE MWH OF ELECTRICITY IN PLANT C:000'S OF \$ PER MWH
UFCPLANTD	-	VARIABLE COST TO PRODUCE ONE MWH OF ELECTRICITY IN PLANT D:000'S OF \$ PER MWH

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

UFCPPNU - UNIT COST OF PURCHASED POWER FROM NON-UTILITY SOURCES:000'S OF \$ PER MWH
 WSSPSN - WHOLESALE NON-TEXAS SALES:MWH
 WSSPST - WHOLESALE TEXAS SALES:MWH

IDENTITIES

RAPINST = (RAPSPST(-4)/CPITX(-4))*RCSPST
 CAPINST = (CAPSPST(-2)/PPIF(-2))*CCSPST
 IAPINST = IAPSPST/PNGIND
 RAPINSN = (RAPSPSN(-4)/CPITX(-4))*RCSPSN
 TSSPST = RSSPST+CSSPST+ISSPST+WSSPST+OSSPST+MSSPST
 TSSPSN = RSSPSN+CSSPSN+ISSPSN+WSSPSN+OSSPSN+MSSPSN
 TSSPS = TSSPST+TSSPSN
 MATSSPS = (TSSPS+TSSPS(-1)+TSSPS(-2)+TSSPS(-3))/4
 AQTSPS = QTSPS/TSSPS
 AFCSPS = MATFCSPS/MATSSPS
 GENRSPS = (RSSPST+RSSPSN)*ILFRSSPS+(CSSPST+CSSPSN)*ILFCSSPS+(ISSPST+ISSPSN)*ILFISSPS+(WSSPST+WSSPSN)*ILFWSSPS+(OSSPST+OSSPSN)*ILFOSSPS+(MSSPST+MSSPSN)*ILFOSSPS
 PPNUC = GENRSPS-GCPPNU
 PLNTAC = PPNUC-GCPLNTA
 PLNTBC = PLNTAC-GCPLNTB
 PLNTCC = PLNTBC-GCPLNTC
 PLNTDC = PLNTCC-GCPLNTD
 GRPPNU = (PPNUC>0)*GCPPNU+(PPNUC<0)*GENRSPS
 VCPPNU = GRPPNU*UFCPPNU
 GRPLNTA = (PPNUC>0)*((PLNTAC>0)*GCPLNTA+(PLNTAC<0)*PPNUC)
 VCPLNTA = GRPLNTA*UFCPLNTA
 GRPLNTB = (PPNUC>0)*(PLNTAC>0)*((PLNTBC>0)*GCPLNTB+(PLNTBC<0)*PLNTAC)
 VCPLNTB = GRPLNTB*UFCPLNTB
 GRPLNTC = (PPNUC>0)*(PLNTAC>0)*(PLNTBC>0)*((PLNTCC>0)*GCPLNTC+(PLNTCC<0)*PLNTBC)
 VCPLNTC = GRPLNTC*UFCPLNTC
 GRPLNTD = (PPNUC>0)*(PLNTAC>0)*(PLNTBC>0)*(PLNTCC>0)*((PLNTDC>0)*GCPLNTD+(PLNTDC<0)*PLNTCC)
 VCPLNTD = GRPLNTD*UFCPLNTD
 GRNG = (PPNUC>0)*(PLNTAC>0)*(PLNTBC>0)*(PLNTCC>0)*(PLNTDC>0)*PLNTDC

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VCNG = GRNG*UFCNG

TVCSPS = VCPPNU+VCPLNTA+VCPLNTB+VCPLNTC+VCPLNTD+VCNG

EQUATION ESTIMATES

2SLS ESTIMATION USING COCHRANE-ORCUTT ITERATIVE TECHNIQUE

EQUATION 1: TEXAS RESIDENTIAL SALES

$$\text{RSSPST} = a_0 + a_1 \cdot \text{RSSPST}(-4) + a_2 \cdot \text{RAPINST} + a_3 \cdot \text{RCDDINST} + a_4 \cdot \text{RHDDINST}$$

FINAL VALUE OF RHO	=	0.337136
STANDARD ERROR OF RHO	=	0.161458
T-STATISTIC FOR RHO	=	2.08807
SUM OF SQUARED RESIDUALS	=	0.305947E+10
STANDARD ERROR OF THE REGRESSION	=	10271.3
MEAN OF DEPENDENT VARIABLE	=	259535.
STANDARD DEVIATION	=	83096.3
R ²	=	0.986575
ADJUSTED R ²	=	0.984723
DURBIN-WATSON STATISTIC	=	2.3456
LOG OF LIKELIHOOD FUNCTION	=	-359.601
NUMBER OF OBSERVATIONS	=	34

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.11211E+06	35569.	3.1519
RSSPST(-4)	0.56952	0.59343E-01	9.5971
RAPINST	-7.8537	5.9352	-1.3232
RCDDINST	0.67580E-03	0.93532E-04	7.2253
RHDDINST	0.25170E-03	0.35633E-04	7.0637

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

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EQUATION 2: NON-TEXAS RESIDENTIAL SALES

$$\text{RSSPSN} = b_0 + b_1 \cdot \text{RSSPSN}(-4) + b_2 \cdot \text{RAPINSN} + b_3 \cdot \text{NTXDUM} + b_4 \cdot \text{RCDDINSN} + b_5 \cdot \text{RHDDINSN}$$

SUM OF SQUARED RESIDUALS	=	0.115603E+10
STANDARD ERROR OF THE REGRESSION	=	6207.61
MEAN OF DEPENDENT VARIABLE	=	139289.
STANDARD DEVIATION	=	27563.1
R ²	=	0.956525
ADJUSTED R ²	=	0.949279
DURBIN-WATSON STATISTIC	=	2.3115
F-STATISTIC	=	132.008
NUMBER OF OBSERVATIONS	=	36

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	59214.	16069.	3.6850
RSSPSN(-4)	0.28133	0.83809E-01	3.3568
RAPINSN	-15.368	7.9809	-1.9256
NTXDUM	28257.	6062.5	4.6610
RCDDINSN	0.76878E-03	0.92611E-04	8.3012
RHDDINSN	0.36874E-03	0.45217E-04	8.1549

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EQUATION 3: TEXAS COMMERCIAL SALES

$$\text{CSSPST} = c_0 + c_1 \cdot \text{CSSPST}(-4) + c_2 \cdot \text{CAPINST} + c_3 \cdot \text{CCDDINST} + c_4 \cdot \text{CHDDINST}$$

FINAL VALUE OF RHO	=	0.252682
STANDARD ERROR OF RHO	=	0.165933

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T-STATISTIC FOR RHO = 1.52280
 SUM OF SQUARED RESIDUALS = 0.364038E+10
 STANDARD ERROR OF THE REGRESSION = 11204.0
 MEAN OF DEPENDENT VARIABLE = 254570.
 STANDARD DEVIATION = 43660.8
 R² = 0.942171
 ADJUSTED R² = 0.934195
 DURBIN-WATSON STATISTIC = 1.8856
 LOG OF LIKELIHOOD FUNCTION = -362.557
 NUMBER OF OBSERVATIONS = 34

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.26125E+06	35620.	7.3343
CSSPST(-4)	0.35673	0.71625E-01	4.9805
CAPINST	-53.767	15.499	-3.4691
CCDDINST	0.29230E-02	0.41060E-03	7.1188
CHDDINST	0.87497E-03	0.16231E-03	5.3909

ORDINARY LEAST SQUARES

EQUATION 4: NON-TEXAS COMMERCIAL SALES

$$\text{CSSPSN} = d_0 + d_1 \cdot \text{CSPSN}(-1) + d_2 \cdot \text{NTXDUM} + d_3 \cdot \text{CCDDINSN} + d_4 \cdot \text{CHDDINSN}$$

SUM OF SQUARED RESIDUALS = 0.659201E+09
 STANDARD ERROR OF THE REGRESSION = 4611.35
 MEAN OF DEPENDENT VARIABLE = 105384.
 STANDARD DEVIATION = 20742.6
 R² = 0.956225
 ADJUSTED R² = 0.950577
 DURBIN-WATSON STATISTIC = 2.1595

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

F-STATISTIC = 169.293
 LOG OF LIKELIHOOD FUNCTION = -352.096
 NUMBER OF OBSERVATIONS = 36

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	42316.	6843.7	6.1832
CSSPSN(-1)	0.20440	0.71863E-01	2.8443
NTXDUM	19118.	3658.3	5.2260
CCDDINSN	0.40375E-02	0.37624E-03	10.731
CHDDINSN	0.94221E-03	0.18903E-03	4.9843

2SLS ESTIMATION USING MAXIMUM LIKELIHOOD ITERATIVE TECHNIQUE

EQUATION 5: EXAS INDUSTRIAL SALES

$$SSPST = e_0 + e_1 * IAPINST + e_2 * CDDSPS + e_3 * TIME$$

FINAL VALUE OF RHO = 0.300627
 STANDARD ERROR OF RHO = 0.166477
 T-STATISTIC FOR RHO = 1.80581
 SUM OF SQUARED RESIDUALS = 0.408912E+11
 STANDARD ERROR OF THE REGRESSION = 34180.7
 MEAN OF DEPENDENT VARIABLE = 920256.
 STANDARD DEVIATION = 79147.0
 R² = 0.828862
 ADJUSTED R² = 0.814193
 DURBIN-WATSON STATISTIC = 1.9155
 LOG OF LIKELIHOOD FUNCTION = -460.413
 NUMBER OF OBSERVATIONS = 39

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VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.13380E+08	0.11555E+07	-11.580
IAPINST	-0.82465E+07	0.57199E+07	1.4417
CDDSPS	18.823	11.545	1.6304
TIME	0.13488E+08	0.10854E+07	12.427

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EQUATION 6: NON-TEXAS INDUSTRIAL SALES

$$\text{ISSPSN} = f_0 + f_1 \cdot \text{ISSPSN}(-1) + f_2 \cdot \text{CDDSPS}$$

SUM OF SQUARED RESIDUALS = 0.265368E+11
 STANDARD ERROR OF THE REGRESSION = 27150.2
 MEAN OF DEPENDENT VARIABLE = 275064.
 STANDARD DEVIATION = 63009.9
 R² = 0.827512
 ADJUSTED R² = 0.817930
 DURBIN-WATSON STATISTIC = 2.3059
 F-STATISTIC = 84.3352
 NUMBER OF OBSERVATIONS = 39

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	2873.5	20982.	0.13695
ISSPSN(-1)	0.96795	0.72430E-0	13.364
CDDSPS	24.436	9.7576	2.5043

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EQUATION 7: TEXAS RESIDENTIAL AVERAGE PRICE

$$\text{RAPSPST} = g_0 + g_1 \cdot \text{AQTSPS} + g_2 \cdot \text{AFCSPS} + g_3 \cdot \text{APTDUM}$$

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

SUM OF SQUARED RESIDUALS = 0.416582E-03
 STANDARD ERROR OF THE REGRESSION = 0.355298E-02
 MEAN OF DEPENDENT VARIABLE = 0.709974E-01
 STANDARD DEVIATION = 0.539444E-02
 R² = 0.604196
 ADJUSTED R² = 0.568214
 DURBIN-WATSON STATISTIC = 1.7695
 F-STATISTIC = 16.6623
 NUMBER OF OBSERVATIONS = 37

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.10325E-01	0.92683E-02	1.1140
AQTSPS	1.5540	0.29420	5.2820
AFCSPS	0.79162	0.24373	3.2480
APTDUM	-0.94099E-02	0.36166E-02	-2.6018

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EQUATION 8: NON-TEXAS RESIDENTIAL AVERAGE PRICE

$$\text{RAPSPSN} = h_0 + h_1 \cdot \text{AQTSPS} + h_2 \cdot \text{AFCSPS}$$

SUM OF SQUARED RESIDUALS = 0.314654E-03
 STANDARD ERROR OF THE REGRESSION = 0.304212E-02
 MEAN OF DEPENDENT VARIABLE = 0.663958E-01
 STANDARD DEVIATION = 0.492715E-02
 R² = 0.644538
 ADJUSTED R² = 0.623628
 DURBIN-WATSON STATISTIC = 1.9375
 F-STATISTIC = 30.2183
 NUMBER OF OBSERVATIONS = 37

A-6 SOUTHWESTERN PUBLIC SERVICE COMPANY

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.12760E-02	0.79330E-02	0.16085
AQTSPS	1.5696	0.25270	6.2114
AFCSPS	0.95720	0.20851	4.5908

2SLS ESTIMATION

EQUATION 9: TEXAS COMMERCIAL AVERAGE PRICE

$$\text{CAPSPST} = i_0 + i_1 \cdot \text{AQTSPS} + i_2 \cdot \text{AFCSPS} + i_3 \cdot \text{APTDUM}$$

SUM OF SQUARED RESIDUALS = 0.413223E-03
 STANDARD ERROR OF THE REGRESSION = 0.353863E-02
 MEAN OF DEPENDENT VARIABLE = 0.653857E-01
 STANDARD DEVIATION = 0.525710E-02
 R² = 0.585506
 ADJUSTED R² = 0.547825
 DURBIN-WATSON STATISTIC = 1.8913
 F-STATISTIC = 15.4851
 NUMBER OF OBSERVATIONS = 37

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.11228E-01	0.92309E-02	1.2163
AQTSPS	1.0088	0.29301	3.4427
AFCSPS	1.1677	0.24274	4.8103
APTDUM	-0.91416E-02	0.36020E-02	-2.5379

2SLS ESTIMATION

EQUATION 10 NON-TEXAS COMMERCIAL AVERAGE PRICE

$$\text{CAPSPSN} = j_0 + j_1 \cdot \text{AQTSPS} + j_2 \cdot \text{AFCSPS}$$

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

SUM OF SQUARED RESIDUALS = 0.228957E-03
 STANDARD ERROR OF THE REGRESSION = 0.259500E-02
 MEAN OF DEPENDENT VARIABLE = 0.658366E-01
 STANDARD DEVIATION = 0.485562E-02
 R² = 0.731413
 ADJUSTED R² = 0.715613
 DURBIN-WATSON STATISTIC = 1.7304
 F-STATISTIC = 46.0212
 NUMBER OF OBSERVATIONS = 37

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.41836E-02	0.67670E-02	0.61823
AQTSPS	1.1034	0.21555	5.1189
AFCSPS	1.3716	0.17786	7.7115

2SLS ESTIMATION

EQUATION 11: TEXAS INDUSTRIAL AVERAGE PRICE

$$IAPSPST = k_0 + k_1 \cdot AQTSPS + k_2 \cdot AFCSPS + k_3 \cdot APTDUM$$

SUM OF SQUARED RESIDUALS = 0.213694E-03
 STANDARD ERROR OF THE REGRESSION = 0.254472E-02
 MEAN OF DEPENDENT VARIABLE = 0.434645E-01
 STANDARD DEVIATION = 0.407031E-02
 R² = 0.644107
 ADJUSTED R² = 0.611753
 DURBIN-WATSON STATISTIC = 1.3012
 F-STATISTIC = 19.7014
 NUMBER OF OBSERVATIONS = 37

A-6 SOUTHWESTERN PUBLIC SERVICE COMPANY

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.37701E-02	0.66382E-02	-0.56795
AQTSPS	1.3019	0.21071	6.1787
AFCSPS	0.50417	0.17456	2.8882
APTDUM	-0.72695E-02	0.25903E-02	2.8064

2SLS ESTIMATION

EQUATION 12: NON-TEXAS INDUSTRIAL AVERAGE PRICE

$$APSPSN = 10 + 11*AGTSPS + 12*AFCSPS$$

SUM OF SQUARED RESIDUALS	=	0.571177E-03
STANDARD ERROR OF THE REGRESSION	=	0.409870E-02
MEAN OF DEPENDENT VARIABLE	=	0.460531E-01
STANDARD DEVIATION	=	0.537439E-02
R ²	=	0.450806
ADJUSTED R ²	=	0.418500
DURBIN-WATSON STATISTIC	=	1.9198
F-STATISTIC	=	13.9484
NUMBER OF OBSERVATIONS	=	37

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.70447E-02	0.10688E-01	-0.65911
AQTSPS	0.99977	0.34046	2.9365
AFCSPS	1.1211	0.28092	3.9907

2SLS ESTIMATION USING MAXIMUM LIKELIHOOD ITERATIVE TECHNIQUE

EQUATION 13: TOTAL FUEL & PURCHASED POWER EXPENSE

$$QTSPS = m_0 + m_1*TVCSPPS$$

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

FINAL VALUE OF RHO = 0.829038
 STANDARD ERROR OF RHO = 0.892434E-01
 T-STATISTIC FOR RHO = 9.28963
 SUM OF SQUARED RESIDUALS = 0.795272E+09
 STANDARD ERROR OF THE REGRESSION = 4636.15
 MEAN OF DEPENDENT VARIABLE = 17893.7
 STANDARD DEVIATION = 12871.9
 R² = 0.875096
 ADJUSTED R² = 0.871720
 DURBIN-WATSON STATISTIC = 1.9805
 LOG OF LIKELIHOOD FUNCTION = -384.117
 NUMBER OF OBSERVATIONS = 39

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	25552.	6778.5	3.7695
TVCSPS	0.82595	0.61935E-01	13.336

A-7 SOUTHWESTERN ELECTRIC POWER COMPANY

MODEL: SWEPCO

SYMBOL DECLARATIONS

ENDOGENOUS:

AFCSWE	-	AVERAGE FIXED COSTS:000'S OF \$ PER MWH
AQTSWE	-	AVERAGE FUEL EXPENSES AND PURCHASED POWER COSTS:000'S OF \$ PER MWH
CAPINSN	-	INSTRUMENT FOR CAPSWEN
CAPINST	-	INSTRUMENT FOR CAPSWET
CAPSWEN	-	COMMERCIAL AVERAGE PRICE (NON-TEXAS):000'S OF \$ PER MWH
CAPSWET	-	COMMERCIAL AVERAGE PRICE (TEXAS):000'S OF \$ PER MWH
CSSWEN	-	COMMERCIAL SALES (NON-TEXAS):MWH
CSSWET	-	COMMERCIAL SALES (TEXAS):MWH
GENRSWE	-	GENERATION REQUIREMENTS:MWH
GRNG	-	GENERATION REQUIREMENTS FROM NATURAL GAS PLANT:MWH
GRPLNTA	-	GENERATION REQUIREMENT FROM PLANT A:MWH
GRPLNTB	-	GENERATION REQUIREMENT FROM PLANT B:MWH
GRPLNTC	-	GENERATION REQUIREMENT FROM PLANT C:MWH
GRPLNTD	-	GENERATION REQUIREMENT FROM PLANT D:MWH
GRPLNTE	-	GENERATION REQUIREMENT FROM PLANT E:MWH
GRPLNTF	-	GENERATION REQUIREMENT FROM PLANT F:MWH
GRPPNU	-	GENERATION REQUIREMENTS FROM PURCHASED POWER FROM NON-UTILITY SOURCES:MWH
IAPINSN	-	INSTRUMENT FOR IAPSWEN
IAPINST	-	INSTRUMENT FOR IAPSWET
IAPSWEN	-	INDUSTRIAL AVERAGE PRICE (NON-TEXAS):000'S OF \$ PER MWH
IAPSWET	-	INDUSTRIAL AVERAGE PRICE (TEXAS):000'S OF \$ PER MWH
ISSWEN	-	INDUSTRIAL SALES (NON-TEXAS):MWH
ISSWET	-	INDUSTRIAL SALES (TEXAS):MWH
MATSSWE	-	FOUR-QUARTER MOVING AVERAGE OF TOTAL SALES:MWH
PLNTAC	-	CONDITIONAL VARIABLE
PLNTBC	-	CONDITIONAL VARIABLE
PLNTCC	-	CONDITIONAL VARIABLE

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

PLNTDC	-	CONDITIONAL VARIABLE
PLNTEC	-	CONDITIONAL VARIABLE
PLNTFC	-	CONDITIONAL VARIABLE
PPNUC	-	CONDITIONAL VARIABLE
QTSWE	-	TOTAL FUEL EXPENSE AND PURCHASED POWER COST ESTIMATE: 000'S OF \$
RAPINSN	-	INSTRUMENT FOR RAPSWEN
RAPINST	-	INSTRUMENT FOR RAPSWET
RAPSWEN	-	RESIDENTIAL AVERAGE PRICE (NON-TEXAS):000'S OF \$ PER MWH
RAPSWET	-	RESIDENTIAL AVERAGE PRICE (TEXAS):000'S OF \$ PER MWH
RSSWEN	-	RESIDENTIAL SALES (NON-TEXAS):MWH
RSSWET	-	RESIDENTIAL SALES (TEXAS):MWH
TSSWE	-	TOTAL SYSTEM SALES:MWH
TSSWEN	-	TOTAL NON-TEXAS SYSTEM SALES:MWH
TSSWET	-	TOTAL TEXAS SYSTEM SALES:MWH
TVCSWE	-	TOTAL FUEL AND PURCHASED POWER EXPENSE REQUIREMENTS: 000'S OF \$
VCNG	-	NATURAL GAS COST:000'S OF \$
VCPLNTA	-	VARIABLE COST FOR PLANT A:000'S OF \$
VCPLNTB	-	VARIABLE COST FOR PLANT B:000'S OF \$
VCPLNTC	-	VARIABLE COST FOR PLANT C:000'S OF \$
VCPLNTD	-	VARIABLE COST FOR PLANT D:000'S OF \$
VCPLNTE	-	VARIABLE COST FOR PLANT E:000'S OF \$
VCPLNTF	-	VARIABLE COST FOR PLANT F:000'S OF \$
VCPPNU	-	PURCHASED POWER COST FROM NON-UTILITY SOURCES: 000'S OF \$

EXOGENOUS:

C	-	CONSTANT TERM
CCDDINSN	-	INSTRUMENT FOR (NON-TEXAS) COMMERCIAL COOLING DEGREE DAYS
CCDDINST	-	INSTRUMENT FOR (TEXAS) COMMERCIAL COOLING DEGREE DAYS
CCSWEN	-	COMMERCIAL CUSTOMERS (NON-TEXAS):NUMBER OF CUSTOMERS
CCSWET	-	COMMERCIAL CUSTOMERS (TEXAS):NUMBER OF CUSTOMERS
CDDSWE	-	COOLING DEGREE DAYS:NUMBER OF DAYS
CHDDINSN	-	INSTRUMENT FOR (NON-TEXAS) COMMERCIAL HEATING DEGREE DAYS

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CHDDINST	-	INSTRUMENT FOR (TEXAS) COMMERCIAL HEATING DEGREE DAYS
CPITX	-	TEXAS CONSUMER PRICE INDEX
GCPLNTA	-	GENERATION CAPABILITY OF PLANT A:MWH
GCPLNTB	-	GENERATION CAPABILITY OF PLANT B:MWH
GCPLNTC	-	GENERATION CAPABILITY OF PLANT C:MWH
GCPLNTD	-	GENERATION CAPABILITY OF PLANT D:MWH
GCPLNTE	-	GENERATION CAPABILITY OF PLANT E:MWH
GCPLNTF	-	GENERATION CAPABILITY OF PLANT F:MWH
GCPPNU	-	GENERATION CAPABILITY OF PURCHASED POWER FROM NON-UTILITY SOURCES:MWH
ILFCSSWE	-	LOSS FACTOR:COMMERCIAL SALES
ILFISSWE	-	LOSS FACTOR:INDUSTRIAL SALES
ILFOSSWE	-	LOSS FACTOR:OTHER SALES
ILFRSSWE	-	LOSS FACTOR:RESIDENTIAL SALES
ILFWSSWE	-	LOSS FACTOR:WHOLESALE SALES
ISDUM	-	INDUSTRIAL SALES DUMMY
MATFCSWE	-	FOUR-QUARTER MOVING AVERAGE TOTAL FIXED COSTS:000'S OF \$
NAGSWEN	-	NON-AGRICULTURAL EMPLOYMENT IN NON-TEXAS SERVICE AREA: 000'S OF PERSONS
OSSWEN	-	OTHER NON-TEXAS SALES:MWH
OSSWET	-	OTHER TEXAS SALES:MWH
PNGCOM	-	PRICE OF NATURAL GAS TO COMMERCIAL CUSTOMERS:\$ PER MCF
PNGRES	-	PRICE OF NATURAL GAS TO RESIDENTIAL CUSTOMERS:\$ PER MCF
POPSWET	-	SERVICE AREA POPULATION (TEXAS):000'S OF PERSONS
PPIF	-	PRODUCER PRICE INDEX:FINISHED GOODS
PPII	-	PRODUCER PRICE INDEX:INDUSTRIAL GOODS
RCDDINSN	-	INSTRUMENT FOR (NON-TEXAS) RESIDENTIAL COOLING DEGREE DAYS
RCDDINST	-	INSTRUMENT FOR (TEXAS) RESIDENTIAL COOLING DEGREE DAYS
RCSWEN	-	RESIDENTIAL CUSTOMER (NON-TEXAS):NUMBER OF CUSTOMERS
RCSWET	-	RESIDENTIAL CUSTOMER (TEXAS):NUMBER OF CUSTOMERS
RHDDINSN	-	INSTRUMENT FOR (NON-TEXAS) RESIDENTIAL HEATING DEGREE DAYS
QRHDDINST	-	INSTRUMENT FOR (TEXAS) RESIDENTIAL HEATING DEGREE DAYS
RPISWEN	-	REAL PERSONAL INCOME (NON-TEXAS):BILLIONS OF \$
RPISWET	-	REAL PERSONAL INCOME (TEXAS):BILLIONS OF \$
UFCNG	-	FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY IN NATURAL GAS PLANT:000'S OF \$

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

UFCPLNTA	-	VARIABLE COST TO PRODUCE ONE MWH OF ELECTRICITY IN PLANT A: 000'S OF \$ PER MWH
UFCPLNTB	-	VARIABLE COST TO PRODUCE ONE MWH OF ELECTRICITY IN PLANT B: 000'S OF \$ PER MWH
UFCPLNTC	-	VARIABLE COST TO PRODUCE ONE MWH OF ELECTRICITY IN PLANT C: 000'S OF \$ PER MWH
UFCPLNTD	-	VARIABLE COST TO PRODUCE ONE MWH OF ELECTRICITY IN PLANT D: 000'S OF \$ PER MWH
UFCPLNTE	-	VARIABLE COST TO PRODUCE ONE MWH OF ELECTRICITY IN PLANT E: 000'S OF \$ PER MWH
UFCPLNTF	-	VARIABLE COST TO PRODUCE ONE MWH OF ELECTRICITY IN PLANT F: 000'S OF \$ PER MWH
UFCPPNU	-	UNIT COST OF PURCHASED POWER FROM NON-UTILITY SOURCES: 000'S OF \$ PER MWH
WSSWEN	-	WHOLESALE NON-TEXAS SALES:MWH
WSSWET	-	WHOLESALE TEXAS SALES:MWH

IDENTITIES

RAPINST	=	(RAPSWET(-3)/PNGRES(-3))*RCSWET
CAPINST	=	(CAPSWET(-1)/PPIF(-1))*CCSWET
IAPINST	=	IAPSWET(-4)/CPITX(-4)
RAPINSN	=	(RAPSWEN(-3)/PNGRES(-3))*RCSWEN
CAPINSN	=	(CAPSWEN(-3)/PNGCOM(-3))*CCSWEN
IAPINSN	=	IAPSWEN(-3)/PPII(-3)
TSSWET	=	RSSWET+CSSWET+ISSWET+WSSWET+OSSWET
TSSWEN	=	RSSWEN+CSSWEN+ISSWEN+WSSWEN+OSSWEN
TSSWE	=	TSSWET+TSSWEN
MATSSWE	=	(TSSWE+TSSWE(-1)+TSSWE(-2)+TSSWE(-3))/4
AFCSWE	=	MATFCSWE/MATSSWE
AQTSWE	=	QTSWE/TSSWE
GENRSWE	=	(RSSWET+RSSWEN)*ILFRSSWE+(CSSWET+CSSWEN)*ILFCSSWE+ (ISSWET+ISSWEN)*ILFISSWE+(WSSWET+WSSWEN)*ILFWSSWE+ (OSSWET+OSSWEN)*ILFOSSWE
PPNUC	=	GENRSWE-GCPPNU
PLNTAC	=	PPNUC-GCPLNTA
PLNTBC	=	PLNTAC-GCPLNTB
PLNTCC	=	PLNTBC-GCPLNTC
PLNTDC	=	PLNTCC-GCPLNTD
PLNTEC	=	PLNTDC-GCPLNTE

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PLNTFC	=	PLNTEC-GCPLNTF
GRPPNU	=	(PPNUC>0)*GCPPNU+(PPNUC<0)*GENRSWE
VCPPNU	=	GRPPNU*UFCPPNU
GRPLNTA	=	(PPNUC>0)*((PLNTAC>0)*GCPLNTA+(PLNTAC<0)*PPNUC)
VCPLNTA	=	GRPLNTA*UFCPLNTA
GRPLNTB	=	(PPNUC>0)*(PLNTAC>0)*(PLNTBC>0)*GCPLNTB+(PLNTBC<0)*PLNTAC
VCPLNTB	=	GRPLNTB*UFCPLNTB
GRPLNTC	=	(PPNUC>0)*(PLNTAC>0)*(PLNTBC>0)*((PLNTCC>0)*GCPLNTC+(PLNTCC<0)*PLNTBC)
VCPLNTC	=	GRPLNTC*UFCPLNTC
GRPLNTD	=	(PPNUC>0)*(PLNTAC>0)*(PLNTBC>0)*(PLNTCC>0)*((PLNTDC>0)*GCPLNTD+(PLNTDC<0)*PLNTCC)
VCPLNTD	=	GRPLNTD*UFCPLNTD
GRPLNTE	=	(PPNUC>0)*(PLNTAC>0)*(PLNTBC>0)*(PLNTCC>0)*(PLNTDC>0)*((PLNTEC>0)*GCPLNTE+(PLNTEC<0)*PLNTDC)
VCPLNTE	=	GRPLNTE*UFCPLNTE
GRPLNTF	=	(PPNUC>0)*(PLNTAC>0)*(PLNTBC>0)*(PLNTCC>0)*(PLNTDC>0)*((PLNTEC>0)*((PLNTFC>0)*GCPLNTF+(PLNTFC<0)*PLNTEC)
VCPLNTF	=	GRPLNTF*UFCPLNTF
GRNG	=	(PPNUC>0)*(PLNTAC>0)*(PLNTBC>0)*(PLNTCC>0)*(PLNTDC>0)*(PLNTEC>0)*(PLNTFC>0)*PLNTFC
VCNG	=	GRNG*UFCNG
TVCSWE	=	VCPPNU+VCPLNTA+VCPLNTB+VCPLNTC+VCPLNTD+VCPLNTE+VCPLNTF+VCNG

EQUATION ESTIMATES

2SLS ESTIMATION

EQUATION 1: TEXAS RESIDENTIAL SALES

$$\text{RSSWET} = a_0 + a_1 \cdot \text{RSSWET}(-4) + a_2 \cdot \text{RAPINST} + a_3 \cdot \text{RPISWET} + a_4 \cdot \text{RCDDINST} + a_5 \cdot \text{RHDDINST}$$

SUM OF SQUARED RESIDUALS = 0.110814E+11

STANDARD ERROR OF THE REGRESSION = 16243.2

MEAN OF DEPENDENT VARIABLE = 331528.

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

STANDARD DEVIATION = 94899.9
 R² = 0.973821
 ADJUSTED R² = 0.970705
 DURBIN-WATSON STATISTIC = 1.7771
 F-STATISTIC = 312.460
 NUMBER OF OBSERVATIONS = 48

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.11179E+06	63920.	-1.7489
RSSWET(-4)	0.36926	0.62334E-01	5.9239
RAPINST	-41.781	19.310	-2.1637
RPISWET	0.12508E+06	30248.	4.1353
RCDDINST	0.15357E-02	0.14841E-03	10.348
RHDDINST	0.75427E-03	0.81248E-04	9.2836

2SLS ESTIMATION

EQUATION 2: NON-TEXAS RESIDENTIAL SALES

$$RSSWEN = b_0 + b_1 * RSSWEN(-4) + b_2 * RAPINSN + b_3 * RPISWEN + b_4 * RCDDINSN + b_5 * RHDDINSN$$

SUM OF SQUARED RESIDUALS = 0.221938E+11
 STANDARD ERROR OF THE REGRESSION = 22987.5
 MEAN OF DEPENDENT VARIABLE = 487840.
 STANDARD DEVIATION = 148333.
 R² = 0.978539
 ADJUSTED R² = 0.975984
 DURBIN-WATSON STATISTIC = 1.9493
 F-STATISTIC = 383.003
 NUMBER OF OBSERVATIONS = 48

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VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-57470.	54780.	-1.0491
RSSWEN(-4)	0.35048	0.57165E-01	6.1311
RAPINSN	-48.916	17.395	-2.8120
RPISWEN	82041.	15635.	5.2471
RCDDINSN	0.14569E-02	0.12591E-03	11.570
RHDDINSN	0.60937E-03	0.63927E-04	9.5323

2SLS ESTIMATION USING MAXIMUM LIKELIHOOD ITERATIVE TECHNIQUE

EQUATION 3: TEXAS COMMERCIAL SALES

$$\text{CSSWET} = c_0 + c_1 \cdot \text{CAPINST} + c_2 \cdot \text{POPSWET} + c_3 \cdot \text{CCDDINST} + c_4 \cdot \text{CHDDINST}$$

FINAL VALUE OF RHO	=	0.715447
STANDARD ERROR OF RHO	=	0.107199
T-STATISTIC FOR RHO	=	6.67399
SUM OF SQUARED RESIDUALS	=	0.782053E+10
STANDARD ERROR OF THE REGRESSION	=	13811.0
MEAN OF DEPENDENT VARIABLE	=	72896.4
STANDARD DEVIATION	=	50464.1
R ²	=	0.931874
ADJUSTED R ²	=	0.925227
DURBIN-WATSON STATISTIC	=	1.9931
LOG OF LIKELIHOOD FUNCTION	=	-501.511
NUMBER OF OBSERVATIONS	=	46

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.56691E+06	0.17810E+06	-3.1830
CAPINST	-46.880	42.528	-1.1023
POPSWET	1722.1	425.98	4.0426
CCDDINST	0.46795E-02	0.34513E-03	13.559
CHDDINST	0.15125E-02	0.30850E-03	4.9029

2SLS ESTIMATION USING MAXIMUM LIKELIHOOD ITERATIVE TECHNIQUE

EQUATION 4: NON-TEXAS COMMERCIAL SALES

$$\text{CSSWEN} = d_0 + d_1 \cdot \text{CAPINSN} + d_2 \cdot \text{NAGSWEN} + d_3 \cdot \text{CCDDINSN} + d_4 \cdot \text{CHDDINSN}$$

FINAL VALUE OF RHO	=	0.663189
STANDARD ERROR OF RHO	=	0.112975
T-STATISTIC FOR RHO	=	5.87025
SUM OF SQUARED RESIDUALS	=	0.631609E+10
STANDARD ERROR OF THE REGRESSION	=	12119.6
MEAN OF DEPENDENT VARIABLE	=	125162.
STANDARD DEVIATION	=	68934.8
R ²	=	0.971723
ADJUSTED R ²	=	0.969092
DURBIN-WATSON STATISTIC	=	1.7954
LOG OF LIKELIHOOD FUNCTION	=	-517.083
NUMBER OF OBSERVATIONS	=	48

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.48440E+06	78159.	-6.1977
CAPINSN	-413.61	114.07	-3.6260
NAGSWEN	2706.7	276.12	9.8025
CCDDINSN	0.60183E-02	0.20426E-03	29.463
CHDDINSN	0.17938E-02	0.15868E-03	11.305

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2 SLS ESTIMATION

EQUATION 5: TEXAS INDUSTRIAL SALES

$$\text{ISSWET} = e_0 + e_1 \cdot \text{ISSWET}(-1) + e_2 \cdot \text{IAPINST} + e_3 \cdot \text{POPSWET} + e_4 \cdot \text{ISDUM} + e_5 \cdot \text{CDDSWE}$$

SUM OF SQUARED RESIDUALS	=	0.161202E+11
STANDARD ERROR OF THE REGRESSION	=	19591.2
MEAN OF DEPENDENT VARIABLE	=	642921.
STANDARD DEVIATION	=	113604.
R ²	=	0.973425
ADJUSTED R ²	=	0.970261
DURBIN-WATSON STATISTIC	=	1.6334
F-STATISTIC	=	307.678
NUMBER OF OBSERVATIONS	=	48

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.54046E+06	0.11692E+06	-4.6227
ISSWET(-1)	0.66735	0.57056E-01	11.696
IAPINST	-0.55440E+07	0.17114E+07	-3.2394
POPSWET	1800.9	328.99	5.4742
ISDUM	-0.12576E+06	14992.	-8.3888
CDDSWE	26.939	5.0349	5.3504

2 SLS ESTIMATION USING MAXIMUM LIKELIHOOD ITERATIVE TECHNIQUE

EQUATION 6: NON-TEXAS INDUSTRIAL SALES

$$\text{ISSWEN} = f_0 + f_1 \cdot \text{IAPINSN} + f_2 \cdot \text{NAGSWEN} + f_3 \cdot \text{CDDSWE}$$

FINAL VALUE OF RHO	=	0.689848
STANDARD ERROR OF RHO	=	0.109264

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

T-STATISTIC FOR RHO = 6.31362
 SUM OF SQUARED RESIDUALS = 0.816566E+10
 STANDARD ERROR OF THE REGRESSION = 14287.8
 MEAN OF DEPENDENT VARIABLE = 160753.
 STANDARD DEVIATION = 45755.4
 R² = 0.910019
 ADJUSTED R² = 0.903271
 DURBIN-WATSON STATISTIC = 2.2835
 LOG OF LIKELIHOOD FUNCTION = -481.615
 NUMBER OF OBSERVATIONS = 44

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.41867E+06	0.11910E+06	-3.5152
IAPINSN	-0.22984E+07	0.69354E+06	-3.3139
NAGSWEN	3070.6	409.05	7.5068
CDDSW	55.550	3.3687	16.490

2 SLS ESTIMATION

EQUATION 7: TEXAS RESIDENTIAL AVERAGE PRICE

$$\text{RAPSWET} = g_0 + g_1 \cdot \text{AQTSE} + g_2 \cdot \text{AFCSWE}$$

SUM OF SQUARED RESIDUALS = 0.119886E-02
 STANDARD ERROR OF THE REGRESSION = 0.516152E-02
 MEAN OF DEPENDENT VARIABLE = 0.557514E-01
 STANDARD DEVIATION = 0.152561E-01
 R² = 0.890411
 ADJUSTED R² = 0.885540
 DURBIN-WATSON STATISTIC = 2.1315
 F-STATISTIC = 182.805
 NUMBER OF OBSERVATIONS = 48

A-7 SOUTHWESTERN ELECTRIC POWER COMPANY

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.94839E-03	0.31982E-02	-0.29654
AQTSWE	0.46814	0.17435	2.6851
AFCSWE	1.6786	0.14036	11.959

2 SLS ESTIMATION USING MAXIMUM LIKELIHOOD ITERATIVE TECHNIQUE

EQUATION 8: NON-TEXAS RESIDENTIAL AVERAGE PRICE

$$\text{RAPSWEN} = h_0 + h_1 \cdot \text{AQTSWE} + h_2 \cdot \text{AFCSWE}$$

FINAL VALUE OF RHO = 0.724075
 STANDARD ERROR OF RHO = 0.984298E-01
 T-STATISTIC FOR RHO = 7.35626
 SUM OF SQUARED RESIDUALS = 0.821447E-03
 STANDARD ERROR OF THE REGRESSION = 0.427251E-02
 MEAN OF DEPENDENT VARIABLE = 0.154931E-01
 STANDARD DEVIATION = 0.572304E-02
 R² = 0.469039
 ADJUSTED R² = 0.445441
 DURBIN-WATSON STATISTIC = 1.8454
 LOG OF LIKELIHOOD FUNCTION = 194.935
 NUMBER OF OBSERVATIONS = 48

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.63265E-02	0.80657E-02	-0.78437
AQTSWE	0.84804	0.24354	3.4821
AFCSWE	1.4646	0.30860	4.7459

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

2SLS ESTIMATION

EQUATION 9: TEXAS COMMERCIAL AVERAGE PRICE

$$\text{CAPSWET} = i_0 + i_1 \cdot \text{AQTSWE} + i_2 \cdot \text{AFCSWE}$$

SUM OF SQUARED RESIDUALS = 0.285314E-03
 STANDARD ERROR OF THE REGRESSION = 0.251800E-02
 MEAN OF DEPENDENT VARIABLE = 0.464709E-01
 STANDARD DEVIATION = 0.980766E-02
 R² = 0.936891
 ADJUSTED R² = 0.934086
 DURBIN-WATSON STATISTIC = 2.1108
 F-STATISTIC = 334.024
 NUMBER OF OBSERVATIONS = 48

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.87076E-02	0.15602E-02	5.5811
AQTSWE	0.39161	0.85053E-01	4.6044
AFCSWE	1.0512	0.68474E-01	15.353

2SLS ESTIMATION USING MAXIMUM LIKELIHOOD ITERATIVE TECHNIQUE

EQUATION 10: NON-TEXAS COMMERCIAL AVERAGE PRICE

$$\text{CAPSWEN} = j_0 + j_1 \cdot \text{AQTSWE} + j_2 \cdot \text{AFCSWE}$$

FINAL VALUE OF RHO = 0.540903
 STANDARD ERROR OF RHO = 0.121810
 T-STATISTIC FOR RHO = 4.44054
 SUM OF SQUARED RESIDUALS = 0.387136E-03
 STANDARD ERROR OF THE REGRESSION = 0.293309E-02

A-7 SOUTHWESTERN ELECTRIC POWER COMPANY

MEAN OF DEPENDENT VARIABLE = 0.215443E-01
 STANDARD DEVIATION = 0.574128E-02
 R² = 0.750558
 ADJUSTED R² = 0.739472
 DURBIN-WATSON STATISTIC = 1.8378
 LOG OF LIKELIHOOD FUNCTION = 213.188
 NUMBER OF OBSERVATIONS = 48

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.28089E-03	0.36138E-02	0.77729E-01
AQTSWE	0.25321	0.15382	1.6462
AFCSWE	1.4474	0.14829	9.7605

2SLS ESTIMATION

EQUATION 11: TEXAS INDUSTRIAL AVERAGE PRICE

$$IAPSWET = k_0 + k_1 * AQTSWE + k_2 * AFCSWE$$

SUM OF SQUARED RESIDUALS = 0.234576E-03
 STANDARD ERROR OF THE REGRESSION = 0.228316E-02
 MEAN OF DEPENDENT VARIABLE = 0.346209E-01
 STANDARD DEVIATION = 0.816443E-02
 R² = 0.925128
 ADJUSTED R² = 0.921800
 DURBIN-WATSON STATISTIC = 1.6703
 F-STATISTIC = 278.003
 NUMBER OF OBSERVATIONS = 48

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.26910E-02	0.14147E-02	1.9022
AQTSWE	0.49808	0.77120E-01	6.4585
AFCSWE	0.74927	0.62087E-01	12.068

2SLS ESTIMATION USING MAXIMUM LIKELIHOOD ITERATIVE TECHNIQUE

EQUATION 12: NON-TEXAS INDUSTRIAL AVERAGE PRICE

$$\text{IAPSWEN} = 10 + 11 \cdot \text{AQTSWE} + 12 \cdot \text{AFCSWE}$$

FINAL VALUE OF RHO = 0.377398
 STANDARD ERROR OF RHO = 0.135733
 T-STATISTIC FOR RHO = 2.78044
 SUM OF SQUARED RESIDUALS = 0.354922E-03
 STANDARD ERROR OF THE REGRESSION = 0.280841E-02
 MEAN OF DEPENDENT VARIABLE = 0.239325E-01
 STANDARD DEVIATION = 0.670399E-02
 R² = 0.832177
 ADJUSTED R² = 0.824719
 DURBIN-WATSON STATISTIC = 1.6687
 LOG OF LIKELIHOOD FUNCTION = 215.370
 NUMBER OF OBSERVATIONS = 48

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.24382E-02	0.26603E-02	-0.91654
AQTSWE	0.26006	0.12997	2.0010
AFCSWE	1.2548	0.11323	11.082

A-7 SOUTHWESTERN ELECTRIC POWER COMPANY

2SLS ESTIMATION USING MAXIMUM LIKELIHOOD ITERATIVE TECHNIQUE

EQUATION 13: TOTAL FUEL EXPENSE & PURCHASED POWER COST

$$QTSWE = m_0 + m_1 * TVCSWE$$

FINAL VALUE OF RHO	=	0.716916
STANDARD ERROR OF RHO	=	0.102739
T-STATISTIC FOR RHO	=	6.97806
SUM OF SQUARED RESIDUALS	=	0.336192E+10
STANDARD ERROR OF THE REGRESSION	=	8548.99
MEAN OF DEPENDENT VARIABLE	=	21376.4
STANDARD DEVIATION	=	14520.8
R ²	=	0.661759
ADJUSTED R ²	=	0.654406
DURBIN-WATSON STATISTIC	=	2.1573
LOG OF LIKELIHOOD FUNCTION	=	-502.020
NUMBER OF OBSERVATIONS	=	48

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	31101.	6136.4	5.0683
TVCSWE	0.70323	0.77958E-01	9.0207

A-8 LOWER COLORADO RIVER AUTHORITY

MODEL: LCRA

SYMBOL DECLARATIONS

ENDOGENOUS:

AFCLCRA - AVERAGE FIXED COSTS:000'S OF \$ PER MWH
AQTLCRA - AVERAGE FUEL AND PURCHASED POWER COSTS:
000'S OF \$ PER MWH
CAPINST - INSTRUMENT FOR COMMERCIAL AVERAGE PRICE
COCLCRA0 - TOTAL COAL COST:DOLLARS
COCLCRA1 - CONDITIONAL VARIABLE IN THE IF ARGUMENT
COCLCRA2 - CONDITIONAL VARIABLE IN THE IF ARGUMENT
CORCOND - CONDITIONAL VARIABLE IN THE IF ARGUMENT
CSLCRA - COMMERCIAL SALES:MWH
GENRLCRA - GENERATION REQUIREMENTS:MWH
GRNG - GENERATION REQUIREMENTS FROM NATURAL GAS PLANT:MWH
GRHY - GENERATION REQUIREMENTS FROM HYDROELECTRIC:MWH
GRPLNTA - GENERATION REQUIREMENT FROM PLANT A:MWH
GRPLNTB - GENERATION REQUIREMENT FROM PLANT B:MWH
GRPPNU - GENERATION REQUIREMENTS FROM PURCHASED POWER FROM
NON-UTILITY SOURCES:MWH
IAPLCRA - INDUSTRIAL AVERAGE PRICE:000'S OF \$ PER MWH
IAPINST - INSTRUMENT FOR INDUSTRIAL AVERAGE PRICE
ISLCRA - INDUSTRIAL SALES:MWH
PLNTAC - CONDITIONAL VARIABLE
PLNTBC - CONDITIONAL VARIABLE
PPNUC - CONDITIONAL VARIABLE
QTLCRA - TOTAL FUEL EXPENSE AND PURCHASED POWER COST
ESTIMATE:000'S OF \$
RAPINST - INSTRUMENT FOR RESIDENTIAL AVERAGE PRICE
RSLCRA - RESIDENTIAL SALES:MWH
TVCLCRA - TOTAL FUEL AND PURCHASED POWER EXPENSE
REQUIREMENTS: 000'S OF \$
TSLCRA - TOTAL SYSTEM SALES:MWH
VCNG - NATURAL GAS COST:000'S OF \$

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

- VCPLNTA - VARIABLE COST FOR PLANT A: 000'S OF \$
- VCPLNTB - VARIABLE COST FOR PLANT B: 000'S OF \$
- VCPNU - PURCHASED POWER COST FROM NON-UTILITY SOURCES: 000'S OF \$

EXOGENOUS:

- APDUM - DUMMY IN AVERAGE PRICE EQUATION
- CCLCRA - COMMERCIAL CUSTOMERS:NUMBER OF CUSTOMERS
- CCDDINST - INSTRUMENT FOR COMMERCIAL COOLING DEGREE DAYS
- CDDLRCRA - COOLING DEGREE DAYS:NUMBER OF DAYS
- CSDUM - DUMMY IN COMMERCIAL SALES EQUATION
- GCPPNU - GENERATION CAPABILITY OF PURCHASED POWER FROM NON-UTILITY SOURCES:MWH
- GCPLNTA - GENERATION CAPABILITY OF PLANT A:MWH
- GCPLNTB - GENERATION CAPABILITY OF PLANT B:MWH
- ILFSLCRA - LOSS FACTOR: COMMERCIAL SALES
- ILFISLCRA - LOSS FACTOR: INDUSTRIAL SALES
- ILFOSLCRA - LOSS FACTOR: OTHER SALES
- ILFRSLCRA - LOSS FACTOR: RESIDENTIAL SALES
- ILFWSLCRA - LOSS FACTOR: WHOLESALE SALES
- ISDUM - DUMMY FOR INDUSTRIAL SALES
- MATFCLCRA - FOUR QUARTER MOVING AVERAGE TOTAL FIXED COSTS:000'S OF DOLLARS
- NAGLCRA - NON-AGRICULTURAL EMPLOYMENT IN LCRA SERVICE AREA:000'S OF PERSONS
- OSLCRA - OTHER SALES:MWH
- PNGCOM - PRICE OF NATURAL GAS TO COMMERCIAL CUSTOMERS: \$ PER MCF
- PNGIND - PRICE OF NATURAL GAS TO INDUSTRIAL CUSTOMERS: \$ PER MCF
- PNGRES - PRICE OF NATURAL GAS TO RESIDENTIAL CUSTOMERS:\$ PER MCF
- POPLCRA - POPULATION DATA:000'S OF PERSONS
- QALCRACO - AVERAGE PRICE OF COAL:DOLLARS PER MMBTU
- QALCRANG - AVERAGE PRICE OF NATURAL GAS:DOLLARS PER MMBTU
- QALCRANU - AVERAGE PRICE OF NUCLEAR FUEL:DOLLARS PER MMBTU
- QCLCRACO - COAL CAPACITY:MW
- QCLCRANU - NUCLEAR CAPACITY:MW
- RCLCRA - RESIDENTIAL CUSTOMERS:NUMBER OF CUSTOMERS

A-8 LOWER COLORADO RIVER AUTHORITY

RCDDINST	-	INSTRUMENT FOR RESIDENTIAL COOLING DEGREE DAYS
RHDDINST	-	INSTRUMENT FOR RESIDENTIAL HEATING DEGREE DAYS
RPILCRA	-	REAL PERSONAL INCOME (BILLIONS OF DOLLARS)
UFCNG	-	FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY IN NATURAL GAS PLANT: 000'S OF \$
UFCPLNTA	-	FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY IN PLANT A :000'S OF \$
UFCPLNTB	-	FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY IN PLANT B:000'S OF \$
UFCPPNU	-	UNIT COST OF PURCHASED POWER FROM NON-UTILITY SOURCES:000'S OF \$ PER MWH
WSLCRA	-	WHOLESALE SALES:MWH

IDENTITIES

RAPINST	=	(WAPLCRA(-4)/CPITX(-4))*RCLCR
CAPINST	=	(WAPLCRA(-4)/PNGCOM(-4))*CCLCR
IAPINST	=	WAPLCRA(-3)/PNGIND(-3)
OAPINST	=	WAPLCRA(-4)/GNPD(-4)
TSLCRA	=	RSLCRA+CSLCRA+ISLCRA+OSLCRA
AQTLCR	=	QTLCR/TSLCRA
AFCLCR	=	MATFCLCR/(TSLCRA+TSLCRA(-1)+ TSLCRA(-2)+TSLCRA(-3))
GENRLCR	=	RSLCRA*ILFRSLCR+CSLCRA*ILFCSLCR+ISLCRA*ILFISLCR+OSLCRA*ILFOSLCR;
PPNUC	=	GENRLCR-GCPPNU
HYC	=	PPNUC-GCHY
PLNTAC	=	HYC-GCPLNTA
PLNTBC	=	PLNTAC-GCPLNTB
GRPPNU	=	(PPNUC>0)*GCPPNU+(PPNUC<0)*GENRLCR
VCPPNU	=	GRPPNU*UFCPPNU
GRHY	=	(PPNUC>0)*((HYC>0)*GCPPNU+(HYC<0)*PPNUC)
GRPLNTA	=	(PPNUC>0)*(HYC>0)*((PLNTAC>0)*GCPLNTA+(PLNTAC<0)*HYC)
VCPLNTA	=	GRPLNTA*UFCPLNTA
GRPLNTB	=	(PPNUC>0)*(HYC>0)*(PLNTAC>0)*((PLNTBC>0)*GCPLNTB+(PLNTBC<0)*PLNTAC)
VCPLNTB	=	GRPLNTB*UFCPLNTB;
GRNG	=	(PPNUC>0)*(HYC>0)*(PLNTAC>0)*(PLNTBC>0)*PLNTBC
VCNG	=	GRNG*UFCNG;
TVCLCR	=	VCPPNU+VCPLNTA+VCPLNTB+VCNG;

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

EQUATION ESTIMATES

2SLS USING MAXIMUM LIKELIHOOD ITERATIVE TECHNIQUE

EQUATION 1: RESIDENTIAL SALES

$$\text{RSLCRA} = a_0 + a_1 \cdot \text{RAPINST} + a_2 \cdot \text{RPILCRA} + a_3 \cdot \text{RCDDINST} + a_4 \cdot \text{RHDDINST}$$

FINAL VALUE OF RHO = -0.927440
 STANDARD ERROR OF RHO = 0.562601E-01
 T-STATISTIC FOR RHO = -16.4849
 SUM OF SQUARED RESIDUALS = 0.259460E+11
 STANDARD ERROR OF THE REGRESSION = 29911.4
 MEAN OF DEPENDENT VARIABLE = 0.149826E+07
 STANDARD DEVIATION = 339323.
 R² = 0.993257
 ADJUSTED R² = 0.992326
 DURBIN-WATSON STATISTIC = 2.1093
 LOG OF LIKELIHOOD FUNCTION = -396.927
 NUMBER OF OBSERVATIONS = 34

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.30216E+06	43310.	-6.9766
RAPINST	-50.338	5.6749	-8.8702
RPILCRA	0.16895E+07	82403.	20.503
RCDDINST	0.11310E-02	0.10727E-03	10.543
RHDDINST	0.12056E-02	0.16134E-03	7.4723

A-8 LOWER COLORADO RIVER AUTHORITY

2SLS ESTIMATION

EQUATION 2: COMMERCIAL SALES

$$\text{CSLCRA} = b_0 + b_1 \cdot \text{CSLCRA}(-1) + b_2 \cdot \text{CAPINST} + b_3 \cdot \text{NAGLCRA} + \text{CCDDINST} + b_5 \cdot \text{CHDDINST}$$

SUM OF SQUARED RESIDUALS	=	0.137346E+11
STANDARD ERROR OF THE REGRESSION	=	22983.8
MEAN OF DEPENDENT VARIABLE	=	537030.
STANDARD DEVIATION	=	78341.4
R ²	=	0.928229
ADJUSTED R ²	=	0.914427
DURBIN-WATSON STATISTIC	=	1.9454
F-STATISTIC(5,26)	=	66.8331
NUMBER OF OBSERVATIONS	=	32

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.47119E+06	0.12662E+06	-3.7212
CSLCRA(-1)	0.18628	0.76519E-01	2.4344
CAPINST	-1145.1	402.82	-2.8427
NAGLCRA	7709.8	1627.7	4.7367
CCDDINST	0.31367E-02	0.50846E-03	6.1690
CHDDINST	0.11426E-02	0.76839E-03	1.4871

2SLS ESTIMATION

EQUATION 3: INDUSTRIAL SALES

$$\text{ISLCRA} = c_0 + c_1 \cdot \text{ISLCRA}(-1) + c_2 \cdot \text{IAPINST} + c_3 \cdot \text{NAGLCRA} + c_4 \cdot \text{CDDLRCR} + c_5 \cdot \text{ISDUM}$$

SUM OF SQUARED RESIDUALS	=	0.192578E+10
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ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

STANDARD ERROR OF THE REGRESSION	=	8012.04
MEAN OF DEPENDENT VARIABLE	=	161374.
STANDARD DEVIATION	=	49646.1
R ²	=	0.977686
ADJUSTED R ²	=	0.973967
DURBIN-WATSON STATISTIC	=	2.0870
F-STATISTIC(5,30)	=	262.771
NUMBER OF OBSERVATIONS	=	36

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-69799.	46577.	-1.4986
ISLCRA(-1)	0.21906	0.13430	1.6311
IAPINST	-0.18826E+07	0.17349E+07	-1.0851
NAGLCRA	1291.5	55.49	3.6330
CDDLRCR	7.4915	2.9368	2.5509
ISDUM	69789.	9365.6	7.4516

2SLS ESTIMATION USING COCHRANE-ORCUTT ITERATIVE TECHNIQUE

EQUATION 4: OTHER SALES

$$\text{OSLCRA} = d_0 + d_1 * \text{OSLCRA}(-4) + d_2 * \text{OAPINST} + d_3 * \text{POPLCRA} + d_4 * \text{CDDLRCR} + d_5 * \text{HDDLRCR}$$

FINAL VALUE OF RHO	=	0.325713
STANDARD ERROR OF RHO	=	0.164585
SUM OF SQUARED RESIDUALS	=	0.124042E+09
STANDARD ERROR OF THE REGRESSION	=	2143.39
MEAN OF DEPENDENT VARIABLE	=	27780.5
STANDARD DEVIATION	=	6789.57
R ²	=	0.915926
ADJUSTED R ²	=	0.900357

A-8 LOWER COLORADO RIVER AUTHORITY

DURBIN-WATSON STATISTIC = 1.9154
 LOG OF LIKELIHOOD FUNCTION = -296.629
 NUMBER OF OBSERVATIONS = 33

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-21908.	18981.	-1.1542
OSLCRA(-4)	0.45036	0.15523	2.9012
OAPINST	-0.29779E+06	0.15134E+06	-1.9677
POPLCRA	95.521	31.900	2.9944
CDDLRCR	6.5013	2.4249	2.6810
HDDLRCR	4.6768	2.6107	1.7914

2SLS ESTIMATION USING MAXIMUM LIKELIHOOD TECHNIQUE

EQUATION 5: WHOLESALE PRICE

$$WAPLCRA = e_0 + e_1 * AQTLRCR + e_2 * AFCLRCR$$

FINAL VALUE OF RHO = 0.239105
 STANDARD ERROR OF RHO = 0.175130
 T-STATISTIC FOR RHO = 1.36530
 SUM OF SQUARED RESIDUALS = 0.170752E-03
 STANDARD ERROR OF THE REGRESSION = 0.230998E-02
 MEAN OF DEPENDENT VARIABLE = 0.287588E-01
 STANDARD DEVIATION = 0.389313E-02
 R² = 0.673998
 ADJUSTED R² = 0.653623
 DURBIN-WATSON STATISTIC = 1.9861
 LOG OF LIKELIHOOD FUNCTION = 164.344
 NUMBER OF OBSERVATIONS = 35

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.12981E-01	0.38264E-02	3.3926
AQTLCR	0.60229	0.77235E-01	7.7982
AFCLCR	0.69901	0.18572	3.7638

2SLS ESTIMATION

EQUATION 6: TOTAL FUEL EXPENSE

$$QTLCR = f_0 + f_1 * TVCLCR$$

SUM OF SQUARED RESIDUALS	=	0.328804E+09
STANDARD ERROR OF THE REGRESSION	=	2981.04
MEAN OF DEPENDENT VARIABLE	=	36022.7
STANDARD DEVIATION	=	8965.95
R ²	=	0.893435
ADJUSTED R ²	=	0.890555
DURBIN-WATSON STATISTIC	=	1.9750
F-STATISTIC(1, 37)	=	306.748
NUMBER OF OBSERVATIONS	=	39

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	4693.6	1873.7	2.5050
TVCLCR	0.86728	0.50158E-01	17.291

A-9 WEST TEXAS UTILITIES COMPANY

MODEL: WTU

SYMBOL DECLARATIONS

ENDOGENOUS:

AFCWTU	-	AVERAGE FIXED COSTS:000'S OF \$ PER MWH
AQTWTU	-	AVERAGE FUEL AND PURCHASED POWER COSTS: 000'S OF \$ PER MWH
CAPWTU	-	COMMERCIAL AVERAGE PRICE:000'S OF \$ PER MWH
CAPINST	-	INSTRUMENT FOR CAPWTU
CSWTU	-	COMMERCIAL SALES:MWH
GENRWTU	-	GENERATION REQUIREMENTS:MWH
GRNG	-	GENERATION REQUIREMENTS FROM NATURAL GAS PLANT:MWH
GRPLNTA	-	GENERATION REQUIREMENT FROM PLANT A:MWH
GRPLNTB	-	GENERATION REQUIREMENT FROM PLANT B:MWH
GRPLNTC	-	GENERATION REQUIREMENT FROM PLANT C:MWH
GRPLNTD	-	GENERATION REQUIREMENT FROM PLANT D:MWH
GRPLNTE	-	GENERATION REQUIREMENT FROM PLANT E:MWH
GRPPNU	-	GENERATION REQUIREMENTS FROM PURCHASED POWER FROM NON-UTILITY SOURCES:MWH
IAPWTU	-	INDUSTRIAL AVERAGE PRICE:000'S OF \$ PER MWH
IAPINST	-	INSTRUMENT FOR IAPWTU
ISWTU	-	INDUSTRIAL SALES:MWH
PLNTAC	-	CONDITIONAL VARIABLE
PLNTBC	-	CONDITIONAL VARIABLE
PLNTCC	-	CONDITIONAL VARIABLE
PLNTDC	-	CONDITIONAL VARIABLE
PLNTEC	-	CONDITIONAL VARIABLE
PPNUC	-	CONDITIONAL VARIABLE
QTWTU	-	TOTAL FUEL EXPENSE AND PURCHASED POWER COST ESTIMATE:000'S OF \$
RAPWTU	-	RESIDENTIAL AVERAGE PRICE:000'S OF \$ PER MWH
RAPINST	-	INSTRUMENT FOR RAPWTU
RSWTU	-	RESIDENTIAL SALES:MWH

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

TVCWTU	-	TOTAL FUEL AND PURCHASED POWER EXPENSE REQUIREMENTS: 000'S OF \$
TSWTU	-	TOTAL SYSTEM SALES:MWH
VCNG	-	NATURAL GAS COST:000'S OF \$
VCPLNTA	-	VARIABLE COST FOR PLANT A: 000'S OF \$
VCPLNTB	-	VARIABLE COST FOR PLANT B: 000'S OF \$
VCPLNTC	-	VARIABLE COST FOR PLANT C: 000'S OF \$
VCPLNTD	-	VARIABLE COST FOR PLANT D: 000'S OF \$
VCPLNTE	-	VARIABLE COST FOR PLANT E: 000'S OF \$
VCPPNU	-	PURCHASED POWER COST FROM NON-UTILITY SOURCES: 000'S OF \$
WAPWTU	-	WHOLESALE AVERAGE PRICE: 000'S OF \$ PER MWH
WAPINST	-	INSTRUMENT FO WAPWTU
WSPINST	-	WHOLESALE SALES: MWH

EXOGENOUS:

APDUM	-	DUMMY IN AVERAGE PRICE EQUATION
C	-	CONSTANT TERM
CCWTU	-	COMMERCIAL CUSTOMERS:NUMBER OF CUSTOMERS
CCDDINST	-	INSTRUMENT FOR COMMERCIAL COOLING DEGREE DAYS
CDDWTU	-	COOLING DEGREE DAYS:NUMBER OF DAYS
GCPPNU	-	GENERATION CAPABILITY OF PURCHASED POWER FROM NON-UTILITY SOURCES:MWH
GCPLNTA	-	GENERATION CAPABILITY OF PLANT A:MWH
GCPLNTB	-	GENERATION CAPABILITY OF PLANT B:MWH
GCPLNTC	-	GENERATION CAPABILITY OF PLANT C:MWH
GCPLNTD	-	GENERATION CAPABILITY OF PLANT D:MWH
GCPLNTE	-	GENERATION CAPABILITY OF PLANT E:MWH
GNPD	-	GNP DEFLATOR
HDDWTU	-	HEATING DEGREE DAYS: NUMBER OF DAYS
ILFCSWTU	-	LOSS FACTOR: COMMERCIAL SALES
ILFISWTU	-	LOSS FACTOR: INDUSTRIAL SALES
ILFOSWTU	-	LOSS FACTOR: OTHER SALES
ILFRSWTU	-	LOSS FACTOR: RESIDENTIAL SALES
ILFWSWTU	-	LOSS FACTOR: WHOLESALE SALES
MATFCWTU	-	FOUR-QUARTER MOVING AVERAGE TOTAL FIXED COSTS:000'S OF DOLLARS AREA:000'S OF PERSONS
OSWTU	-	OTHER SALES:MWH

A-9 WEST TEXAS UTILITIES COMPANY

- PNGIND - PRICE OF NATURAL GAS TO INDUSTRIAL CUSTOMERS: \$ PER MCF
- POPWTU - POPULATION IN WTU SERVICE AREA:000'S OF PERSONS
- PPIF - PRODUCER PRICE INDEX: FINISHED GOODS
- RCDDINST - INSTRUMENT FOR RESIDENTIAL COOLING DEGREE DAYS
- RHDDINST - INSTRUMENT FOR RESIDENTIAL HEATING DEGREE DAYS
- RPIWTU - REAL PERSONAL INCOME (BILLIONS OF DOLLARS)
- UFCNG - FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY IN NATURAL GAS PLANT: 000'S OF \$
- UFCPLNTA - FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY: IN PLANT A :000'S OF \$
- UFCPLNTB - FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY: IN PLANT B:000'S OF \$
- UFCPLNTC - FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY: IN PLANT C:000'S OF \$
- UFCPLNTD - FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY: IN PLANT D: 000'S OF \$
- UFCPLNTE - FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY: IN PLANT E:000'S OF \$
- UFCPPNU - UNIT COST OF PURCHASED POWER FROM NON-UTILITY SOURCES:000'S OF \$ PER MWH

IDENTITIES:

- CAPINST = (CAPWTU(-1)/PPIF(-1))*CCWTU
- IAPINST = IAPWTU/PNGIND
- WAPINST = WAPWTU/GNPD
- TSWTU = RSWTU+CSWTU+ISWTU+WSWTU+OSWTU
- AQTWTU = QTWTU/TSWTU
- AFCWTU = MATFCWTU/((TSWTU+TSWTU(-1)+TSWTU(-2)+TSWTU(-3))/4)
- GENRWTU = RSWTU*ILFRSWTU+CSWTU*ILFCSWTU+ISWTU*ILFISWTU+WSWTU*ILFWSWTU+OSWTU*ILFWSWTU
- PPNUC = GENRWTU-GCPPNU
- PLNTAC = PPNUC-GCPLNTA
- PLNTBC = PLNTAC-GCPLNTB
- PLNTCC = PLNTBC-GCPLNTC
- PLNTDC = PLNTCC-GCPLNTD
- PLNTEC = PLNTDC-GCPLNTE
- GRPPNU = (PPNUC>0)*GCPPNU+(PPNUC<0)*GENRWTU
- VCPPNU = GRPPNU*UFCPPNU

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

$$\begin{aligned}
 \text{GRPLNTA} &= (\text{PPNUC}>0) * ((\text{PLNTAC}>0) * \text{GCPLNTA} + (\text{PLNTAC}<0) * \text{PPNUC}) \\
 \text{VCPLNTA} &= \text{GRPLNTA} * \text{UFCPLNTA} \\
 \text{GRPLNTB} &= (\text{PPNUC}>0) * (\text{PLNTAC}>0) * ((\text{PLNTBC}>0) * \text{GCPLNTB} + (\text{PLNTBC}<0) * \text{PLNTAC}); \\
 \text{VCPLNTB} &= \text{GRPLNTB} * \text{UFCPLNTB} \\
 \text{GRPLNTC} &= (\text{PPNUC}>0) * (\text{PLNTAC}>0) * (\text{PLNTBC}>0) * ((\text{PLNTCC}>0) * \text{GCPLNTC} + \\
 &\quad (\text{PLNTCC}<0) * \text{PLNTBC}) \\
 \text{VCPLNTC} &= \text{GRPLNTC} * \text{UFCPLNTC} \\
 \text{GRPLNTD} &= (\text{PPNUC}>0) * (\text{PLNTAC}>0) * (\text{PLNTBC}>0) * (\text{PLNTCC}>0) * ((\text{PLNTDC}>0) * \\
 &\quad \text{GCPLNTD} + (\text{PLNTDC}<0) * \text{PLNTCC}) \\
 \text{VCPLNTD} &= \text{GRPLNTD} * \text{UFCPLNTD} \\
 \text{GRPLNTE} &= (\text{PPNUC}>0) * (\text{PLNTAC}>0) * (\text{PLNTBC}>0) * (\text{PLNTCC}>0) * (\text{PLNTDC}>0) * \\
 &\quad ((\text{PLNTEC}>0) * \text{GCPLNTE} + (\text{PLNTEC}<0) * \text{PLNTDC}) \\
 \text{VCPLNTE} &= \text{GRPLNTE} * \text{UFCPLNTE} \\
 \text{GRNG} &= (\text{PPNUC}>0) * (\text{PLNTAC}>0) * (\text{PLNTBC}>0) * (\text{PLNTCC}>0) * (\text{PLNTDC}>0) * \\
 &\quad (\text{PLNTEC}>0) * \text{PLNTEC} \\
 \text{VCNG} &= \text{GRNG} * \text{UFCNG} \\
 \text{TVCWTU} &= \text{VCPNU} + \text{VCPLNTA} + \text{VCPLNTB} + \text{VCPLNTC} + \text{VCPLNTD} + \text{VCPLNTE} + \text{VCNG}
 \end{aligned}$$

EQUATION ESTIMATES

2SLS ESTIMATION USING COCHRANE-ORCUTT ITERATIVE TECHNIQUE

EQUATION 1: RETAIL SALES

$$\text{RSWTU} = a_0 + a_1 * \text{RSWTU}(-4) + a_2 * \text{RPIWTU} + a_3 * \text{RCDDINST} + a_4 * \text{RHDDINST}$$

FINAL VALUE OF RHO	=	0.150923
STANDARD ERROR OF RHO	=	0.144194
T-STATISTIC FOR RHO	=	1.04666
SUM OF SQUARED RESIDUALS	=	0.906782E+10
STANDARD ERROR OF THE REGRESSION	=	14693.5
MEAN OF DEPENDENT VARIABLE	=	257504.
STANDARD DEVIATION	=	77791.8
R ²	=	0.967509
ADJUSTED R ²	=	0.964414
DURBIN-WATSON STATISTIC	=	1.9610

A-9 WEST TEXAS UTILITIES COMPANY

LOG OF LIKELIHOOD FUNCTION = -515.020
 NUMBER OF OBSERVATIONS = 47

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-49304.	63090.	0.78150
RSWTU(-4)	0.68330	0.88169E-01	7.7499
RPIWTU	0.14810E+06	0.14888E+06	0.99482
RCDDINST	0.58150E-03	0.14625E-03	3.9762
RHDDINST	0.40439E-03	0.10550E-03	3.8333

2SLS ESTIMATION

EQUATION 2: COMMERCIAL SALES

$$CSWTU = b_0 + b_1*CSWTU(-4) + b_2*CAPINST + b_3*POPWTU + b_4*CCDDINST + b_5*CHDDINST$$

SUM OF SQUARED RESIDUALS = 0.288031E+10
 STANDARD ERROR OF THE REGRESSION = 8381.61
 MEAN OF DEPENDENT VARIABLE = 230382.
 STANDARD DEVIATION = 41886.7
 R² = 0.964312
 ADJUSTED R² = 0.959959
 DURBIN-WATSON STATISTIC = 2.0752
 F-STATISTIC(5,41) = 221.566
 NUMBER OF OBSERVATIONS = 47

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-97933.	70831.	-1.3826
CSWTU(-4)	0.73426	0.63694E-01	11.528
CAPINST	-11.298	15.343	-0.73636
POPWTU	356.53	210.06	1.6973
CCDDINST	0.10839E-02	0.30896E-03	3.5081
CHDDINST	0.53762E-03	0.22742E-03	2.3641

2SLS ESTIMATION

EQUATION 3: INDUSTRIAL SALES

$$ISWTU = c_0 + c_1*ISWTU(-1) + c_2*IAPINST + c_3POPWTU$$

SUM OF SQUARED RESIDUALS	=	0.575535E+10
STANDARD ERROR OF THE REGRESSION	=	11436.9
MEAN OF DEPENDENT VARIABLE	=	286554.
STANDARD DEVIATION	=	18594.3
R ²	=	0.645827
ADJUSTED R ²	=	0.621679
DURBIN-WATSON STATISTIC	=	1.8124
F-STATISTIC(3,44)	=	26.7444
NUMBER OF OBSERVATIONS	=	48

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-12777.	54041.	-0.23644
ISWTU(-1)	0.73236	0.94538E-01	7.7468
IAPINST	-0.29240E+06	0.13285E+07	-0.22010
POPWTU	215.00	108.72	1.9776

A-9 WEST TEXAS UTILITIES COMPANY

2SLS ESTIMATION USING COCHRANE-ORCUTT ITERATIVE TECHNIQUE

EQUATION 4: WHOLESALE SALES

$$\text{WSWTU} = d0 + d1*\text{WSWTU}(-4) + d2*\text{WAPINST} + d3*\text{POPWTU} + d4*\text{CDDWTU} + d5*\text{HDDWTU}$$

FINAL VALUE OF RHO	=	0.713490
STANDARD ERROR OF RHO	=	0.103308
T-STATISTIC FOR RHO	=	6.90646
SUM OF SQUARED RESIDUALS	=	0.447691E+10
STANDARD ERROR OF THE REGRESSION	=	10579.4
MEAN OF DEPENDENT VARIABLE	=	94382.1
STANDARD DEVIATION	=	35449.8
R ²	=	0.920850
ADJUSTED R ²	=	0.910956
DURBIN-WATSON STATISTIC	=	1.9273
LOG OF LIKELIHOOD FUNCTION	=	-488.323
NUMBER OF OBSERVATIONS	=	46

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.48846E+06	0.24152E+06	-2.0225
WSWTU(-4)	0.25706	0.19499	1.3184
WAPINST	-0.12355E+07	0.88889E+06	-1.3900
POPWTU	1651.1	673.66	2.4510
CDDWTU	55.744	14.656	3.8036
HDDWTU	31.594	8.1729	3.8658

2SLS ESTIMATION

EQUATION 5: RESIDENTIAL PRICE

$$\text{RAPWTU} = e0 + e1*\text{AQTWTU} + e2*\text{AFCWTU}$$

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

SUM OF SQUARED RESIDUALS = 0.449740E-03
 STANDARD ERROR OF THE REGRESSION = 0.316136E-02
 MEAN OF DEPENDENT VARIABLE = 0.640638E-01
 STANDARD DEVIATION = 0.146822E-01
 R² = 0.955657
 ADJUSTED R² = 0.953686
 DURBIN-WATSON STATISTIC = 2.1671
 F-STATISTIC(2,45) = 484.375
 NUMBER OF OBSERVATIONS = 48

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.60214E-02	0.24906E-02	-2.4177
AQTWTU	0.98016	0.70792E-01	13.846
AFCWTU	1.9031	0.68474E-01	27.794

2SLS ESTIMATION

EQUATION 6: COMMERCIAL PRICE

$$\text{CAPWTU} = f_0 + f_1 \cdot \text{AQTWTU} + f_2 \cdot \text{AFCWTU}$$

SUM OF SQUARED RESIDUALS = 0.175714E-03
 STANDARD ERROR OF THE REGRESSION = 0.197605E-02
 MEAN OF DEPENDENT VARIABLE = 0.549988E-01
 STANDARD DEVIATION = 0.102866E-01
 R² = 0.964758
 ADJUSTED R² = 0.963192
 DURBIN-WATSON STATISTIC = 1.7803
 F-STATISTIC(2,45) = 614.320
 NUMBER OF OBSERVATIONS = 48

A-9 WEST TEXAS UTILITIES COMPANY

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.16428E-02	0.15568E 02	1.0553
AQTWTU	1.0645	0.44249E-01	24.057
AFCWTU	1.0792	0.42800E-01	25.215

2SLS ESTIMATION

EQUATION 7: INDUSTRIAL PRICE

$$IAPWTU = g_0 + g_1 * AQTWTU + g_2 * AFCWTU$$

SUM OF SQUARED RESIDUALS	=	0.290055E-03
STANDARD ERROR OF THE REGRESSION	=	0.253883E-02
MEAN OF DEPENDENT VARIABLE	=	0.437897E-01
STANDARD DEVIATION	=	0.942104E-02
R ²	=	0.930723
ADJUSTED R ²	=	0.927644
DURBIN-WATSON STATISTIC	=	1.8615
F-STATISTIC(2,45)	=	301.092
NUMBER OF OBSERVATIONS	=	48

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.42893E-02	0.20001E-02	-2.1445
AQTWTU	1.1745	0.56852E-01	20.658
AFCWTU	0.72255	0.54990E-01	13.140

2SLS

EQUATION 8: WHOLESALE PRICE

$$WAPWTU = h_0 + h_1 * AQTWTU + h_2 * AFCWTU$$

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

SUM OF SQUARED RESIDUALS = 0.329192E-03
 STANDARD ERROR OF THE REGRESSION = 0.270469E-02
 MEAN OF DEPENDENT VARIABLE = 0.360093E-01
 STANDARD DEVIATION = 0.814454E-02
 R² = 0.894698
 ADJUSTED R² = 0.890018
 DURBIN-WATSON STATISTIC = 2.0247
 F-STATISTIC(2,45) = 190.591
 NUMBER OF OBSERVATIONS = 48

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.35116E-02	0.21308E-02	-1.6480
AQTWTU	1.0793	0.60566E-01	17.820
AFCWTU	0.46171	0.58583E-01	7.8813

2SLS ESTIMATION USING COCHRANE-ORCUTT ITERATIVE TECHNIQUE

EQUATION 9: TOTAL FUEL EXPENSE

$$QTWTU = i_0 + i_1 * TVCWTU$$

FINAL VALUE OF RHO = 0.469956
 STANDARD ERROR OF RHO = 0.128754
 T-STATISTIC FOR RHO = 3.65004
 SUM OF SQUARED RESIDUALS = 0.229891E+09
 STANDARD ERROR OF THE REGRESSION = 2285.78
 MEAN OF DEPENDENT VARIABLE = 18044.7
 STANDARD DEVIATION = 6816.50
 R² = 0.890121
 ADJUSTED R² = 0.887624
 DURBIN-WATSON STATISTIC = 1.7157
 LOG OF LIKELIHOOD FUNCTION = -420.034

A-9 WEST TEXAS UTILITIES COMPANY

NUMBER OF OBSERVATIONS = 46

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	1018.1	1910.0	0.53303
TVCWTU	1.0152	0.55367E-01	18.337

A-10 EL PASO ELECTRIC COMPANY

MODEL: EPE

SYMBOL DECLARATIONS

ENDOGENOUS:

ACEPE	-	AVERAGE TOTAL COST: 000'S OF \$ PER MWH
AFCEPE	-	AVERAGE FIXED COSTS:000'S OF \$ PER MWH
AQTEPE	-	AVERAGE FUEL COSTS:000'S OF \$ PER MWH
CAPEPEN	-	COMMERCIAL AVERAGE PRICE (NON-TEXAS):000'S OF \$ PER MWH
CAPEPET	-	COMMERCIAL AVERAGE PRICE (TEXAS):000'S OF \$ PER MWH
CAPINSN	-	INSTRUMENT FOR CAPEPEN
CAPINST	-	INSTRUMENT FOR CAPEPET
CSEPEN	-	COMMERCIAL SALES (NON-TEXAS):MWH
CSEPET	-	COMMERCIAL SALES (TEXAS):MWH PLANT:MWH
GENREPE	-	GENERATION REQUIREMENTS:MWH
GRNG	-	GENERATION REQUIREMENTS FROM NATURAL GAS
GRPLNTA	-	GENERATION REQUIREMENTS FROM PLANT A:MWH
GRPLNTB	-	GENERATION REQUIREMENTS FROM PLANT B:MWH
GRPLNTC	-	GENERATION REQUIREMENTS FROM PLANT C:MWH
GRPLNTD	-	GENERATION REQUIREMENTS FROM PLANT D:MWH
GRPLNTE	-	GENERATION REQUIREMENTS FROM PLANT E:MWH
GRPPNU	-	GENERATION REQUIREMENTS FROM PURCHASED POWER FROM NON-UTILITY SOURCES:MWH
IAPEPET	-	INDUSTRIAL AVERAGE PRICE (TEXAS):000'S OF \$ PER MWH
IAPINST	-	INSTRUMENT FOR IAPEPET
ISEPET	-	INDUSTRIAL SALES (TEXAS ONLY):MWH
MAQTEPE	-	FOUR-QUARTER MOVING AVERAGE OF QTEPE:000'S OF\$
MATSEPE	-	FOUR-QUARTER MOVING AVERAGE OF TSEPE;
PLNTAC	-	CONDITIONAL VARIABLE
PLNTBC	-	CONDITIONAL VARIABLE
PLNTCC	-	CONDITIONAL VARIABLE
PLNTDC	-	CONDITIONAL VARIABLE
PPNTEC	-	CONDITIONAL VARIABLE

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

PPNUC	-	CONDITIONAL VARIABLE
QTEPE	-	TOTAL FUEL EXPENSE ESTIMATE:000'S OF \$
RAPEPEN	-	RESIDENTIAL AVERAGE PRICE (NON-TEXAS):000'S OF \$ PER MWH
RAPEPET	-	RESIDENTIAL AVERAGE PRICE (TEXAS):000'S OF \$ PER MWH
RAPINSN	-	INSTRUMENT FOR RAPEPEN
RAPINST	-	INSTRUMENT FOR RAPEPET
RSEPEN	-	RESIDENTIAL SALES (NON-TEXAS):MWH
RSEPET	-	RESIDENTIAL SALES (TEXAS):MWH
TSEPE	-	TOTAL SYSTEM SALES:MWH
TSEPEN	-	TOTAL NON-TEXAS SALES:MWH
TSEPET	-	TOTAL TEXAS SALES:MWH
TVCEPE	-	ADJUSTED TOTAL VARIABLE COST:
TVCEPE1	-	TOTAL VARIABLE COST:000'S OF \$
TVCEPE2	-	TOTAL VARIABLE COST INCLUDING TOTAL COST OF PURCHASED POWER:000'S OF \$ 000'S OF \$
VCNG	-	NATURAL GAS COST:000'S OF \$
VCPLNTA	-	VARIABLE COST FOR PLANT A:000'S OF \$
VCPLNTB	-	VARIABLE COST FOR PLANT B:000'S OF \$
VCPLNTC	-	VARIABLE COST FOR PLANT C:000'S OF \$
VCPLNTD	-	VARIABLE COST FOR PLANT D:000'S OF \$
VCPLNTE	-	VARIABLE COST FOR PLANT E:000'S OF \$
VCPPNU	-	PURCHASED POWER COST FROM NON-UTILITY SOURCES: 000'S OF \$

EXOGENOUS:

C	-	CONSTANT TERM
CCDDINST	-	INSTRUMENT FOR (TEXAS) COMMERCIAL COOLING DEGREE DAYS
CCDDINSN	-	INSTRUMENT FOR (NON-TEXAS) COMMERCIAL COOLING DEGREE DAYS
CCEPEN	-	COMMERCIAL CUSTOMERS (NON-TEXAS):NUMBER OF CUSTOMERS
CCEPET	-	COMMERCIAL CUSTOMERS (TEXAS):NUMBER OF CUSTOMERS
CDDEPE	-	COOLING DEGREE DAYS:NUMBER OF DAYS
CHDDINST	-	INSTRUMENT FOR (TEXAS) COMMERCIAL HEATING DEGREE DAYS
CPITX	-	TEXAS CONSUMER PRICE INDEX
FCPPEPE	-	FIXED COMPONENT OF PURCHASED POWER COST:000'S OF \$
GCPLNTA	-	GENERATION CAPABILITY OF PLANT A: MWH
GCPLNTB	-	GENERATION CAPABILITY OF PLANT B: MWH

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GCPLNTC - GENERATION CAPABILITY OF PLANT C: MWH
GCPLNTD - GENERATION CAPABILITY OF PLANT D: MWH
GCPLNTE - GENERATION CAPABILITY OF PLANT E: MWH
GCPPNU - GENERATION CAPABILITY OF PURCHASED POWER FROM
NON-UTILITY SOURCES: MWH
ILFCSEPE - LOSS FACTOR: COMMERCIAL SALES
ILFISEPE - LOSS FACTOR: INDUSTRIAL SALES
ILFOSEPE - LOSS FACTOR: OTHER SALES
ILFRSEPE - LOSS FACTOR: RESIDENTIAL SALES
ILFWSEPE - LOSS FACTOR: WHOLESALE SALES
ISEPENC - INDUSTRIAL SALES (NON-TEXAS):MWH
ISEPETD1 - DUMMY 1 FOR INDUSTRIAL SALES
ISEPETD2 - DUMMY 2 FOR INDUSTRIAL SALES
MATFCEPE - FOUR QUARTER MOVING AVERAGE OF TOTAL FIXED COST: 000'S OF \$
NAGEPEN - SERVICE AREA NON-AGRICULTURAL EMPLOYMENT
NAGEPET - SERVICE AREA NON-AGRICULTURAL EMPLOYMENT
(TEXAS):THOUSANDS OF PERSONS
(NON-TEXAS): THOUSANDS OF PERSONS
OSEPENC - OTHER SALES (NON-TEXAS):MWH
OSEPETC - OTHER SALES (TEXAS):MWH
PNGCOM - PRICE OF NATURAL GAS TO COMMERCIAL CUSTOMERS:\$ PER MCF
PNGIND - PRICE OF NATURAL GAS TO INDUSTRIAL CUSTOMERS:\$ PER MWH
POPEPET - SERVICE AREA POPULATION (TEXAS):THOUSANDS OF PERSONS
RCDDINSN - INSTRUMENT FOR (NON-TEXAS) RESIDENTIAL COOLING DEGREE
DAYS
RCDDINST - INSTRUMENT FOR (TEXAS) RESIDENTIAL COOLING DEGREE DAYS
RCEPEN - RESIDENTIAL CUSTOMERS (NON-TEXAS):NUMBER OF CUSTOMERS
RCEPET - RESIDENTIAL CUSTOMERS (TEXAS):NUMBER OF CUSTOMERS
RHDDINSN - INSTRUMENT FOR (NON-TEXAS) RESIDENTIAL HEATING DEGREE DAYS
RHDDINST - INSTRUMENT FOR (TEXAS) RESIDENTIAL HEATING DEGREE DAYS
RPIEPEN - SERVICE AREA REAL PERSONAL INCOME (NON-TEXAS):BILLIONS OF \$
RPIEPET - SERVICE AREA REAL PERSONAL INCOME (TEXAS):BILLIONS OF \$
UFCNG - FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY IN NATURAL
GAS PLANTS: 000'S OF \$
UFCPLNTA - FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY IN PLANT A:
000'S OF \$ PER MWH
UFCPLNTB - FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY IN PLANT B:
000'S OF \$ PER MWH

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

- UFCPLNTC - FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY IN PLANT C:
000'S OF \$ PER MWH
- UFCPLNTD - FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY IN PLANT D:
000'S OF \$ PER MWH
- UFCPLNTE - FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY IN PLANT E:
000'S OF \$ PER MWH
- UFCPPNU - UNIT COST OF PURCHASED POWER FROM NON-UTILITY SOURCES:
000'S OF \$ PER MWH
- WSEPENC - WHOLESALE SALE (NON-TEXAS):MWH
- WSEPETC - WHOLESALE SALE (TEXAS):MWH

IDENTITIES

- RAPINST = (RAPEPET(-4)/CPITX(-4))*RCEPET
- CAPINST = (CAPEPET(-1)/PNGCOM(-1))*CCEPET
- IAPINST = IAPEPET/PNGIND
- RAPINSN = (RAPEPEN(-2)/CPITX(-2))*RCEPEN
- CAPINSN = (CAPEPEN/PNGCOM)*CCEPEN
- TSEPET = RSEPET+CSEPET+ISEPET+WSEPETC+OSEPETC
- TSEPEN = RSEPEN+CSEPEN+ISEPENC+WSEPENC+OSEPENC
- TSEPE = TSEPET+TSEPEN
- MATSEPE = (TSEPE+TSEPE(-1)+TSEPE(-2)+TSEPE(-3))/4
- AFCEPE = MATFCEPE/MATSEPE
- MAQTEPE = (QTEPE+QTEPE(-1)+QTEPE(-2)+QTEPE(-3))/4
- AQTEPE = MAQTEPE/MATSEPE
- ACEPE = AQTEPE+AFCEPE
- GENREPE = (RSEPET+RSEPEN)*ILFRSEPE+(CSEPET+CSEPEN)*ILFCSEPE+
(ISEPET+ISEPENC)*ILFISEPE+(WSEPETC+WSEPENC)*ILFWSEPE+
(OSEPETC+OSEPENC)*ILFOSEPE
- PPNUC = GENREPE-GCPPNU
- PLNTAC = PPNUC-GCPLNTA
- PLNTBC = PLNTAC-GCPLNTB
- PLNTCC = PLNTBC-GCPLNTC
- PLNTDC = PLNTCC-GCPLNTD
- PLNTEC = PLNTDC-GCPLNTE
- GRPPNU = (PPNUC>0)*GCPPNU+(PPNUC<0)*GENREPE
- VCPPNU = GRPPNU*UFCPPNU
- GRPLNTA = (PPNUC>0)*((PLNTAC>0)*GCPLNTA+(PLNTAC<0)*PPNUC)
- VCPLNTA = GRPLNTA*UFCPLNTA

A-10 EL PASO ELECTRIC COMPANY

GRPLNTB = (PPNUC>0)*(PLNTAC>0)*((PLNTBC>0)*GCPLNTB+(PLNTBC<0)*PLNTAC)

VCPLNTB = GRPLNTB*UFCPLNTB

GRPLNTC = (PPNUC>0)*(PLNTAC>0)*(PLNTBC>0)*((PLNTCC>0)*GCPLNTC+(PLNTCC<0)*PLNTBC)

VCPLNTC = GRPLNTC*UFCPLNTC

GRPLNTD = (PPNUC>0)*(PLNTAC>0)*(PLNTBC>0)*(PLNTCC>0)*((PLNTDC>0)*GCPLNTD+(PLNTDC<0)*PLNTCC)

VCPLNTD = GRPLNTD*UFCPLNTD

GRPLNTE = (PPNUC>0)*(PLNTAC>0)*(PLNTBC>0)*(PLNTCC>0)*(PLNTDC>0)*((PLNTEC>0)*GCPLNTE+(PLNTEC<0)* PLNTDC)

VCPLNTE = GRPLNTE*UFCPLNTE

GRNG = (PPNUC>0)*(PLNTAC>0)*(PLNTBC>0)*(PLNTCC>0)*(PLNTDC>0)*(PLNTEC>0)*PLNTEC

VCNG = GRNG*UFCNG

TVCEPE1 = VCPPNU+VCPLNTA+VCPLNTB+VCPLNTC+VCPLNTD+VCPLNTE+VCNG

TVCEPE2 = TVCEPE1+FCPPEPE

TVCEPE = 1.4*TVCEPE2

EQUATION ESTIMATES

2SLS ESTIMATION

EQUATION 1: TEXAS RESIDENTIAL SALES

RSEPET = a0 + a1*RSEPET(-1) + a2*RAPINST + a3*RPIEPET + a4*RCDDINST + a5*RHDDINST

SUM OF SQUARED RESIDUALS	=	0.789537E+10
STANDARD ERROR OF THE REGRESSION	=	13710.8
MEAN OF DEPENDENT VARIABLE	=	205954.
STANDARD DEVIATION	=	34463.5
R ²	=	0.869151
ADJUSTED R ²	=	0.853573
DURBIN-WATSON STATISTIC	=	1.4219
F-STATISTIC	=	50.9915
NUMBER OF OBSERVATIONS	=	48

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.15938E+06	50618.	-3.1486
RSEPET(-1)	-0.81186	0.41644	-1.9495
RAPINST	-9.7759	4.5536	-2.1468
RPIEPET	0.12739E+07	0.40212E+06	3.1679
RCDDINST	0.39347E-03	0.17290E-03	2.2757
RHDDINST	0.29144E-03	0.98565E-04	2.9568

2SLS ESTIMATION USING COCHRANE-ORCUTT ITERATIVE TECHNIQUE

EQUATION 2: NON-TEXAS RESIDENTIAL SALES

$$\text{RSEPEN} = b_0 + b_1 \cdot \text{RSEPEN}(-1) + b_2 \cdot \text{RAPINSN} + b_3 \cdot \text{RPIEPEN} + b_4 \cdot \text{RCDDINSN} + b_5 \cdot \text{RHDDINSN}$$

FINAL VALUE OF RHO	=	-0.967926
STANDARD ERROR OF RHO	=	0.370429E-01
T-STATISTIC FOR RHO	=	-26.1298
SUM OF SQUARED RESIDUALS	=	0.978315E+08
STANDARD ERROR OF THE REGRESSION	=	1563.90
MEAN OF DEPENDENT VARIABLE	=	118414.
STANDARD DEVIATION	=	14564.8
R ²	=	0.989752
ADJUSTED R ²	=	0.988471
DURBIN-WATSON STATISTIC	=	1.5650
LOG OF LIKELIHOOD FUNCTION	=	-400.384
NUMBER OF OBSERVATIONS	=	46

A-10 EL PASO ELECTRIC COMPANY

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-3185.8	1711.9	-1.8610
RSEPEN(-1)	0.57246	0.52186E-01	10.969
RAPINSN	-4.2432	1.6060	-2.6421
RPIEPEN	0.14229E+06	33177.	4.2887
RCDDINSN	0.32149E-03	0.39590E-04	8.1203
RHDDINSN	0.29006E-03	0.32433E-04	8.9434

2SLS ESTIMATION USING COCHRANE-ORCUTT ITERATIVE TECHNIQUE

EQUATION 3: TEXAS COMMERCIAL SALES

$$\text{CSEPET} = c_0 + c_1 * \text{CSEPET}(-1) + c_2 * \text{NAGEPET} + c_3 * \text{CCDDINST} + c_4 * \text{CHDDINST}$$

FINAL VALUE OF RHO	=	0.144228
STANDARD ERROR OF RHO	=	0.144340
T-STATISTIC FOR RHO	=	0.999228
SUM OF SQUARED RESIDUALS	=	0.204212E+10
STANDARD ERROR OF THE REGRESSION	=	6972.94
MEAN OF DEPENDENT VARIABLE	=	205420.
STANDARD DEVIATION	=	43688.7
R ²	=	0.976741
ADJUSTED R ²	=	0.974526
DURBIN-WATSON STATISTIC	=	2.0922
LOG OF LIKELIHOOD FUNCTION	=	-479.987
NUMBER OF OBSERVATIONS	=	47

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.13402E+06	15523.	-8.6331
CSEPET(-1)	0.30862	0.34263E-01	9.0074
NAGEPET	1427.9	117.13	12.192
CCDDINST	0.56136E-02	0.32410E-03	17.321
CHDDINST	0.10550E-02	0.28678E-03	3.678

2SLS ESTIMATION USING COCHRANE-ORCUTT ITERATIVE TECHNIQUE

EQUATION 4: NON-TEXAS COMMERCIAL SALES

$$\text{CSEPEN} = d_0 + d_1 * \text{CSEPEN}(-1) + d_2 * \text{CAPINSN} + d_3 * \text{NAGEPEN} + d_4 * \text{CCDDINSN}$$

FINAL VALUE OF RHO	=	-0.231293
STANDARD ERROR OF RHO	=	0.143444
T-STATISTIC FOR RHO	=	-1.61243
SUM OF SQUARED RESIDUALS	=	0.125595E+09
STANDARD ERROR OF THE REGRESSION	=	1750.23
MEAN OF DEPENDENT VARIABLE	=	62844.3
STANDARD DEVIATION	=	11948.5
R ²	=	0.980452
ADJUSTED R ²	=	0.978545
DURBIN-WATSON STATISTIC	=	1.9627
LOG OF LIKELIHOOD FUNCTION	=	-406.130
NUMBER OF OBSERVATIONS	=	46

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-31102.	3350.4	-9.2830
CSEPEN(-1)	0.18919	0.38180E-01	4.9552
CAPINSN	-89.091	18.836	-4.7298
NAGEPEN	1367.9	107.87	12.681
CHDDINSN	0.26450E-02	0.10477E-03	25.245

A-10 EL PASO ELECTRIC COMPANY

2SLS ESTIMATION

EQUATION 5: TEXAS INDUSTRIAL SALES

$$\text{ISEPET} = e_0 + e_1 \cdot \text{ISEPET}(-1) + e_2 \cdot \text{IAPINST}(-1) + e_3 \cdot \text{POPEPET} + e_4 \cdot \text{CDDEPE} + e_5 \cdot \text{ISEPETD1} + e_6 \cdot \text{ISEPETD2}$$

SUM OF SQUARED RESIDUALS	=	0.236375E+10
STANDARD ERROR OF THE REGRESSION	=	13814.5
MEAN OF DEPENDENT VARIABLE	=	165108.
STANDARD DEVIATION	=	13814.5
R ²	=	0.716949
ADJUSTED R ²	=	0.671049
DURBIN-WATSON STATISTIC	=	2.3884
F-STATISTIC (6,37)	=	15.2417
EHHE	=	.252576E+09
NUMBER OF OBSERVATIONS	=	44

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.10954E+06	48578	2.2549
ISEPET(-1)	0.29910	0.26639	1.1228
IAPINST(-1)	-0.66539E+06	0.65504E+06	-1.0158
POPEPET	26.301	41.549	0.63300
CDDEPE	5.8794	2.3481	2.5039
ISEPETD1	-15382	7122.2	-2.1597
ISEPETD2	19355	8194.4	2.3620

2SLS ESTIMATION USING MAXIMUM LIKELIHOOD ITERATIVE TECHNIQUE

EQUATION 6: TEXAS RESIDENTIAL AVERAGE PRICE

$$\text{RAPEPET} = f_0 + f_1 \cdot \text{ACEPE}$$

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

FINAL VALUE OF RHO = 0.491999
 STANDARD ERROR OF RHO = 0.172760
 T-STATISTIC FOR RHO = 2.84788
 SUM OF SQUARED RESIDUALS = 0.338443E-03
 STANDARD ERROR OF THE REGRESSION = 0.360791E-02
 MEAN OF DEPENDENT VARIABLE = 0.454716E-01
 STANDARD DEVIATION = 0.821388E-02
 R² = 0.815189
 ADJUSTED R² = 0.808081
 DURBIN-WATSON STATISTIC = 2.1907
 LOG OF LIKELIHOOD FUNCTION = 118.658
 NUMBER OF OBSERVATIONS = 28

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.16936E-01	0.56534E-02	2.9958
ACEPE	1.0453	0.82829E-01	12.620

2SLS ESTIMATION USING COCHRANE-ORCUTT ITERATIVE TECHNIQUE

EQUATION 7: NON-TEXAS RESIDENTIAL AVERAGE PRICE

$$\text{RAPEPEN} = g_0 + g_1 \cdot \text{ACEPE}$$

FINAL VALUE OF RHO = 0.423493
 STANDARD ERROR OF RHO = 0.171199
 T-STATISTIC FOR RHO = 2.47369
 SUM OF SQUARED RESIDUALS = 0.497037E-03
 STANDARD ERROR OF THE REGRESSION = 0.445887E-02
 MEAN OF DEPENDENT VARIABLE = 0.466210E-01
 STANDARD DEVIATION = 0.106234E-01
 R² = 0.830811
 ADJUSTED R² = 0.824043

A-10 EL PASO ELECTRIC COMPANY

DURBIN-WATSON STATISTIC = 1.5662
 LOG OF LIKELIHOOD FUNCTION = 108.875
 NUMBER OF OBSERVATIONS = 27

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.11482E-02	0.73266E-02	0.15672
ACEPE	1.1623	0.10459	11.113

2SLS ESTIMATION USING MAXIMUM LIKELIHOOD ITERATIVE TECHNIQUE

EQUATION 8: TEXAS COMMERCIAL AVERAGE PRICE

CAPEPET = h0 + h1*ACEPE

FINAL VALUE OF RHO = 0.382149
 STANDARD ERROR OF RHO = 0.179908
 T-STATISTIC FOR RHO = 2.12414
 SUM OF SQUARED RESIDUALS = 0.804850E-03
 STANDARD ERROR OF THE REGRESSION = 0.556379E-02
 MEAN OF DEPENDENT VARIABLE = 0.484049E-01
 STANDARD DEVIATION = 0.100996E-01
 R² = 0.708296
 ADJUSTED R² = 0.697076
 DURBIN-WATSON STATISTIC = 1.7370
 LOG OF LIKELIHOOD FUNCTION = 106.590
 NUMBER OF OBSERVATIONS = 28

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.15112E-01	0.73046E-02	0.73046E-02
ACEPE	0.92642	0.10715	0.10715

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

2SLS ESTIMATION USING COCHRANE-ORCUTT ITERATIVE TECHNIQUE

EQUATION 9: NON-TEXAS COMMERCIAL AVERAGE PRICE

CAPEPEN = i0 + i1*ACEPE

FINAL VALUE OF RHO	=	0.509704
STANDARD ERROR OF RHO	=	0.165574
T-STATISTIC FOR RHO	=	3.07840
SUM OF SQUARED RESIDUALS	=	0.431953E-03
STANDARD ERROR OF THE REGRESSION	=	0.415670E-02
MEAN OF DEPENDENT VARIABLE	=	0.359220E-01
STANDARD DEVIATION	=	0.633123E-02
R ²	=	0.586029
ADJUSTED R ²	=	0.569470
DURBIN-WATSON STATISTIC	=	1.4904
LOG OF LIKELIHOOD FUNCTION	=	110.770
NUMBER OF OBSERVATIONS	=	27

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.27759E-01	0.81390E-02	3.4106
ACEPE	0.65854	0.11539	5.7071

2SLS ESTIMATION USING MAXIMUM LIKELIHOOD ITERATIVE TECHNIQUE

EQUATION 10: TEXAS INDUSTRIAL AVERAGE PRICE

IAPEPET = j0 + j1*ACEPE

FINAL VALUE OF RHO	=	0.698740
STANDARD ERROR OF RHO	=	0.124035
T-STATISTIC FOR RHO	=	5.63339
SUM OF SQUARED RESIDUALS	=	0.185467E-03

A-10 EL PASO ELECTRIC COMPANY

STANDARD ERROR OF THE REGRESSION = 0.248641E-02
 MEAN OF DEPENDENT VARIABLE = 0.182768E-01
 STANDARD DEVIATION = 0.397576E-02
 R² = 0.622261
 ADJUSTED R² = 0.609670
 DURBIN-WATSON STATISTIC = 1.8785
 LOG OF LIKELIHOOD FUNCTION = 147.193
 NUMBER OF OBSERVATIONS = 32

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.18693E-01	0.62056E-02	3.0123
ACEPE	0.56494	0.88344E-01	6.3949

2SLS ESTIMATION USING COCHRANE-ORCUTT ITERATIVE TECHNIQUE

EQUATION 11: TOTAL FUEL EXPENSE & PURCHASED POWER COST

$$QTEPE = k_0 + k_1 * TVCEPE$$

FINAL VALUE OF RHO = 0.308124
 STANDARD ERROR OF RHO = 0.138768
 T-STATISTIC FOR RHO = 2.22043
 SUM OF SQUARED RESIDUALS = 0.261459E+09
 STANDARD ERROR OF THE REGRESSION = 2437.67
 MEAN OF DEPENDENT VARIABLE = 17991.1
 STANDARD DEVIATION = 4358.93
 R² = 0.694973
 ADJUSTED R² = 0.688041
 DURBIN-WATSON STATISTIC = 2.0284
 LOG OF LIKELIHOOD FUNCTION = -422.994
 NUMBER OF OBSERVATIONS = 46

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	7168.7	2757.1	2.6001
TVCEPE	0.66023	0.94916E-01	6.9559

A-11 TEXAS NEW-MEXICO POWER COMPANY

MODEL: TNP

SYMBOL DECLARATIONS

ENDOGENOUS:

- AFCTNP - AVERAGE FIXED COSTS:000'S PER MWH
- AQTTNP - AVERAGE FUEL EXPENSES AND PURCHASED POWER COSTS:
PER MWH
- CAPINSO - INSTRUMENT FOR CAPTNP (TNP NON-SOUTH)
- CAPINSS - INSTRUMENT FOR CAPTNP (TNP SOUTH)
- CAPTNP - COMMERCIAL AVERAGE PRICE:000'S OF \$ PER MWH
- CSTNPO - COMMERCIAL SALES (TNP NON-SOUTH):MWH
- CSTNPS - COMMERCIAL SALES (TNP SOUTH):MWH
- GENRTNP - GENERATION REQUIREMENTS:MWH
- GRLI - GENERATION REQUIREMENT FROM LIGNITE PLANTS:MWH
- GRPPNU - GENERATION REQUIREMENTS FROM PURCHASED POWER FROM
NON-UTILITY SOURCES:MWH
- GRPPU - GENERATION REQUIREMENTS FROM PURCHASED POWER FROM
UTILITY SOURCES:MWH
- IAPTNP - INDUSTRIAL AVERAGE PRICE:000'S OF \$ PER MWH
- LIC - CONDITIONAL VARIABLE
- MATSTNP - FOUR-QUARTER MOVING AVERAGE OF TOTAL SALES
- PPNUC - CONDITIONAL VARIABLE
- QTTNP - TOTAL FUEL EXPENSE AND PURCHASED POWER COST ESTIMATE:
000'S OF \$
- RAPINSO - INSTRUMENT FOR RAPTNP (TNP NON-SOUTH)
- RAPINSS - INSTRUMENT FOR RAPTNP (TNP SOUTH)
- RAPTNP - RESIDENTIAL AVERAGE PRICE:000'S OF \$ PER MWH
- RSTNPO - RESIDENTIAL SALES (TNP NON-SOUTH):MWH
- RSTNPS - RESIDENTIAL SALES (TNP SOUTH):MWH
- TSTNP - TOTAL SYSTEM SALES:MWH
- TVCTNP - TOTAL FUEL AND PURCHASED POWER EXPENSE REQUIREMENTS:
000'S OF \$
- VCLI - LIGNITE COST:000'S OF \$

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

- VCPNU - PURCHASED POWER COST FROM NON-UTILITY SOURCES:
000'S OF \$
- VCPPU - PURCHASED POWER COST FROM UTILITY SOURCES:000'S OF \$

EXOGENOUS:

- C - CONSTANT TERM
- CCDDINSO - INSTRUMENT FOR (TNP NON-SOUTH) COMMERCIAL COOLING
DEGREE DAYS
- CCDDINSS - INSTRUMENT FOR (TNP SOUTH) COMMERCIAL COOLING DEGREE
DAYS
- CCTNPO - COMMERCIAL CUSTOMERS (TNP NON-SOUTH):NUMBER OF
CUSTOMERS
- CCTNPS - COMMERCIAL CUSTOMERS (TNP SOUTH):NUMBER OF CUSTOMERS
- CPITX - TEXAS CONSUMER PRICE INDEX
- GCLI - GENERATION CAPABILITY OF LIGNITE PLANTS:MWH
- GCPPNU - GENERATION CAPABILITY OF PURCHASED POWER FROM
NON-UTILITY SOURCES:MWH
- ILFCSTNP - LOSS FACTOR:COMMERCIAL SALES
- ILFISTNP - LOSS FACTOR:INDUSTRIAL SALES
- ILFOSTNP - LOSS FACTOR:OTHER SALES
- ILFRSTNP - LOSS FACTOR:RESIDENTIAL SALES
- ILFWSTNP - LOSS FACTOR:WHOLESALE SALES
- ISTNP - INDUSTRIAL SALES:MWH
- MATFCTNP - FOUR QUARTER MOVING AVERAGE OF TOTAL FIXED COSTS:
000'S OF \$
- OSTNP - OTHER SALES:MWH
- PNGCOM - PRICE OF NATURAL GAS TO COMMERCIAL CUSTOMERS:
\$ PER MCF
- PNGRES - PRICE OF NATURAL GAS TO RESIDENTIAL CUSTOMERS:
\$ PER MCF
- POPTNPO - TNP NON-SOUTH POPULATION DATA:000'S OF PERSONS
- POPTNPS - TNP SOUTH POPULATION DATA:000'S OF PERSONS
- PPIIF - PRODUCER PRICE INDEX:FINISHED GOODS
- RCDDINSO - INSTRUMENT FOR (TNP NON-SOUTH) RESIDENTIAL COOLING
DEGREE DAYS
- RCDDINSS - INSTRUMENT FOR (TNP SOUTH) RESIDENTIAL COOLING
DEGREE DAYS
- RCTNPO - RESIDENTIAL CUSTOMERS (TNP NON-SOUTH):NUMBER OF
CUSTOMERS

A-11 TEXAS-NEW MEXICO POWER COMPANY

RCTNPS	-	RESIDENTIAL CUSTOMERS (TNP SOUTH):NUMBER OF CUSTOMERS
RHDDINSO	-	INSTRUMENT FOR (TNP NON-SOUTH) RESIDENTIAL HEATING DEGREE DAYS
RHDDINSS	-	INSTRUMENT FOR (TNP SOUTH) RESIDENTIAL HEATING DEGREE DAYS
RPITNPO	-	REAL TNP NON-SOUTH PERSONAL INCOME(BILLIONS OF \$)
RPITNPS	-	REAL TNP SOUTH PERSONAL INCOME(BILLIONS OF \$)
UFCLI	-	FUEL COST TO PRODUCE ONE KWH OF ELECTRICITY IN LIGNITE PLANT:000'S OF \$
UFCPPU	-	UNIT COST OF PURCHASED POWER FROM PUBLIC UTILITY SOURCES:000'S OF \$ PER MWH
UFCPPNU	-	UNIT COST OF PURCHASED POWER FROM NON-UTILITY SOURCES: 000'S OF \$ PER MWH
WSTNP	-	WHOLESALE SALES:MWH

IDENTITIES

RAPINSO	=	(RAPTNP(-1)/PNGRES(-1))*RCTNPO
RAPINSS	=	(RAPTNP(-2)/CPITX(-2))*RCTNPS
CAPINSO	=	(CAPTNP(-3)/PNGCOM(-3))*CCTNPO
CAPINSS	=	(CAPTNP/PPIF)*CCTNPS
TSTNP	=	RSTNPO+RSTNPS+CSTNPO+CSTNPS+ISTNP+WSTNP+OSTNP
MATSTNP	=	(TSTNP+TSTNP(-1)+TSTNP(-2)+TSTNP(-3))/4
AFCTNP	=	MATFCTNP/MATSTNP
AQTTNP	=	QTTNP/TSTNP
GENRTNP	=	(RSTNPO+RSTNPS)*ILFRSTNP+(CSTNPO+CSTNPS)*ILFCSTNP+ISTNP*ILFISTNP+WSTNP*ILFWSTNP+OSTNP*ILFOSTNP
PPNUC	=	GENRTNP-GCPPNU
LIC	=	PPNUC-GCLI
GRPPNU	=	(PPNUC>0)*GCPPNU+(PPNUC<0)*GENRTNP
VCPPNU	=	GRPPNU*UFCPPNU
GRLI	=	(PPNUC>0)*((LIC>0)*GCLI+(LIC<0)*PPNUC)
VCLI	=	GRLI*UFCLI
GRPPU	=	(PPNUC>0)*(LIC>0)*LIC
VCPPU	=	GRPPU*UFCPPU
TVCTNP	=	VCPPNU+VCLI+VCPPU

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

EQUATION ESTIMATES

2SLS ESTIMATION

EQUATION 1: TNP NON-SOUTH RESIDENTIAL SALES

$$\text{RSTNPO} = A_0 + A_1 \cdot \text{RSTNPO}(-4) + A_2 \cdot \text{RAPINSO} + A_3 \cdot \text{RPITNPO} + A_4 \cdot \text{RCDDINSO} + A_5 \cdot \text{RHDDINSO}$$

SUM OF SQUARED RESIDUALS	=	0.507548E+10
STANDARD ERROR OF THE REGRESSION	=	11557.0
MEAN OF DEPENDENT VARIABLE	=	153975.
STANDARD DEVIATION	=	45394.3
R ²	=	0.942723
ADJUSTED R ²	=	0.935186
DURBIN-WATSON STATISTIC	=	1.9269
F-STATISTIC	=	125.080
NUMBER OF OBSERVATIONS	=	44

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-6422.0	24651.	-0.26052
RSTNPO(-4)	0.7701	0.92046E-01	8.3671
RAPINSO	-52.608	43.587	-1.2070
RPITNPO	0.30224E+06	0.10601E+06	2.8511
RCDDINSO	0.19661E-03	0.58599E-04	3.3552
RHDDINSO	0.52702E-04	0.18285E-04	2.8822

2SLS ESTIMATION

EQUATION 2: TNP SOUTH RESIDENTIAL SALES

$$\text{RSTNPS} = b_0 + b_1 \cdot \text{RAPINSS} + b_2 \cdot \text{RPITNPS} + b_3 \cdot \text{RCDDINSS} + b_4 \cdot \text{RHDDINSS}$$

A-11 TEXAS-NEW MEXICO POWER COMPANY

SUM OF SQUARED RESIDUALS = 0.222459E+11
 STANDARD ERROR OF THE REGRESSION = 23883.2
 MEAN OF DEPENDENT VARIABLE = 217046.
 STANDARD DEVIATION = 60711.4
 R² = 0.859641
 ADJUSTED R² = 0.845246
 DURBIN-WATSON STATISTIC = 1.9864
 F-STATISTIC = 59.7147
 NUMBER OF OBSERVATIONS = 44

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.17159E+06	73805.	-2.3249
RAPINSS	-24.357	18.060	--1.3487
RPITNPS	0.20639E+07	0.50879E+06	4.0565
RCDDINSS	0.34811E-02	0.28915E-03	12.039
RHDDINSS	0.88731E-03	0.22610E-03	3.9244

2SLS ESTIMATION

EQUATION 3:TNP NON-SOUTH COMMERCIAL SAES

$$\text{CSTNPO} = c_0 + c_1 \cdot \text{CSTNPO}(-1) + c_2 \cdot \text{CAPINSO} + c_3 \cdot \text{POPTNPO} + c_4 \cdot \text{CCDDINSO}$$

SUM OF SQUARED RESIDUALS = 0.175602E+10
 STANDARD ERROR OF THE REGRESSION = 6625.74
 MEAN OF DEPENDENT VARIABLE = 133837.
 STANDARD DEVIATION = 28421.3
 R² = 0.950595
 ADJUSTED R² = 0.945654
 DURBIN-WATSON STATISTIC = 1.9669
 F-STATISTIC = 192.400

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

NUMBER OF OBSERVATIONS = 45

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.15762E+06	16213.	-9.7218
CSTNPO(-1)	-0.97396E-01	0.46035E-01	-2.1157
CAPINSO	-96.224	72.667	-1.3242
POPTNPO	1424.1	129.42	11.004
CCDDINSO	0.11917E-02	0.59408E-04	20.059

2SLS ESTIMATION

EQUATION 4: TNP SOUTH COMMERCIAL SALES

$$\text{CSTNPS} = d_0 + d_1 \cdot \text{CAPINSS} + d_2 \cdot \text{POPTNPS} + d_3 \cdot \text{CCDDINSS}$$

SUM OF SQUARED RESIDUALS = 0.251708E+10
 STANDARD ERROR OF THE REGRESSION = 7835.32
 MEAN OF DEPENDENT VARIABLE = 122282.
 STANDARD DEVIATION = 19467.1
 R² = 0.850516
 ADJUSTED R² = 0.839578
 DURBIN-WATSON STATISTIC = 1.6850
 F-STATISTIC = 76.8691
 NUMBER OF OBSERVATIONS = 45

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.35636E+06	58151.	--6.1281
CAPINSS	-151.53	37.804	-4.0082
POPTNPS	3690.5	510.43	7.2301
CCDDINSS	0.60994E-02	0.54609E-03	11.169

A-11 TEXAS-NEW MEXICO POWER COMPANY

2SLS ESTIMATION

EQUATION 5: RESIDENTIAL AVERAGE PRICE

$$\text{RAPTNP} = e_0 + e_1 \cdot \text{AQTTNP} + e_2 \cdot \text{AFCTNP}$$

SUM OF SQUARED RESIDUALS	=	0.293734E-03
STANDARD ERROR OF THE REGRESSION	=	0.264455E-02
MEAN OF DEPENDENT VARIABLE	=	0.675579E-01
STANDARD DEVIATION	=	0.143256E-01
R ²	=	0.967656
ADJUSTED R ²	=	0.966115
DURBIN-WATSON STATISTIC	=	1.6779
F-STATISTIC	=	624.574
NUMBER OF OBSERVATIONS	=	45

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.41484E-02	0.20929E-02	-1.9822
AQTTNP	1.3178	0.54412E-01	24.218
AFCTNP	0.60728	0.63730E-01	9.5289

2SLS ESTIMATION

EQUATION 6: COMMERCIAL AVERAGE PRICE

$$\text{CAPTNP} = f_0 + f_1 \cdot \text{AGTTNP} + f_2 \cdot \text{AFCTNP}$$

SUM OF SQUARED RESIDUALS	=	0.100607E-03
STANDARD ERROR OF THE REGRESSION	=	0.154771E-02
MEAN OF DEPENDENT VARIABLE	=	0.628794E-01
STANDARD DEVIATION	=	0.117585E-01
R ²	=	0.983663

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

ADJUSTED R² = 0.982885
 DURBIN-WATSON STATISTIC = 1.6756
 F-STATISTIC = 1248.83
 NUMBER OF OBSERVATIONS = 45

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.41965E-02	0.12249E-02	3.4261
AQTTNP	1.2114	0.31844E-01	38.041
AFCTNP	0.28726	0.37298E-01	7.7017

2SLS ESTIMATION USING MAXIMUM LIKELIHOOD ITERATIVE TECHNIQUE

EQUATION 7: INDUSTRIAL AVERAGE PRICE

$$IAPTNP = g_0 + g_1 \cdot AQTTNP + g_2 \cdot AFCTNP$$

FINAL VALUE OF RHO = 0.248664
 STANDARD ERROR OF RHO = 0.149261
 T-STATISTIC FOR RHO = 1.66597
 SUM OF SQUARED RESIDUALS = 0.564481E-04
 STANDARD ERROR OF THE REGRESSION = 0.117336E-02
 MEAN OF DEPENDENT VARIABLE = 0.335172E-01
 STANDARD DEVIATION = 0.628588E-02
 R² = 0.966956
 ADJUSTED R² = 0.965344
 DURBIN-WATSON STATISTIC = 1.9374
 LOG OF LIKELIHOOD FUNCTION = 235.995
 NUMBER OF OBSERVATIONS = 44

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.16684E-02	0.12577E-02	1.3265
AQTTNP	0.87786	0.30784E-01	28.516
AFCTNP	0.19437	0.36794E-01	5.2827

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2SLS ESTIMATION USING MAXIMUM LIKELIHOOD ITERATIVE TECHNIQUE

EQUATION 8: TOTAL FUEL EXPENSE & PURCHASED POWER COST

$$QTTNP = H_0 + H_1 * TVCTNP$$

FINAL VALUE OF RHO	=	0.416337
STANDARD ERROR OF RHO	=	0.140025
T-STATISTIC FOR RHO	=	2.97331
SUM OF SQUARED RESIDUALS	=	0.907824E+09
STANDARD ERROR OF THE REGRESSION	=	4649.18
MEAN OF DEPENDENT VARIABLE	=	30295.1
STANDARD DEVIATION	=	10636.1
R ²	=	0.813454
ADJUSTED R ²	=	0.809013
DURBIN-WATSON STATISTIC	=	2.2654
LOG OF LIKELIHOOD FUNCTION	=	-433.061
NUMBER OF OBSERVATIONS	=	44

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	3806.5	3523.7	1.0803
TVCTNP	1.3953	0.98638E-01	14.146

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MODEL: COA

SYMBOL DECLARATIONS

ENDOGENOUS:

AFCCOA - AVERAGE FIXED COSTS:000'S OF & PER MWH
AQTCOA - AVERAGE FUEL EXPENSES AND PURCHASED POWER COSTS:
000'S OF \$ PER MWH
CAPCOA - COMMERCIAL AVERAGE PRICE:000'S OF \$ PER MWH
CAPINST - INSTRUMENT FOR CAPCOA
CSCOA - COMMERCIAL SALES:MWH
GENRCOA - GENERATION REQUIREMENTS:MWH
GRNG - GENERATION REQUIREMENTS FROM NATURAL GAS PLANT:MWH
GRPLNTA - GENERATION REQUIREMENT FROM PLANT A:MWH
GRPLNTB - GENERATION REQUIREMENT FROM PLANT B:MWH
GRPLNTC - GENERATION REQUIREMENT FROM PLANT C:MWH
GRPLNTD - GENERATION REQUIREMENT FROM PLANT D:MWH
GRPLNTE - GENERATION REQUIREMENT FROM PLANT E:MWH
GRPPNU - GENERATION REQUIREMENTS FROM PURCHASED POWER
FROM NON-UTILITY SOURCES:MWH
GRSO - GENERATION REQUIREMENTS FROM OTHER SOURCES:MWH
IAPCOA - INDUSTRIAL AVERAGE PRICE:000'S OF \$ PER MWH
MATSCOA - FOUR QUARTER MOVING AVERAGE OF TOTAL SALES:MWH
PLNTAC - CONDITIONAL VARIABLE
PLNTBC - CONDITIONAL VARIABLE
PLNTCC - CONDITIONAL VARIABLE
PLNTDC - CONDITIONAL VARIABLE
PLNTEC - CONDITIONAL VARIABLE
PPNUC - CONDITIONAL VARIABLE
QTCOA - TOTAL FUEL EXPENSE AND PURCHASED POWER COST
ESTIMATE:000'S OF \$
RAPCOA - RESIDENTIAL AVERAGE PRICE:000'S OF \$ PER MWH
RAPINST - INSTRUMENT FOR RAPCOA
RSCOA - RESIDENTIAL SALES:MWH

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

TVCCOA	-	TOTAL FUEL AND PURCHASED POWER EXPENSE REQUIREMENTS:000'S OF \$
TSCOA	-	TOTAL SYSTEM SALES:MWH
VCNG	-	NATURAL GAS COST:000'S OF \$
VCPLNTA	-	VARIABLE COST FOR PLANTA:000'S OF \$
VCPLNTB	-	VARIABLE COST FOR PLANTB:000'S OF \$
VCPLNTC	-	VARIABLE COST FOR PLANTC:000'S OF \$
VCPLNTD	-	VARIABLE COST FOR PLANTD:000'S OF \$
VCPLNTE	-	VARIABLE COST FOR PLANTE:000'S OF \$
VCPPNU	-	PURCHASED POWER COST FROM NON-UTILITY SOURCES:000'S

EXOGENOUS:

C	-	CONSTANT TERM
CCDDINST	-	INSTRUMENT FOR COMMERCIAL COOLING DEGREE DAYS
CCCOA	-	COMMERCIAL CUSTOMERS:NUMBER OFCUSTOMERS
CDDCOA	-	COOLING DEGREE DAYS:NUMBER OF DAYS
CPITX	-	TEXAS CONSUMER PRICE INDEX
GCOANTA	-	GENERATION CAPABILITY OF PLANT A:MWH
GCOANTB	-	GENERATION CAPABILITY OF PLANT B:MWH
GCOANTC	-	GENERATION CAPABILITY OF PLANT C:MWH
GCOANTD	-	GENERATION CAPABILITY OF PLANT D:MWH
GCOANTE	-	GENERATION CAPABILITY OF PLANT E:MWH
GCPPNU	-	GENERATION CAPABILITY OF PURCHASED POWER FROM NON-UTILITY SOURCES:MWH
HDDCOA	-	HEATING DEGREE DAYS:NUMBER OF DAYS
ILFCSCOA	-	LOSS FACTOR:COMMERCIAL SALES
ILFISCOA	-	LOSS FACTOR:INDUSTRIAL SALES
ILFOSCOA	-	LOSS FACTOR:OTHER SALES
ILFRSCOA	-	LOSS FACTOR:RESIDENTIAL SALES
ILFWSCOA	-	LOSS FACTOR:WHOLESALE SALES
ISDUM	-	DUMMY FOR INDUSTRIAL SALES
ILFWSCOA	-	LOSS FACTOR:WHOLESALE SALES
OADUM	-	OTHER AVERAGE PRICE DUMMY
PNGCOM	-	PRICE OF NATURAL GAS TO COMMERCIAL CUSTOMERS: \$ PER MCF

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- PNGIND - PRICE OF NATURAL GAS TO INDUSTRIAL CUSTOMERS:
\$ PER MCF
- POPCOA - POPULATION DATA:000'S OF PERSONS
- RCDDINST - INSTRUMENT FOR RESIDENTIAL COOLING DEGREE DAYS
- RCCOA - RESIDENTIAL CUSTOMERS:NUMBER OF CUSTOMERS
- RHDDINST - INSTRUMENT FOR RESIDENTIAL HEATING DEGREE DAYS
- UFCNG - FUEL COST TO PRODUCE ONE KWH OF ELECTRICITY IN
NATURAL GAS PLANT:000'S OF \$
- UFCOAANTA - FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY IN
PLANT A:000'S OF \$ PER MWH
- UFCOAANTB - FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY IN
PLANT B:000'S OF \$ PER MWH
- UFCOAANTC - FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY IN
PLANT C:000'S OF \$ PER MWH
- UFCOAANTD - FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY IN
PLANT D:000'S OF \$ PER MWH
- UFCOAANTE - FUEL COST TO PRODUCE ONE MWH OF ELECTRICITY IN
PLANT E:000'S OF \$ PER MWH
- UFCPPNU - UNIT COST OF PURCHASED POWER FROM NON-UTILITY SOURCES:
000'S OF \$ PER MWH
- WAPDUM1 - WHOLESALE AVERAGE PRICE DUMMY:QUARTER 1
- WAPDUM2 - WHOLESALE AVERAGE PRICE DUMMY:QUARTER 2

IDENTITIES

- RAPINST = (RAPCOA/PNGRES)*RCCOA
- CAPINST = (CAPCOA(-3)/PNGCOM(-3))*CCCOA
- TSCOA = RSCOA+CSCOA+ISCOA+OSCOA
- MATSCOA = (TSCOA+TSCOA(-1)+TSCOA(-2)+TSCOA(-3))/4
- AQTCOA = QTCOA/TSCOA
- AFCCOA = MATFCCOA/MATSCOA
- GENRCOA = TSCOA * ILFCOA
- PPNUC = GENRCOA-GCPPNU
- SOC = PPNUC-GCSO
- PLNTAC = SOC-GCPLNTA
- PLNTBC = PLNTAC-GCPLNTB
- PLNTCC = PLNTBC-GCPLNTC
- PLNTDC = PLNTCC-GCPLNTD
- PLNTEC = PLNTDC-GCPLNTE

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

$$\begin{aligned}
 \text{GRPPNU} &= (\text{PPNUC}>0) * \text{GCPPNU} + (\text{PPNUC}<0) * \text{GENRCOA} \\
 \text{VCPNU} &= \text{GRPPNU} * \text{UFCPPNU} \\
 \text{GRSO} &= (\text{PPNUC}) * ((\text{SOC}>0) * \text{GCSO} + (\text{SOC}<0) * \text{PPNUC}) \\
 \text{GRPLNTA} &= (\text{PPNUC}>0) * (\text{SOC}>0) * ((\text{PLNTAC}>0) * \text{GCPLNTA} + (\text{PLNTAC}<0) * \text{SOC}) \\
 \text{VCPLNTA} &= \text{GRPLNTA} * \text{UFCPLNTA} \\
 \text{GRPLNTB} &= (\text{PPNUC}>0) * (\text{SOC}>0) * (\text{PLNTAC}>0) * ((\text{PLNTBC}>0) * \text{GCPLNTB} + \\
 &\quad \text{PLNTBC}<0) * \text{PLNTAC}) \\
 \text{VCPLNTB} &= \text{GRPLNTB} * \text{UFCPLNTB} \\
 \text{GRPLNTC} &= (\text{PPNUC}>0) * (\text{SOC}>0) * (\text{PLNTAC}>0) * (\text{PLNTBC}>0) * ((\text{PLNTCC}>0) * \\
 &\quad \text{GCPLNTC} + (\text{PLNTCC}<0) * \text{PLNTBC}) \\
 \text{VCPLNTC} &= \text{GRPLNTC} * \text{UFCPLNTC} \\
 \text{GRPLNTD} &= (\text{PPNUC}>0) * (\text{SOC}>0) * (\text{PLNTAC}>0) * (\text{PLNTBC}>0) * (\text{PLNTCC}>0) * ((\text{PLNTDC}>0) * \\
 &\quad \text{GCPLNTD} + (\text{PLNTDC}<0) * \text{PLNTCC}) \\
 \text{VCPLNTD} &= \text{GRPLNTD} * \text{UFCPLNTD} \\
 \text{GRPLNTE} &= (\text{PPNUC}>0) * (\text{SOC}>0) * (\text{PLNTAC}>0) * (\text{PLNTBC}>0) * (\text{PLNTCC}>0) * (\text{PLNTDC}>0) * \\
 &\quad \text{VCPLNTE} = \text{GRPLNTE} * \text{UFCPLNTE} \\
 \text{GRNG} &= (\text{PPNUC}>0) * (\text{SOC}>0) * (\text{PLNTAC}>0) * (\text{PLNTBC}>0) * (\text{PLNTCC}>0) * (\text{PLNTDC}>0) * \\
 &\quad (\text{PLNTEC}>0) * \text{PLNTEC} \\
 \text{VCNG} &= \text{GRNG} * \text{UFCNG} \\
 \text{TVCCOA} &= \text{VCPNU} + \text{VCPLNTA} + \text{VCPLNTB} + \text{VCPLNTC} + \text{VCPLNTD} + \text{VCPLNTE} + \text{VCNG}
 \end{aligned}$$

2SLS ESTIMATION USING MAXIMUM LIKELIHOOD ITERATIVE TECHNIQUE

EQUATION 1: RESIDENTIAL SALES

$$\text{RSCOA} = a_0 + a_1 * \text{RSCOA} + a_2 * \text{RAPINST} + a_3 * \text{RPICOA} + a_4 * \text{RCDDINST} + a_5 * \text{RHDDINST}$$

FINAL VALUE OF RHO	=	-0.966027
STANDARD ERROR OF RHO	=	0.413835E-01
T-STATISTIC FOR RHO	=	-23.3433
SUM OF SQUARED RESIDUALS	=	0.230569E+11
STANDARD ERROR OF THE REGRESSION	=	26432.8
MEAN OF DEPENDENT VARIABLE	=	965642.
STANDARD DEVIATION	=	227007.
R ²	=	0.988226

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ADJUSTED R² = 0.986442
 DURBIN-WATSON STATISTIC = 1.5874
 LOG OF LIKELIHOOD FUNCTION = -449.193
 NUMBER OF OBSERVATIONS = 39

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-26062.	15553.	-1.6757
RSCOA(-1)	0.47585	0.40360E-01	11.790
RAPINST	-16.588	11.950	-1.3881
RPICOA	0.21435E+06	63500.	3.3756
RCDDINST	0.11483E-02	0.11440E-03	10.038
RHDDINST	0.36897E-03	0.18004E-03	2.0494

2SLS ESTIMATION USING MAXIMUM LIKELIHOOD ITERATIVE TECHNIQUE

EQUATION 2: COMMERCIAL SALES

$$CSCOA = b_0 + b_1 * CAPINST + b_2 * POPCOA + b_3 * CCDDINST + b_4 * CHDDINST$$

FINAL VALUE OF RHO = 0.402243
 STANDARD ERROR OF RHO = 0.151968
 T-STATISTIC FOR RHO = 2.64689
 SUM OF SQUARED RESIDUALS = 0.294639E+11
 STANDARD ERROR OF THE REGRESSION = 29014.2
 MEAN OF DEPENDENT VARIABLE = 357286.
 STANDARD DEVIATION = 101314.
 R² = 0.926400
 ADJUSTED R² = 0.917988
 DURBIN-WATSON STATISTIC = 1.7521
 LOG OF LIKELIHOOD FUNCTION = -465.197
 NUMBER OF OBSERVATIONS = 40

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
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ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

C	-0.52252E+06	69596.	-7.5078
CAPINST	-579.04	190.85	-3.0339
POPCOA	2647.6	206.29	12.835
CCDDINST	0.53567E-02	0.49782E-03	10.760
CHDDINST	0.29083E-02	0.77655E-03	3.7452

2SLS ESTIMATION USING COCHRANE-ORCUTT ITERATIVE TECHNIQUE

EQUATION 3: RESIDENTIAL PRICE

$$\text{RAPCOA} = c_0 + c_1 \cdot \text{RAPCOA} + c_2 \cdot \text{AQTCOA} + c_3 \cdot \text{AFCCOA}$$

FINAL VALUE OF RHO	=	0.517805
STANDARD ERROR OF RHO	=	0.138780
SUM OF SQUARED RESIDUALS	=	0.795855E-03
STANDARD ERROR OF THE REGRESSION	=	0.483813E-02
MEAN OF DEPENDENT VARIABLE	=	0.289880E-01
STANDARD DEVIATION	=	0.815681E-02
R ²	=	0.678096
ADJUSTED R ²	=	0.649693
DURBIN-WATSON STATISTIC	=	1.8091
LOG OF LIKELIHOOD FUNCTION	=	150.780
NUMBER OF OBSERVATIONS	=	38

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.15851E-01	0.16321E-01	-0.97122
RAPCOA(-4)	0.76896	0.10223	7.5221
AQTCOA	0.24829	A0.14116	1.7590
AFCCOA	0.55730	0.32271	1.7269

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2SLS ESTIMATION

EQUATION 4: COMMERCIAL PRICE

$$\text{CAPCOA} = d_0 + d_1 \cdot \text{CAPCOA}(-1) + d_2 \cdot \text{AQTCOA} + d_3 \cdot \text{AFCCOA}$$

SUM OF SQUARED RESIDUALS	=	0.721433E-03
STANDARD ERROR OF THE REGRESSION	=	0.447658E-02
MEAN OF DEPENDENT VARIABLE	=	0.650085E-01
STANDARD DEVIATION	=	0.742192E-02
R ²	=	0.676336
ADJUSTED R ²	=	0.649364
DURBIN-WATSON STATISTIC	=	1.7395
F-STATISTIC(3,36)	=	23.7340
NUMBER OF OBSERVATIONS	=	40

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.82560E-02	0.10785E-01	-0.76553
CAPCOA(-1)	0.85309	0.99881E-01	8.5410
AQTCOA	0.22215	0.96087E-01	2.3120
AFCCOA	0.27297	0.17689	1.5432

2SLS ESTIMATION

EQUATION 5: INDUSTRIAL PRICE

$$\text{IAPCOA} = e_0 + e_1 \cdot \text{IAPCOA}(-1) + d_2 \cdot \text{AQTCOA} + d_3 \cdot \text{AFCCOA}$$

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

STANDARD ERROR OF THE REGRESSION = 0.385249E-02
 MEAN OF DEPENDENT VARIABLE = 0.584879E-01
 STANDARD DEVIATION = 0.897899E-02
 R² = 0.833032
 ADJUSTED R² = 0.819118
 DURBIN-WATSON STATISTIC = 1.6925
 F-STATISTIC(3,36) = 58.6178
 NUMBER OF OBSERVATIONS = 40

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.39027E-02	0.90485E-02	-0.43131
IAPCOA(-1)	0.89583	0.70738E-01	12.664
AQTCOA	0.18663	0.83097E-01	2.2460
AFCCOA	0.10192	0.14940	0.68223

2SLS ESTIMATION USING MAXIMUM LIKELIHOOD TECHNIQUE

EQUATION 6: TOTAL FUEL EXPENSE

$$QTCOA = f_0 + f_1 * TVCCOA$$

FINAL VALUE OF RHO = 0.599663
 STANDARD ERROR OF RHO = 0.120605
 T-STATISTIC FOR RHO = 4.97211
 SUM OF SQUARED RESIDUALS = 0.194649E+10
 STANDARD ERROR OF THE REGRESSION = 6890.23
 MEAN OF DEPENDENT VARIABLE = 14435.3
 STANDARD DEVIATION = 11130.4
 R² = 0.629664
 ADJUSTED R² = 0.620631
 DURBIN-WATSON STATISTIC = 2.0991
 LOG OF LIKELIHOOD FUNCTION = -440.241
 NUMBER OF OBSERVATIONS = 43

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VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	7264.8	4012.1	1.8107
TVCCOA	0.98179	0.11123	8.8270

A-13 BRAZOS ELECTRIC POWER COOPERATIVE

MODEL: BEP

SYMBOL DECLARATIONS

ENDOGENOUS:

AFCBEP	-	AVERAGE FIXED COSTS:000'S OF \$ PER MWH
AQTBEP	-	AVERAGE FUEL EXPENSES AND PURCHASED POWER COSTS: 000'S OF \$ PER MWH
CAPBEP	-	COMMERCIAL AVERAGE PRICE:000'S OF \$ PER MWH
CAPINST	-	INSTRUMENT FOR CAPBEP
CSBEP	-	COMMERCIAL SALES:MWH
GENRBEP	-	GENERATION REQUIREMENTS:MWH
GRPLNTA	-	GENERATION REQUIREMENT FROM PLANT A:MWH
GRPLNTB	-	GENERATION REQUIREMENT FROM PLANT B:MWH
GRPLNTC	-	GENERATION REQUIREMENT FROM PLANT C:MWH
GRPPNU	-	GENERATION REQUIREMENTS FROM PURCHASED POWER FROM NON-UTILITY SOURCES:MWH
IAPBEP	-	INDUSTRIAL AVERAGE PRICE:000'S OF \$ PER MWH
IAPINST	-	INSTRUMENT FOR IAPBEP
ISBEP	-	INDUSTRIAL SALES:MWH
OAPBEP1	-	OTHER AVERAGE PRICE:000'S OF \$ PER MWH
OAPINST1	-	INSTRUMENT FOR OAPBEP1
OSBEP1	-	OTHER SALES INCLUDING SALES TO CITIES AND TEXAS A & M:MWH
PLNTAC	-	CONDITIONAL VARIABLE
PLNTBC	-	CONDITIONAL VARIABLE
PPNUC	-	CONDITIONAL VARIABLE
QTBEP	-	TOTAL FUEL EXPENSE AND PURCHASED POWER COST ESTIMATE: 000'S OF \$
RAPBEP	-	RESIDENTIAL AVERAGE PRICE:000'S OF \$ PER MWH
RAPINST	-	INSTRUMENT FOR RAPBEP
RSBEP	-	RESIDENTIAL SALES:MWH
TSBEP	-	TOTAL SYSTEM SALES (AT THE DISTRIBUTION POINTS):MWH
TVCBEP	-	TOTAL FUEL AND PURCHASED POWER EXPENSE REQUIREMENTS: 000'S OF \$

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

- VBEPNTA - VARIABLE COST FOR PLANT A:000'S OF \$
- VBEPNTB - VARIABLE COST FOR PLANT B:000'S OF \$
- VBEPNTC - VARIABLE COST FOR PLANT C:000'S OF \$
- VCPNU - PURCHASED POWER COST FROM NON-UTILITY SOURCES:
000'S OF \$

EXOGENOUS:

- C - CONSTANT TERM
- CCBEP - COMMERCIAL CUSTOMERS:NUMBER OF CUSTOMERS
- CCDDINST - INSTRUMENT FOR COMMERCIAL COOLING DEGREE DAYS
- Cddbep - COOLING DEGREE DAYS:NUMBER OF DAYS
- CHDDINST - INSTRUMENT FOR COMMERCIAL HEATING DEGREE DAYS
- CPITX - TEXAS CONSUMER PRICE INDEX
- D3 - DUMMY FOR QTBEPC
- GCPLNTA - GENERATION CAPABILITY OF PLANT A:MWH
- GCPLNTB - GENERATION CAPABILITY OF PLANT B:MWH
- GCPLNTC - GENERATION CAPABILITY OF PLANT C:MWH
- GCPNU - GENERATION CAPABILITY OF PURCHASED POWER FROM
NON-UTILITY SOURCES:MWH
- GNPD - GNP DEFLATOR
- Hddbep - HEATING DEGREE DAYS:NUMBER OF DAYS
- ILFCSBEP - LOSS FACTOR:COMMERCIAL SALES
- ILFISBEP - LOSS FACTOR:INDUSTRIAL SALES
- ILFRSBEP - LOSS FACTOR:RESIDENTIAL SALES
- MATFCBEP - FOUR QUARTER MOVING AVERAGE OF FIXED COSTS:000'S OF \$
- NAGBEP - NON-AGRICULTURAL EMPLOYMENT IN BEPC SERVICE AREA:
000'S OF PERSONS
- PPIF - PRODUCER PRICE INDEX:FINISHED GOODS
- PPII - PRODUCER PRICE INDEX:INDUSTRIAL GOODS
- RCBEP - RESIDENTIAL CUSTOMERS:NUMBER OF CUSTOMERS
- RCDDINST - INSTRUMENT FOR RESIDENTIAL COOLING DEGREE DAYS
- RHDDINST - INSTRUMENT FOR RESIDENTIAL HEATING DEGREE DAYS
- RPIBEP - REAL PERSONAL INCOME:BILLIONS OF \$
- RPNGCOMI - INSTRUMENT FOR PRICE OF NATURAL GAS TO COMMERCIAL
CUSTOMERS
- RPNGIND - REAL PRICE OF NATURAL GAS TO INDUSTRIAL CUSTOMERS;
\$ PER MCF

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- RPNGRES - REAL PRICE OF NATURAL GAS TO RESIDENTIAL CUSTOEMRS;
\$ PER MCF
- RPNGRESI - INSTRUMENT FOR PRICE OF NATURAL GAS TO RESIDENTIAL
CUSTOMERS:
- UFCPLNTA - FUEL COST TO PRODUCE ONE MWH OF ELECTRCITY IN PLANT A:
000'S OF \$
- UFCPLNTB - FUEL COST TO PRODUCE ONE MWH OF ELECTRCITY IN PLANT B:
000'S OF \$
- UFCPLNTC - FUEL COST TO PRODUCE ONE MWH OF ELECTRCITY IN PLANT C:
000'S OF \$
- UFCPPNU - UNIT COST OF PURCHASED POWER FROM NON-UTILITY SOURCES:
000'S OF \$

IDENTITIES

- AQTBEP = QTBEPT/TSBEP
- RAPINST = (RAPBEP/CPITX)*RCBEP
- CAPINST = (CAPBEP/PPIF)*CCBEP
- IAPINST = (IAPBEP/PPII)
- OAPINST1 = OAPBEP1/GNPD
- TSBEP = (RSBEP*ILFRSBEP+CSBEP*ILFCSBEP+ISBEP*ILFISBEP+OSBEP1)*
1.024
- AFCBEP = MATFCBEP/((TSBEP+TSBEP(-1)+TSBEP(-2)+TSBEP(-3))/4)
- GENRBEP = TSBEP*1.045
- PPNUC = GENRBEP-GCPPNU
- PLNTAC = PPNUC-GCPLNTA
- PLNTBC = PLNTAC-GCPLNTB
- GRPPNU = (PPNUC>0)*GCPPNU+(PPNUC<0)*GENRBEP
- VCPPNU = GRPPNU*UFCPPNU
- GRPLNTA = (PPNUC>0)*((PLNTAC>0)*GCPLNTA+(PLNTAC<0)*PPNUC)
- VCPLNTA = GRPLNTA*UFCPLNTA
- GRPLNTB = (PPNUC>0)*(PLNTAC>0)*((PLNTBC>0)*GCPLNTB+(PLNTBC<0)*PLNTAC)
- VCPLNTB = GRPLNTB*UFCPLNTB
- GRPLNTC = (PPNUC>0)*(PLNTAC>0)*(PLNTBC>0)*PLNTBC
- VCPLNTC = GRPLNTC*UFCPLNTC
- TVCBEP = VCPLNTA+VCPLNTB+VCPLNTC+VCPPNU

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

EQUATION ESTIMATES

2SLS ESTIMATION USING MAXIMUM LIKELIHOOD ITERATIVE TECHNIQUE

EQUATION 1: RESIDENTIAL SALES

$$RSBEP = a_0 + a_1 * RAPINST + a_2 * RPNGRESI + a_3 * RPIBEP(-4) + a_4 * RCDDINST + a_5 * RHDDINST$$

FINAL VALUE OF RHO = -0.790698
 STANDARD ERROR OF RHO = 0.961037E-01
 T-STATISTIC FOR RHO = -8.22755
 SUM OF SQUARED RESIDUALS = 0.129722E+11
 STANDARD ERROR OF THE REGRESSION = 19532.9
 MEAN OF DEPENDENT VARIABLE = 731010.
 STANDARD DEVIATION = 182458.
 R² = 0.990028
 ADJUSTED R² = 0.988561
 DURBIN-WATSON STATISTIC = 2.0196
 LOG OF LIKELIHOOD FUNCTION = -449.192
 NUMBER OF OBSERVATIONS = 40

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-0.13456E+06	19428	-6.9262
RAPINST	-38.780	9.836	-3.9426
RPNGRESI	0.39342	0.1245	3.1576
RPIBEP(-4)	0.54607E+06	35214	15.507
RCDDINST	0.12042E-02	0.97553E-04	12.344
RHDDINST	0.99574E-03	0.11039E-03	9.0205

A-13 BRAZOS ELECTRIC POWER COOPERATIVE

2SLS ESTIMATION USING MAXIMUM LIKELIHOOD ITERATIVE TECHNIQUE

EQUATION 2: COMMERCIAL SALES

$$\text{CSBEP} = b_0 + b_1 \cdot \text{CAPINST} + b_2 \cdot \text{RPNGCOMI} + b_3 \cdot \text{NAGBEP} + b_4 \cdot \text{CCDDINST} + b_5 \cdot \text{CHDDINST}$$

FINAL VALUE OF RHO	=	0.303356
STANDARD ERROR OF RHO	=	0.161749
T-STATISTIC FOR RHO	=	1.87547
SUM OF SQUARED RESIDUALS	=	0.590999E+09
STANDARD ERROR OF THE REGRESSION	=	4169.21
MEAN OF DEPENDENT VARIABLE	=	122570.
STANDARD DEVIATION	=	23418.4
R ²	=	0.972401
ADJUSTED R ²	=	0.968343
DURBIN-WATSON STATISTIC	=	1.8297
LOG OF LIKELIHOOD FUNCTION	=	-386.975
NUMBER OF OBSERVATIONS	=	40

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-88625.	12920.	-6.8596
CAPINST	-26.430	11.541	-2.2901
RPNGCOMI	0.65029	0.15704	4.1409
NAGBEP	1115.4	98.434	11.331
CCDDINST	0.97432E-03	0.92731E-04	10.507
CHDDINST	0.59314E-03	0.95814E-04	6.1905

2SLS ESTIMATION

EQUATION 3: INDUSTRIAL SALES

$$\text{ISBEP} = c_0 + c_1 \cdot \text{ISBEP}(-1) + c_2 \cdot \text{IAPINST} + c_3 \cdot \text{RPNGIND}(-4) + c_4 \cdot \text{NAGBEP}(-4) + c_5 \cdot \text{CDDBEP}$$

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

SUM OF SQUARED RESIDUALS = 0.687704E+09
 STANDARD ERROR OF THE REGRESSION = 4955.89
 MEAN OF DEPENDENT VARIABLE = 56207.5
 STANDARD DEVIATION = 16344.8
 R² = 0.922178
 ADJUSTED R² = 0.908282
 DURBIN-WATSON STATISTIC = 1.9842
 F-STATISTIC = 66.1896
 NUMBER OF OBSERVATIONS = 34

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	25308.	15575.	1.6249
ISBEP(-1)	0.60055	0.12142	4.9460
IAPINST	-0.10769E+07	0.31211E+06	-3.4502
RPNGIND(-4)	7313.78	3659.0	1.9988
NAGBEP(-4)	147.56	76.016	1.9412
CDDBEP	5.4384	1.3655	3.9826

2SLS ESTIMATION

EQUATION 4: OTHER SALES

$$\text{OSBEP1} = d0 + d1*\text{OSBEP1}(-1) + d2*\text{OAPINST1} + d3*\text{RPNGRES} + d4*\text{NAGBEP} + d5*\text{CDDBEP} + d5*\text{HDDBEP}$$

SUM OF SQUARED RESIDUALS = 0.249119E+10
 STANDARD ERROR OF THE REGRESSION = 8559.80
 MEAN OF DEPENDENT VARIABLE = 81027.5
 STANDARD DEVIATION = 26851.3
 R² = 0.913620
 ADJUSTED R² = 0.898376
 DURBIN-WATSON STATISTIC = 1.6569

A-13 BRAZOS ELECTRIC POWER COOPERATIVE

F-STATISTIC = 59.9345
 NUMBER OF OBSERVATIONS = 41

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	-77661.	31030.	-2.5027
OSBEP1(-1)	0.19252	0.72160E-01	2.6680
OAPINST1	-0.32507E+06	0.62391E+06	-0.52102
RPNGRES	29062.	15971.	1.819
NAGBEP	307.32	120.24	2.5559
CDDBEP	50.613	4.7295	10.702
Hddbep	21.348	5.1966	4.108

2 SLS ESTIMATION

EQUATION 5: RESIDENTIAL AVERAGE PRICE

$$RAPBEP = e_0 + e_1 \cdot AQTBEp + e_2 \cdot AFCBEP(-4) + e_3 \cdot AQTBEp(-4)$$

SUM OF SQUARED RESIDUALS = 0.450044E-03
 STANDARD ERROR OF THE REGRESSION = 0.369293E-02
 MEAN OF DEPENDENT VARIABLE = 0.725964E-01
 STANDARD DEVIATION = 0.108049E-01
 R² = 0.893820
 ADJUSTED R² = 0.884167
 DURBIN-WATSON STATISTIC = 2.0080
 F-STATISTIC = 91.7256
 NUMBER OF OBSERVATIONS = 37

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.11853E-01	0.44835E-02	2.6437
AQTBEp	0.61159	0.11433	5.3495
AFCBEP(-4)	1.1445	0.20919	5.4713
AQTBEp(-4)	0.49228	0.10780	4.5664

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

2SLS ESTIMATION

EQUATION 6: COMMERCIAL AVERAGE PRICE

$$\text{CAPBEP} = f_0 + f_1 \cdot \text{AQTBE} + f_2 \cdot \text{AFCE}(-4) + f_3 \cdot \text{AQTBE}(-4)$$

SUM OF SQUARED RESIDUALS = 0.317098E-03
 STANDARD ERROR OF THE REGRESSION = 0.309984E-02
 MEAN OF DEPENDENT VARIABLE = 0.673670E-01
 STANDARD DEVIATION = 0.951109E-02
 R² = 0.904933
 ADJUSTED R² = 0.896291
 DURBIN-WATSON STATISTIC = 2.3844
 F-STATISTIC = 101.970
 NUMBER OF OBSERVATIONS = 37

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.10703E-01	0.37635E-02	2.8440
AQTBE	0.63194	0.95967E-01	6.5850
AFCE(-4)	1.1598	0.17559	6.6049
AQTBE(-4)	0.35771	0.90490E-01	3.9531

2SLS ESTIMATION

EQUATION 7: INDUSTRIAL AVERAGE PRICE

$$\text{IAPBE} = g_0 + g_1 \cdot \text{AQTBE} + g_2 \cdot \text{AFCE} + g_3 \cdot \text{AQTBE}(-2)$$

SUM OF SQUARED RESIDUALS = 0.637496E-03
 STANDARD ERROR OF THE REGRESSION = 0.415086E-02
 MEAN OF DEPENDENT VARIABLE = 0.537954E-01

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STANDARD DEVIATION = 0.106493E-01
 R² = 0.860571
 ADJUSTED R² = 0.849266
 DURBIN-WATSON STATISTIC = 1.5684
 F-STATISTIC = 75.4290
 NUMBER OF OBSERVATIONS = 41

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.11605E-01	0.32320E-02	3.5906
AQTBEP	0.40164	0.15425	2.6037
AFCBEP	0.23940	0.21385	1.1195
AQTBEP(-2)	0.63455	0.16895	3.7559

2SLS ESTIMATION

EQUATION 8: OTHER AVERAGE PRICE

$$OAPBEP1 = h_0 + h_1 \cdot AQTBEP + h_2 \cdot AFCBEP(-1) + h_3 \cdot AQTBEP(-4)$$

SUM OF SQUARED RESIDUALS = 0.887845E-03
 STANDARD ERROR OF THE REGRESSION = 0.503657E-02
 MEAN OF DEPENDENT VARIABLE = 0.503129E-01
 STANDARD DEVIATION = 0.872652E-02
 R² = 0.693231
 ADJUSTED R² = 0.666937
 DURBIN-WATSON STATISTIC = 1.7014
 F-STATISTIC = 26.3589
 NUMBER OF OBSERVATIONS = 39

ECONOMIC MODELS: STATISTICAL EQUATION ESTIMATION

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	0.16149E-01	0.46028E-02	3.5085
AQTBEP	0.42468	0.13226	3.2108
AFCBEP(-1)	0.41670	0.29331	1.4207
AQTBEP(-4)	0.30502	0.14923	2.0440

2SLS ESTIMATION

EQUATION 9: TOTAL FUEL EXPENSE & PURCHASED POWER COST

$$QTBEF = i_0 + i_1 * TVCBEP + i_2 * D3$$

SUM OF SQUARED RESIDUALS	=	0.380461E+09
STANDARD ERROR OF THE REGRESSION	=	3164.20
MEAN OF DEPENDENT VARIABLE	=	29199.1
STANDARD DEVIATION	=	9947.82
R ²	=	0.905389
ADJUSTED R ²	=	0.900410
DURBIN-WATSON STATISTIC	=	1.4708
F-STATISTIC	=	178.678
NUMBER OF OBSERVATIONS	=	41

VARIABLE	ESTIMATED COEFFICIENT	STANDARD ERROR	T-STATISTIC
C	6676.6	2581.6	2.5863
TVCBEP	0.58535	0.139531	4.1951
D3	17256.	1079.3	15.987

HD
9685
.U6
T4
1991
v.3